



VIIYONG

产品手册

CALATOG2020

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片式多层陶瓷电容器产品手册

MULTILAYER CERAMIC CHIP CAPACITORS

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因为同一个产品可以有不同的包装方式(如0201尺寸可以编带为15K/盘和50K/盘),在本产品目录中,产品物料编码中的包装代码用“\*”号替代,需要完整的物料编码时,请参照第2-4页的包装编码补全,或者与我司联系确认。

*As there can be different packaging types for the same MLCC chip (eg. 15000pcs/reel and 50000pcs/reel for 0201 series), in this catalog, the packaging code in a part number is replaced by "\*". When a complete part number is required, please refer to packaging code instruction on page 2 and page 4, or please contact VIYYONG.*

### 产品型号规格及代码定义 Part Number System

举例Example — **V** **101** **J** **0201** **C0G** **500** **N** **A** **\***  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

#### ① 产品代码 Product Code

V表示VIIYONG通用型片式多层陶瓷电容器。

“V” represents multi-layer ceramic chip capacitor for general purpose

#### ② 标称容量代码 Nominal Capacitance Code

表示标称容量(单位:pF),前两位数码为有效数字,后一位数码为10的幂数;

当标称容量小于10pF时,以字母R表示小数点。

如:104=100000pF;4R7=4.7pF;0R5=0.5pF;R75=0.75pF

The nominal capacitance code is expressed in pico-farads and identified by a three-digit number. The first two digits represent significant figures. The last digit is a power of ten.

Example: 104=100000pF; 4R7=4.7pF; 0R5=0.5pF; R75=0.75pF.

#### ③ 标称容量的允许偏差代码 Tolerance Code

| 代码 Code | 静电容量允许偏差 Tolerance | 代码 Code | 静电容量允许偏差 Tolerance |
|---------|--------------------|---------|--------------------|
| P       | ±0.02pF            | J       | ±5%                |
| A       | ±0.05pF            | K       | ±10%               |
| B       | ±0.1pF             | L       | ±15%               |
| C       | ±0.25 pF           | M       | ±20%               |
| D       | ±0.5pF             | N       | ±30%               |
| F       | ±1%                | X       | ±40%               |
| G       | ±2%                | Z       | +80/-20%           |

#### ④ 尺寸代码 Size Code

| 尺寸代码 Size Code | GB/IEC/EIA | JIS/EIAJ | 长 L/mm | 宽 W/mm |
|----------------|------------|----------|--------|--------|
| 0105           | 01005      | 0402     | 0.4    | 0.2    |
| 0201           | 0201       | 0603     | 0.6    | 0.3    |
| 0402           | 0402       | 1005     | 1.0    | 0.5    |
| 0603           | 0603       | 1608     | 1.6    | 0.8    |
| 0805           | 0805       | 2012     | 2.0    | 1.25   |
| 1206           | 1206       | 3216     | 3.2    | 1.6    |

#### ⑤ 温度系数或温度特性 Temperature Coefficient or Temperature Characteristics

| 应用特性代码 Application Characteristics Code | 温度特性 Temperature Characteristics | STD | 温度范围 Temp. Range | 静电容量变化或温度系数 Temp. Coeff Or Cap. Change | 参考温度 Reference Temperature | 工作温度 Operating Temperature |
|---|----------------------------------|-----|------------------|--|----------------------------|----------------------------|
| C0G/HQC                                 | C0G                              | EIA | -55°C ~ +125°C   | 0 ± 30ppm/°C                           | 25°C                       | -55°C ~ +125°C             |
| X7R                                     | X7R                              | EIA | -55°C ~ +125°C   | ±15%                                   | 25°C                       | -55°C ~ +125°C             |
| X5R                                     | X5R                              | EIA | -55°C ~ +85°C    | ±15%                                   | 25°C                       | -55°C ~ +85°C              |
| X6S                                     | X6S                              | EIA | -55°C ~ +105°C   | ±22%                                   | 25°C                       | -55°C ~ +105°C             |
| X7T                                     | X7T                              | EIA | -55°C ~ +125°C   | +22/-33%                               | 25°C                       | -55°C ~ +125°C             |

#### ⑥ 额定电压代码 Rate Voltage Code

额定电压代码的前两位数码为有效数字,后一位数码为10的幂数,其中小数点用字母R表示。

The first two digits of the rated voltage code are valid digits, and the latter digit is a power of ten, where the decimal point is represented by the letter R.

例如 For example:

| 代码 Code                  | 2R5 | 4R0 | 6R3 | 100 | 160 | 250 | 350 | 500 | 102  | 202  |
|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| 额定电压 (Vdc) Rated Voltage | 2.5 | 4   | 6.3 | 10  | 16  | 25  | 35  | 50  | 1000 | 2000 |

#### ⑦ 端电极类型 Termination

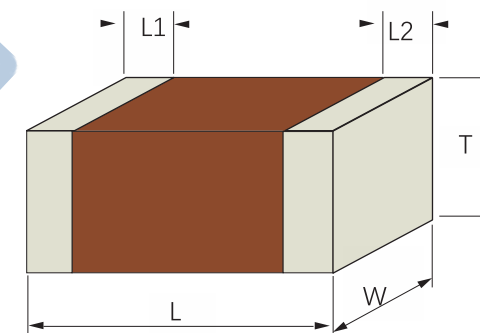
N表示Cu/Ni/Sn三层结构(Nickel Barrier).

N represent the “Cu/Ni/Sn” Structure.

#### ⑧ 厚度代码 Thickness Code

产品示意图 >>>

Product schematic diagram



| 产品尺寸代码 Size Code (EIA) | 长度 Length (L)                          | 宽度 Width (W)                           | 端头宽度 L1、L2 | 厚度 Thickness (T)                      | 厚度代码 Thickness Code |
|------------------------|--|--|------------|---------------------------------------|---------------------|
| 01005                  | 0.40 ± 0.02                            | 0.20 ± 0.02                            | 0.07~0.13  | 0.20 ± 0.02                           | Z                   |
| 0201                   | 0.60 ± 0.03                            | 0.30 ± 0.03                            | 0.1~0.2    | 0.30 ± 0.03                           | A                   |
|                        | 0.60 <sup>+0.05</sup> <sub>-0.03</sub> | 0.30 <sup>+0.05</sup> <sub>-0.03</sub> | 0.1~0.2    | 0.3 <sup>+0.05</sup> <sub>-0.03</sub> | J                   |
|                        | 0.60 <sup>+0.10</sup> <sub>-0.03</sub> | 0.30 <sup>+0.10</sup> <sub>-0.03</sub> | 0.1~0.2    | 0.3 <sup>+0.10</sup> <sub>-0.03</sub> | X                   |

| 产品尺寸代码<br>Size Code (EIA) | 长度<br>Length (L)                       | 宽度<br>Width (W)                        | 端头宽度<br>L1、L2 | 厚度<br>Thickness (T)                    | 厚度代码<br>Thickness Code |
|---------------------------|--|--|---------------|--|------------------------|
| 0402                      | 1.00 ± 0.05                            | 0.50 ± 0.05                            | 0.10~0.35     | 0.50 ± 0.05                            | B                      |
|                           | 1.00 <sup>+0.13</sup> <sub>-0.05</sub> | 0.50 <sup>+0.13</sup> <sub>-0.05</sub> | 0.10~0.35     | 0.50 <sup>+0.13</sup> <sub>-0.05</sub> | N                      |
|                           | 1.00 <sup>+0.20</sup> <sub>-0.05</sub> | 0.50 <sup>+0.20</sup> <sub>-0.05</sub> | 0.10~0.35     | 0.50 <sup>+0.20</sup> <sub>-0.05</sub> | C                      |
| 0603                      | 1.60 ± 0.10                            | 0.80 ± 0.10                            | 0.15~0.60     | 0.80 ± 0.10                            | D                      |
|                           | 1.60 <sup>+0.20</sup> <sub>-0.10</sub> | 0.80 <sup>+0.20</sup> <sub>-0.10</sub> | 0.15~0.60     | 0.80 <sup>+0.20</sup> <sub>-0.10</sub> | K                      |
|                           | 1.60 ± 0.25                            | 0.80 ± 0.25                            | 0.20~0.60     | 0.80 ± 0.25                            | 4                      |
| 0805                      | 2.00 ± 0.20                            | 1.25 ± 0.20                            | 0.20~0.75     | 0.85 <sup>+0.15</sup> <sub>-0.35</sub> | Y                      |
|                           | 2.00 <sup>+0.20</sup> <sub>-0.30</sub> | 1.25 <sup>+0.20</sup> <sub>-0.30</sub> | 0.20~0.75     | 1.25 <sup>+0.20</sup> <sub>-0.30</sub> | H                      |
| 1206                      | 3.20 ± 0.20                            | 1.60 ± 0.20                            | 0.25~0.75     | 0.85 <sup>+0.15</sup> <sub>-0.35</sub> | Y                      |
|                           | 3.20 ± 0.20                            | 1.60 ± 0.20                            | 0.25~0.75     | 1.15 ± 0.20                            | O                      |
|                           | 3.20 ± 0.20                            | 1.60 ± 0.20                            | 0.25~0.75     | 1.60 ± 0.20                            | L                      |
| 1210                      | 3.20 ± 0.20                            | 2.50 ± 0.20                            | 0.25~0.75     | 1.60 ± 0.20                            | L                      |
|                           | 3.20 ± 0.20                            | 2.50 ± 0.20                            | 0.25~0.75     | 2.00 ± 0.20                            | Q                      |
|                           | 3.20 ± 0.20                            | 2.50 ± 0.20                            | 0.25~0.75     | 2.50 ± 0.20                            | R                      |

| 产品尺寸代码<br>Size Code (EIA) | 产品包装代码<br>Packing code | 圆盘尺寸<br>Disc Size | 载带种类<br>Carrier Tape Type | 包装数 QTY<br>(Kpcs) |
|---------------------------|------------------------|-------------------|---------------------------|-------------------|
| 1206                      | R                      | 7"                | 塑带 Plastic                | 3                 |
|                           | P                      | 7"                | 塑带 Plastic                | 2                 |
|                           | T                      | 7"                | 纸带 Paper                  | 4                 |
|                           | Q                      | 7"                | 塑带 Plastic                | 4                 |
| 1210                      | P                      | 7"                | 塑带 Plastic                | 2                 |
|                           | Z                      | 7"                | 塑带 Plastic                | 1                 |
|                           | S                      | 7"                | 塑带 Plastic                | 0.5               |

⑨ 微容控制代码 VIIYONG Control Code

| 产品尺寸代码<br>Size Code (EIA) | 产品包装代码<br>Packing code | 圆盘尺寸<br>Disc Size | 载带种类<br>Carrier Tape Type | 包装数 QTY<br>(Kpcs) |
|---------------------------|------------------------|-------------------|---------------------------|-------------------|
| /                         | B                      | /                 | /                         | 散片 Bulk           |
| 01005                     | T                      | 7"                | 纸带 Paper                  | 20                |
|                           | P                      | 7"                | 塑带 Plastic                | 40                |
| 0201                      | H                      | 7"                | 纸带 Paper                  | 10                |
|                           | T                      | 7"                | 纸带 Paper                  | 15                |
|                           | L                      | 7"                | 纸带 Paper                  | 30                |
| 0402                      | J                      | 13"               | 纸带 Paper                  | 50                |
|                           | T                      | 7"                | 纸带 Paper                  | 10                |
|                           | X                      | 13"               | 纸带 Paper                  | 40                |
| 0603                      | J                      | 13"               | 纸带 Paper                  | 50                |
|                           | R                      | 7"                | 塑带 Plastic                | 3                 |
|                           | W                      | 7"                | 纸带 Paper                  | 3                 |
|                           | A                      | 13"               | 纸带 Paper                  | 15                |
| 0805                      | T                      | 7"                | 纸带 Paper                  | 4                 |
|                           | P                      | 7"                | 塑带 Plastic                | 2                 |
|                           | R                      | 7"                | 塑带 Plastic                | 3                 |



温度补偿型片式多层陶瓷电容器系列 COG *Temperature Compensated MLCC (COG)*

| 温度特性<br>T.C. Code | 微容系列代码<br>VIIYONG Type Code | 尺寸范围(EIA)<br>Size | 额定电压范围<br>Rated Voltage | 静电容量范围<br>Capacitance |
|-------------------|-----------------------------|-------------------|-------------------------|-----------------------|
| COG               | COG                         | 01005~0402        | 25~50Vdc                | 1.0pF~1.0nF           |

特点 Characteristics

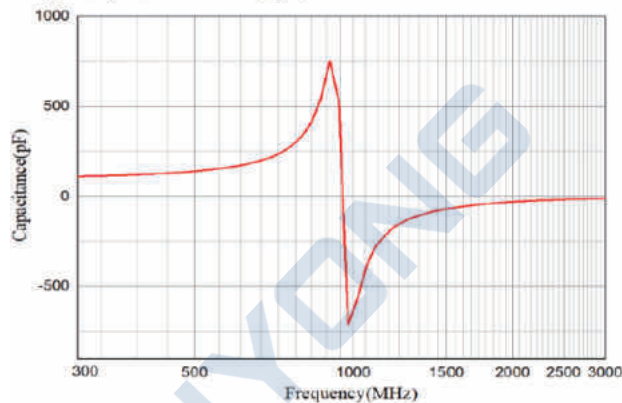
高可靠性、高稳定性、低损耗 High reliability, high stability and low dissipation  
容值范围宽 Wide range of capacitance

应用领域 Application Field

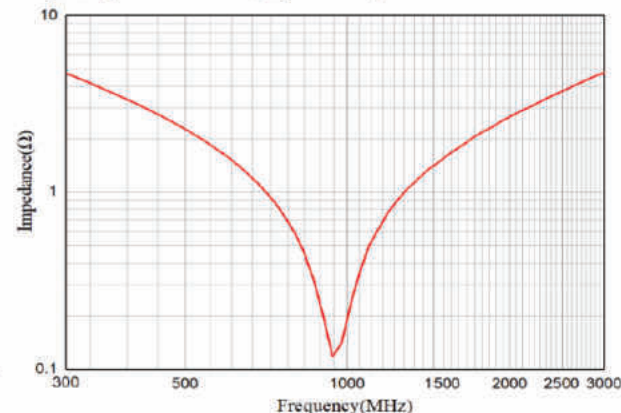
高频滤波电路、LC振荡电路、调谐电路、RC带通电路等  
High frequency filter circuit, LC oscillation circuit, tuning circuit, RC bandpass circuit etc.

高频特性 High Frequency Characteristics

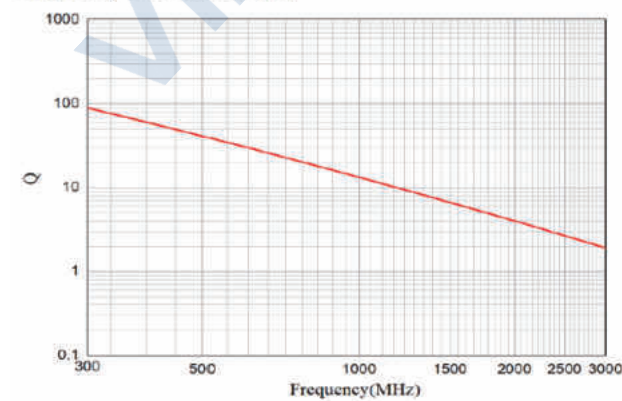
Frequency Characteristics(Cp-f)



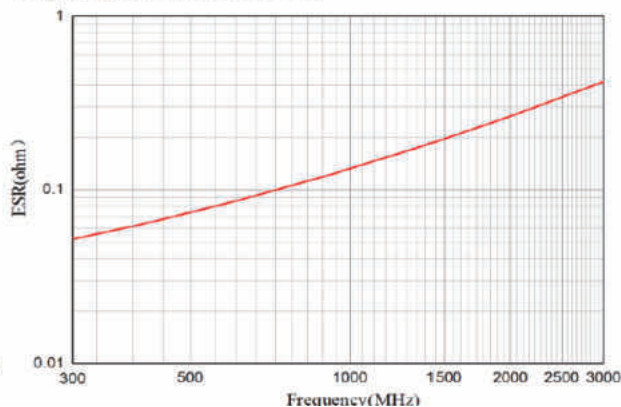
Frequency Characteristics(Impedance-f)



Frequency Characteristics(Q-f)



Frequency Characteristics(ESR-f)



注:上图为COG的100pF高频特性。

The figure above shows the high frequency characteristics of COG,100pF.

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness (mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|----------------------|--------------|-------------------|--------------------|
| 01005      | COG                        | COG                 | 25                           | 0.22 (max)           | 1pF          | ±0.1pF            | V1R0B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R0C0105COG250NZ* |
|            |                            |                     |                              |                      | 1.2pF        | ±0.1pF            | V1R2B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R2C0105COG250NZ* |
|            |                            |                     |                              |                      | 1.5pF        | ±0.1pF            | V1R5B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R5C0105COG250NZ* |
|            |                            |                     |                              |                      | 1.8pF        | ±0.1pF            | V1R8B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R8C0105COG250NZ* |
|            |                            |                     |                              |                      | 2pF          | ±0.1pF            | V2R0B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V2R0C0105COG250NZ* |
|            |                            |                     |                              |                      | 2.2pF        | ±0.1pF            | V2R2B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V2R2C0105COG250NZ* |
|            |                            |                     |                              |                      | 2.4pF        | ±0.1pF            | V2R4B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V2R4C0105COG250NZ* |
|            |                            |                     |                              |                      | 2.7pF        | ±0.1pF            | V2R7B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V2R7C0105COG250NZ* |
|            |                            |                     |                              |                      | 3pF          | ±0.1pF            | V3R0B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V3R0C0105COG250NZ* |
|            |                            |                     |                              |                      | 3.6pF        | ±0.1pF            | V3R6B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V3R6C0105COG250NZ* |
|            |                            |                     |                              |                      | 3.9pF        | ±0.1pF            | V3R9B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V3R9C0105COG250NZ* |
|            |                            |                     |                              |                      | 4pF          | ±0.1pF            | V4R0B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V4R0C0105COG250NZ* |
|            |                            |                     |                              |                      | 4.7pF        | ±0.1pF            | V4R7B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V4R7C0105COG250NZ* |
|            |                            |                     |                              |                      | 5pF          | ±0.1pF            | V5R0B0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V5R0C0105COG250NZ* |
|            |                            |                     |                              |                      | 5.6pF        | ±0.25pF           | V5R6C0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.5pF            | V5R6D0105COG250NZ* |
|            |                            |                     |                              |                      | 6.8pF        | ±0.25pF           | V6R8C0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.5pF            | V6R8D0105COG250NZ* |
| 7.5pF      | ±0.25pF                    | V7R5C0105COG250NZ*  |                              |                      |              |                   |                    |
|            | ±0.5pF                     | V7R5D0105COG250NZ*  |                              |                      |              |                   |                    |
| 8pF        | ±0.25pF                    | V8R0C0105COG250NZ*  |                              |                      |              |                   |                    |
|            | ±0.5pF                     | V8R0D0105COG250NZ*  |                              |                      |              |                   |                    |
| 8.2pF      | ±0.25pF                    | V8R2C0105COG250NZ*  |                              |                      |              |                   |                    |
|            | ±0.5pF                     | V8R2D0105COG250NZ*  |                              |                      |              |                   |                    |

规格型号及品名 *SpedifitdRiongModdlRad NamDarmber*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness (mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|----------------------|--------------|-------------------|--------------------|
| 01005      | COG                        | COG                 | 25                           | 0.22 (max)           | 9pF          | ±0.25pF           | V9R0C0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±0.5pF            | V9R0D0105COG250NZ* |
|            |                            |                     |                              |                      | 10pF         | ±2%               | V100G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V100J0105COG250NZ* |
|            |                            |                     |                              |                      | 12pF         | ±2%               | V120G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V120J0105COG250NZ* |
|            |                            |                     |                              |                      | 15pF         | ±2%               | V150G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V150J0105COG250NZ* |
|            |                            |                     |                              |                      | 18pF         | ±2%               | V180G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V180J0105COG250NZ* |
|            |                            |                     |                              |                      | 20pF         | ±2%               | V200G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V200J0105COG250NZ* |
|            |                            |                     |                              |                      | 22pF         | ±2%               | V220G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V220J0105COG250NZ* |
|            |                            |                     |                              |                      | 24pF         | ±2%               | V240G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V240J0105COG250NZ* |
|            |                            |                     |                              |                      | 27pF         | ±2%               | V270G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V270J0105COG250NZ* |
|            |                            |                     |                              |                      | 33pF         | ±2%               | V330G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V330J0105COG250NZ* |
|            |                            |                     |                              |                      | 39pF         | ±2%               | V390G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V390J0105COG250NZ* |
|            |                            |                     |                              |                      | 47pF         | ±2%               | V470G0105COG250NZ* |
|            |                            |                     |                              |                      |              | ±5%               | V470J0105COG250NZ* |
| 56pF       | ±2%                        | V560G0105COG250NZ*  |                              |                      |              |                   |                    |
|            | ±5%                        | V560J0105COG250NZ*  |                              |                      |              |                   |                    |
| 68pF       | ±2%                        | V680G0105COG250NZ*  |                              |                      |              |                   |                    |
|            | ±5%                        | V680J0105COG250NZ*  |                              |                      |              |                   |                    |
| 82pF       | ±2%                        | V820G0105COG250NZ*  |                              |                      |              |                   |                    |
|            | ±5%                        | V820J0105COG250NZ*  |                              |                      |              |                   |                    |
| 100pF      | ±2%                        | V101G0105COG250NZ*  |                              |                      |              |                   |                    |
|            | ±5%                        | V101J0105COG250NZ*  |                              |                      |              |                   |                    |
| 0201       | COG                        | COG                 | 50                           | 0.33 (max)           | 1pF          | ±0.05pF           | V1R0A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V1R0B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R0C0201COG500NA* |
|            |                            |                     |                              |                      | 1.2pF        | ±0.05pF           | V1R2A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V1R2B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R2C0201COG500NA* |

规格型号及品名 *SpedifitdRiongModdlRad NamDarmber*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness (mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|----------------------|--------------|-------------------|--------------------|
| 0201       | COG                        | COG                 | 50                           | 0.33 (max)           | 1.5pF        | ±0.05pF           | V1R5A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V1R5B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R5C0201COG500NA* |
|            |                            |                     |                              |                      | 1.8pF        | ±0.05pF           | V1R8A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V1R8B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R8C0201COG500NA* |
|            |                            |                     |                              |                      | 2pF          | ±0.05pF           | V2R0A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V2R0B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V2R0C0201COG500NA* |
|            |                            |                     |                              |                      | 2.2pF        | ±0.05pF           | V2R2A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V2R2B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V2R2C0201COG500NA* |
|            |                            |                     |                              |                      | 2.4pF        | ±0.05pF           | V2R4A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V2R4B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V2R4C0201COG500NA* |
|            |                            |                     |                              |                      | 2.7pF        | ±0.05pF           | V2R7A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V2R7B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V2R7C0201COG500NA* |
|            |                            |                     |                              |                      | 3pF          | ±0.05pF           | V3R0A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V3R0B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V3R0C0201COG500NA* |
|            |                            |                     |                              |                      | 3.3pF        | ±0.05pF           | V3R3A0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V3R3B0201COG500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V3R3C0201COG500NA* |
| 3.6pF      | ±0.05pF                    | V3R6A0201COG500NA*  |                              |                      |              |                   |                    |
|            | ±0.1pF                     | V3R6B0201COG500NA*  |                              |                      |              |                   |                    |
|            | ±0.25pF                    | V3R6C0201COG500NA*  |                              |                      |              |                   |                    |
| 3.9pF      | ±0.05pF                    | V3R9A0201COG500NA*  |                              |                      |              |                   |                    |
|            | ±0.1pF                     | V3R9B0201COG500NA*  |                              |                      |              |                   |                    |
|            | ±0.25pF                    | V3R9C0201COG500NA*  |                              |                      |              |                   |                    |
| 4pF        | ±0.05pF                    | V4R0A0201COG500NA*  |                              |                      |              |                   |                    |
|            | ±0.1pF                     | V4R0B0201COG500NA*  |                              |                      |              |                   |                    |
|            | ±0.25pF                    | V4R0C0201COG500NA*  |                              |                      |              |                   |                    |
| 4.3pF      | ±0.05pF                    | V4R3A0201COG500NA*  |                              |                      |              |                   |                    |
|            | ±0.1pF                     | V4R3B0201COG500NA*  |                              |                      |              |                   |                    |
|            | ±0.25pF                    | V4R3C0201COG500NA*  |                              |                      |              |                   |                    |



规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0201       | COG                        | COG                 | 50                           | 0.33(max)           | 4.7pF        | ±0.05pF           | V4R7A0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R7B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R7C0201COG500NA* |
|            |                            |                     |                              |                     | 5pF          | ±0.05pF           | V5R0A0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V5R0B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V5R0C0201COG500NA* |
|            |                            |                     |                              |                     | 5.6pF        | ±0.1pF            | V5R6B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V5R6C0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V5R6D0201COG500NA* |
|            |                            |                     |                              |                     | 6.0pF        | ±0.1pF            | V6R0B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V6R0C0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V6R0D0201COG500NA* |
|            |                            |                     |                              |                     | 6.2pF        | ±0.1pF            | V6R2B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V6R2C0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V6R2D0201COG500NA* |
|            |                            |                     |                              |                     | 6.8pF        | ±0.1pF            | V6R8B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V6R8C0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V6R8D0201COG500NA* |
|            |                            |                     |                              |                     | 7pF          | ±0.1pF            | V7R0B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V7R0C0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V7R0D0201COG500NA* |
|            |                            |                     |                              |                     | 7.5pF        | ±0.1pF            | V7R5B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V7R5C0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V7R5D0201COG500NA* |
|            |                            |                     |                              |                     | 8pF          | ±0.1pF            | V8R0B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V8R0C0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V8R0D0201COG500NA* |
|            |                            |                     |                              |                     | 8.2pF        | ±0.1pF            | V8R2B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V8R2C0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V8R2D0201COG500NA* |
|            |                            |                     |                              |                     | 9pF          | ±0.1pF            | V9R0B0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V9R0C0201COG500NA* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V9R0D0201COG500NA* |
|            |                            |                     |                              |                     | 10pF         | ±2%               | V100G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%               | V100J0201COG500NA* |
|            |                            |                     |                              |                     | 12pF         | ±2%               | V120G0201COG500NA* |
| ±5%        | V120J0201COG500NA*         |                     |                              |                     |              |                   |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance  | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|--------------------|--------------------|
| 0201       | COG                        | COG                 | 50                           | 0.33(max)           | 15pF         | ±2%                | V150G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V150J0201COG500NA* |
|            |                            |                     |                              |                     | 18pF         | ±2%                | V180G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V180J0201COG500NA* |
|            |                            |                     |                              |                     | 20pF         | ±2%                | V200G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V200J0201COG500NA* |
|            |                            |                     |                              |                     | 22pF         | ±2%                | V220G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V220J0201COG500NA* |
|            |                            |                     |                              |                     | 27pF         | ±2%                | V270G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V270J0201COG500NA* |
|            |                            |                     |                              |                     | 30pF         | ±2%                | V300G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V300J0201COG500NA* |
|            |                            |                     |                              |                     | 33pF         | ±2%                | V330G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V330J0201COG500NA* |
|            |                            |                     |                              |                     | 39pF         | ±2%                | V390G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V390J0201COG500NA* |
|            |                            |                     |                              |                     | 47pF         | ±2%                | V470G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V470J0201COG500NA* |
|            |                            |                     |                              |                     | 56pF         | ±2%                | V560G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V560J0201COG500NA* |
|            |                            |                     |                              |                     | 68pF         | ±2%                | V680G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V680J0201COG500NA* |
|            |                            |                     |                              |                     | 82pF         | ±2%                | V820G0201COG500NA* |
|            |                            |                     |                              |                     |              | ±5%                | V820J0201COG500NA* |
|            |                            |                     | 100pF                        |                     | ±2%          | V101G0201COG500NA* |                    |
|            |                            |                     |                              |                     | ±5%          | V101J0201COG500NA* |                    |
|            |                            |                     | 120pF                        |                     | ±2%          | V121G0201COG500NA* |                    |
|            |                            |                     |                              |                     | ±5%          | V121J0201COG500NA* |                    |
|            |                            |                     | 150pF                        |                     | ±2%          | V151G0201COG500NA* |                    |
|            |                            |                     |                              |                     | ±5%          | V151J0201COG500NA* |                    |
|            |                            |                     | 180pF                        |                     | ±2%          | V181G0201COG500NA* |                    |
|            |                            |                     |                              |                     | ±5%          | V181J0201COG500NA* |                    |
|            |                            |                     | 220pF                        |                     | ±2%          | V221G0201COG500NA* |                    |
|            |                            |                     |                              |                     | ±5%          | V221J0201COG500NA* |                    |
|            |                            |                     | 270pF                        |                     | ±2%          | V271G0201COG250NA* |                    |
|            |                            |                     |                              |                     | ±5%          | V271J0201COG250NA* |                    |
| 330pF      | ±2%                        | V331G0201COG250NA*  |                              |                     |              |                    |                    |
|            | ±5%                        | V331J0201COG250NA*  |                              |                     |              |                    |                    |
|            |                            |                     | 25                           |                     |              |                    |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0201       | COG                        | COG                 | 25                           | 0.33(max)           | 390pF        | ±2%               | V391G0201COG250NA* |
|            |                            |                     |                              |                     |              | ±5%               | V391J0201COG250NA* |
|            |                            |                     |                              |                     | 470pF        | ±2%               | V471G0201COG250NA* |
|            |                            |                     |                              |                     |              | ±5%               | V471J0201COG250NA* |
|            |                            |                     |                              |                     | 560pF        | ±2%               | V561G0201COG250NA* |
|            |                            |                     |                              |                     |              | ±5%               | V561J0201COG250NA* |
|            |                            |                     |                              |                     | 680pF        | ±2%               | V681G0201COG250NA* |
|            |                            |                     |                              |                     |              | ±5%               | V681J0201COG250NA* |
|            |                            |                     |                              |                     | 820pF        | ±2%               | V821G0201COG250NA* |
|            |                            |                     |                              |                     |              | ±5%               | V821J0201COG250NA* |
|            |                            |                     |                              |                     | 1nF          | ±2%               | V102G0201COG250NA* |
|            |                            |                     |                              |                     |              | ±5%               | V102J0201COG250NA* |
| ±5%        | V102J0201COG250NA*         |                     |                              |                     |              |                   |                    |
| 0402       | COG                        | COG                 | 50                           | 0.55(max)           | 1pF          | ±0.05pF           | V1R0A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R0B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R0C0402COG500NB* |
|            |                            |                     |                              |                     | 1.2pF        | ±0.05pF           | V1R2A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R2B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R2C0402COG500NB* |
|            |                            |                     |                              |                     | 1.5pF        | ±0.05pF           | V1R5A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R5B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R5C0402COG500NB* |
|            |                            |                     |                              |                     | 1.8pF        | ±0.05pF           | V1R8A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R8B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R8C0402COG500NB* |
|            |                            |                     |                              |                     | 2pF          | ±0.05pF           | V2R0A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R0B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R0C0402COG500NB* |
|            |                            |                     |                              |                     | 2.2pF        | ±0.05pF           | V2R2A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R2B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R2C0402COG500NB* |
|            |                            |                     |                              |                     | 2.4pF        | ±0.05pF           | V2R4A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R4B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R4C0402COG500NB* |
|            |                            |                     |                              |                     | 2.7pF        | ±0.05pF           | V2R7A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R7B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R7C0402COG500NB* |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0402       | COG                        | COG                 | 50                           | 0.55(max)           | 3pF          | ±0.05pF           | V3R0A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R0B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R0C0402COG500NB* |
|            |                            |                     |                              |                     | 3.3pF        | ±0.05pF           | V3R3A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R3B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R3C0402COG500NB* |
|            |                            |                     |                              |                     | 3.6pF        | ±0.05pF           | V3R6A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R6B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R6C0402COG500NB* |
|            |                            |                     |                              |                     | 3.9pF        | ±0.05pF           | V3R9A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R9B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R9C0402COG500NB* |
|            |                            |                     |                              |                     | 4pF          | ±0.05pF           | V4R0A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R0B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R0C0402COG500NB* |
|            |                            |                     |                              |                     | 4.3pF        | ±0.05pF           | V4R3A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R3B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R3C0402COG500NB* |
|            |                            |                     |                              |                     | 4.7pF        | ±0.05pF           | V4R7A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R7B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R7C0402COG500NB* |
|            |                            |                     |                              |                     | 5pF          | ±0.05pF           | V5R0A0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V5R0B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V5R0C0402COG500NB* |
| 5.6pF      | ±0.1pF                     | V5R6B0402COG500NB*  |                              |                     |              |                   |                    |
|            | ±0.25pF                    | V5R6C0402COG500NB*  |                              |                     |              |                   |                    |
|            | ±0.5pF                     | V5R6D0402COG500NB*  |                              |                     |              |                   |                    |
| 6.0pF      | ±0.1pF                     | V6R0B0402COG500NB*  |                              |                     |              |                   |                    |
|            | ±0.25pF                    | V6R0C0402COG500NB*  |                              |                     |              |                   |                    |
|            | ±0.5pF                     | V6R0D0402COG500NB*  |                              |                     |              |                   |                    |
| 6.2pF      | ±0.1pF                     | V6R2B0402COG500NB*  |                              |                     |              |                   |                    |
|            | ±0.25pF                    | V6R2C0402COG500NB*  |                              |                     |              |                   |                    |
|            | ±0.5pF                     | V6R2D0402COG500NB*  |                              |                     |              |                   |                    |
| 6.8pF      | ±0.1pF                     | V6R8B0402COG500NB*  |                              |                     |              |                   |                    |
|            | ±0.25pF                    | V6R8C0402COG500NB*  |                              |                     |              |                   |                    |
|            | ±0.5pF                     | V6R8D0402COG500NB*  |                              |                     |              |                   |                    |



规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0402       | COG                        | COG                 | 50                           | 0.55(max)           | 7pF          | ±0.1pF            | V7R0B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V7R0C0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V7R0D0402COG500NB* |
|            |                            |                     |                              |                     | 7.5pF        | ±0.1pF            | V7R5B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V7R5C0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V7R5D0402COG500NB* |
|            |                            |                     |                              |                     | 8pF          | ±0.1pF            | V8R0B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V8R0C0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V8R0D0402COG500NB* |
|            |                            |                     |                              |                     | 8.2pF        | ±0.1pF            | V8R2B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V8R2C0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V8R2D0402COG500NB* |
|            |                            |                     |                              |                     | 9pF          | ±0.1pF            | V9R0B0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V9R0C0402COG500NB* |
|            |                            |                     |                              |                     |              | ±0.5pF            | V9R0D0402COG500NB* |
|            |                            |                     |                              |                     | 10pF         | ±2%               | V100G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V100J0402COG500NB* |
|            |                            |                     |                              |                     | 12pF         | ±2%               | V120G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V120J0402COG500NB* |
|            |                            |                     |                              |                     | 15pF         | ±2%               | V150G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V150J0402COG500NB* |
|            |                            |                     |                              |                     | 18pF         | ±2%               | V180G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V180J0402COG500NB* |
|            |                            |                     |                              |                     | 20pF         | ±2%               | V200G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V200J0402COG500NB* |
|            |                            |                     |                              |                     | 22pF         | ±2%               | V220G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V220J0402COG500NB* |
|            |                            |                     |                              |                     | 24pF         | ±2%               | V240G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V240J0402COG500NB* |
|            |                            |                     |                              |                     | 27pF         | ±2%               | V270G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V270J0402COG500NB* |
|            |                            |                     |                              |                     | 30pF         | ±2%               | V300G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V300J0402COG500NB* |
|            |                            |                     |                              |                     | 33pF         | ±2%               | V330G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V330J0402COG500NB* |
|            |                            |                     |                              |                     | 36pF         | ±2%               | V360G0402COG500NB* |
| ±5%        | V360J0402COG500NB*         |                     |                              |                     |              |                   |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0402       | COG                        | COG                 | 50                           | 0.55(max)           | 39pF         | ±2%               | V390G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V390J0402COG500NB* |
|            |                            |                     |                              |                     | 47pF         | ±2%               | V470G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V470J0402COG500NB* |
|            |                            |                     |                              |                     | 56pF         | ±2%               | V560G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V560J0402COG500NB* |
|            |                            |                     |                              |                     | 68pF         | ±2%               | V680G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V680J0402COG500NB* |
|            |                            |                     |                              |                     | 82pF         | ±2%               | V820G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V820J0402COG500NB* |
|            |                            |                     |                              |                     | 100pF        | ±2%               | V101G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V101J0402COG500NB* |
|            |                            |                     |                              |                     | 120pF        | ±2%               | V121G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V121J0402COG500NB* |
|            |                            |                     |                              |                     | 150pF        | ±2%               | V151G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V151J0402COG500NB* |
|            |                            |                     |                              |                     | 180pF        | ±2%               | V181G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V181J0402COG500NB* |
|            |                            |                     |                              |                     | 200pF        | ±2%               | V201G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V201J0402COG500NB* |
|            |                            |                     |                              |                     | 220pF        | ±2%               | V221G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V221J0402COG500NB* |
|            |                            |                     |                              |                     | 270pF        | ±2%               | V271G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V271J0402COG500NB* |
|            |                            |                     |                              |                     | 330pF        | ±2%               | V331G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V331J0402COG500NB* |
|            |                            |                     |                              |                     | 360pF        | ±2%               | V361G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V361J0402COG500NB* |
|            |                            |                     |                              |                     | 390pF        | ±2%               | V391G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V391J0402COG500NB* |
|            |                            |                     |                              |                     | 470pF        | ±2%               | V471G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V471J0402COG500NB* |
|            |                            |                     |                              |                     | 560pF        | ±2%               | V561G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V561J0402COG500NB* |
|            |                            |                     |                              |                     | 680pF        | ±2%               | V681G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V681J0402COG500NB* |
| 820pF      | ±2%                        | V821G0402COG500NB*  |                              |                     |              |                   |                    |
|            | ±5%                        | V821J0402COG500NB*  |                              |                     |              |                   |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0402       | COG                        | COG                 | 50                           | 0.55 (max)          | 1.0nF        | ±2%               | V102G0402COG500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V102J0402COG500NB* |

\*1类陶瓷的部分特性说明Description of partial characteristics of Class 1 dielectric

1类陶瓷介质由于其材料特性保证,在放置状态下不会存在容量衰减现象(即老化现象),不仅如此,1类陶瓷介质在低频段(1MHz)的直流偏压特性、温度特性、交流电压特性中均表现出“0”变化(变化率极小,  $\alpha_c \leq \pm 30\text{ppm}/^\circ\text{C}$ )。因此,1类陶瓷材料的AC/DC/TC特性曲线均展现为直线。

All guaranteed by the material properties, there is no capacity attenuation in the placed state to the Class 1 dielectric. And, at 1MHz, the AC voltage characteristics, DC bias characteristics, temperature characteristics of Class 1 dielectric are Shows a "0" change(Very small rate of change,  $\alpha_c \leq \pm 30\text{ppm}/^\circ\text{C}$ ). Therefore, the AC/DC/TC characteristics curve of Class 1 dielectric are shown as straight line.

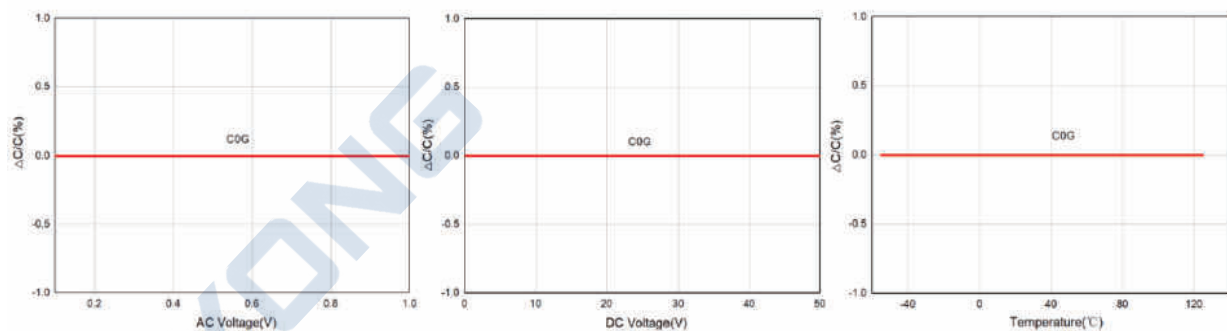


图 COG的AC/DC/TC特性曲(AC/DC/TC characteristics curve of COG)

RF/微波片式多层陶瓷电容器系列 HQC *RF and Microwave Circuit MLCC (HQC)*

| 温度特性<br>T.C. Code | 微容系列代码<br>VIIYONG Type Code | 尺寸范围(EIA)<br>Size | 额定电压范围<br>Rated Voltage | 静电容量范围<br>Capacitance |
|-------------------|-----------------------------|-------------------|-------------------------|-----------------------|
| C0G               | HQC                         | 01005~0402        | 25~50Vdc                | 0.1 pF~33pF           |

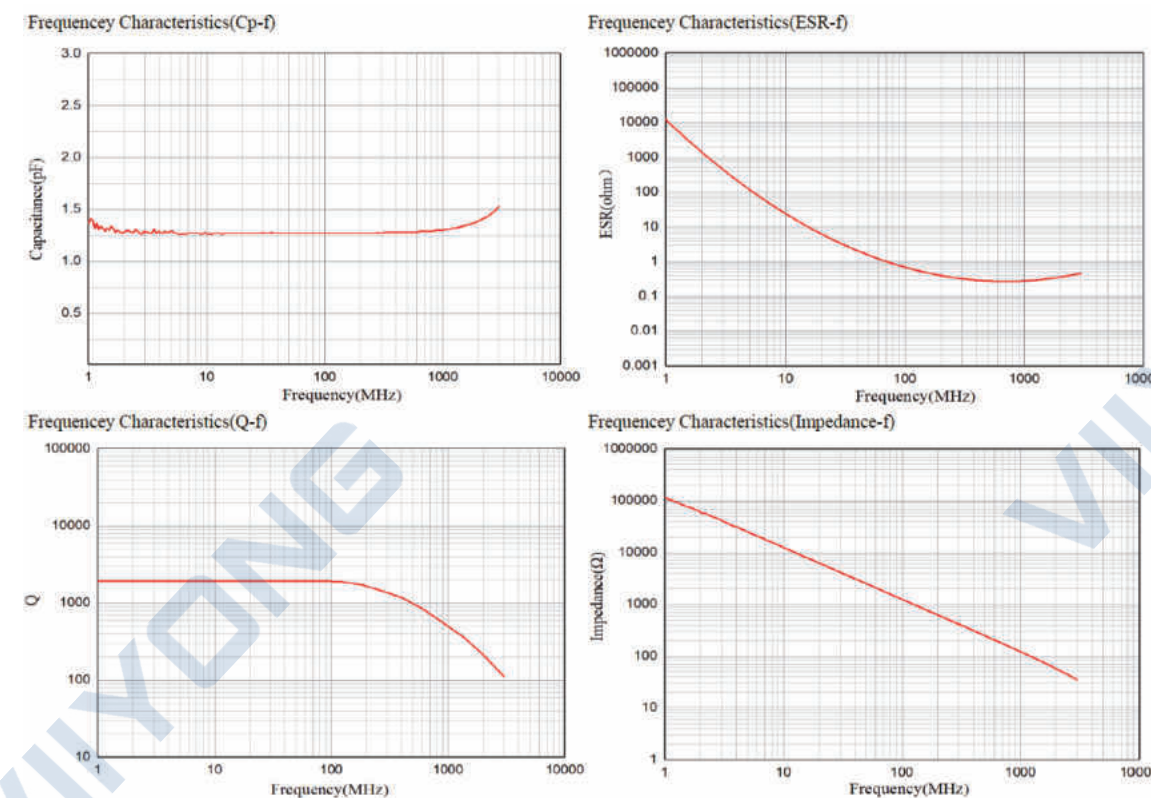
HQC特点 Characteristics

1.稳定性高 High stability 2.低ESR Low ESR 3.高Q值 High Q

应用领域 Application Field

低损耗、稳定性要求高的高频电路 High-frequency circuit with low loss and high stability requirements  
各种射频模块电路 Various RF module circuits

HQC高频特性 High Frequency Characteristics



注:上图为HQC的1.2pF高频特性。

The figure above shows the high frequency characteristics of HQC,1.2pF.



规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 01005      | HQC                        | COG                 | 25                           | 0.22(max)           | 0.2pF        | ±0.05pF           | V0R2A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R2B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V0R2C0105HQC250NZ* |
|            |                            |                     |                              |                     | 0.3pF        | ±0.05pF           | V0R3A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R3B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V0R3C0105HQC250NZ* |
|            |                            |                     |                              |                     | 0.4pF        | ±0.05pF           | V0R4A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R4B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V0R4C0105HQC250NZ* |
|            |                            |                     |                              |                     | 0.5pF        | ±0.05pF           | V0R5A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R5B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V0R5C0105HQC250NZ* |
|            |                            |                     |                              |                     | 0.6pF        | ±0.05pF           | V0R6A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R6B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V0R6C0105HQC250NZ* |
|            |                            |                     |                              |                     | 0.7pF        | ±0.05pF           | V0R7A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R7B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V0R7C0105HQC250NZ* |
|            |                            |                     |                              |                     | 0.8pF        | ±0.05pF           | V0R8A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R8B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V0R8C0105HQC250NZ* |
|            |                            |                     |                              |                     | 0.9pF        | ±0.05pF           | V0R9A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R9B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V0R9C0105HQC250NZ* |
|            |                            |                     |                              |                     | 1pF          | ±0.05pF           | V1R0A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R0B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R0C0105HQC250NZ* |
|            |                            |                     |                              |                     | 1.2pF        | ±0.05pF           | V1R2A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R2B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R2C0105HQC250NZ* |
| 1.3pF      | ±0.05pF                    | V1R3A0105HQC250NZ*  |                              |                     |              |                   |                    |
|            | ±0.1pF                     | V1R3B0105HQC250NZ*  |                              |                     |              |                   |                    |
|            | ±0.25pF                    | V1R3C0105HQC250NZ*  |                              |                     |              |                   |                    |
| 1.5pF      | ±0.05pF                    | V1R5A0105HQC250NZ*  |                              |                     |              |                   |                    |
|            | ±0.1pF                     | V1R5B0105HQC250NZ*  |                              |                     |              |                   |                    |
|            | ±0.25pF                    | V1R5C0105HQC250NZ*  |                              |                     |              |                   |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 01005      | HQC                        | COG                 | 25                           | 0.22(max)           | 1.8pF        | ±0.05pF           | V1R8A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R8B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R8C0105HQC250NZ* |
|            |                            |                     |                              |                     | 2pF          | ±0.05pF           | V2R0A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R0B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R0C0105HQC250NZ* |
|            |                            |                     |                              |                     | 2.2pF        | ±0.05pF           | V2R2A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R2B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R2C0105HQC250NZ* |
|            |                            |                     |                              |                     | 2.4pF        | ±0.05pF           | V2R4A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R4B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R4C0105HQC250NZ* |
|            |                            |                     |                              |                     | 2.7pF        | ±0.05pF           | V2R7A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R7B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R7C0105HQC250NZ* |
|            |                            |                     |                              |                     | 3pF          | ±0.05pF           | V3R0A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R0B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R0C0105HQC250NZ* |
|            |                            |                     |                              |                     | 3.6pF        | ±0.05pF           | V3R6A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R6B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R6C0105HQC250NZ* |
|            |                            |                     |                              |                     | 3.9pF        | ±0.05pF           | V3R9A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R9B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R9C0105HQC250NZ* |
|            |                            |                     |                              |                     | 4pF          | ±0.05pF           | V4R0A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R0B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R0C0105HQC250NZ* |
|            |                            |                     |                              |                     | 4.7pF        | ±0.05pF           | V4R7A0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R7B0105HQC250NZ* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R7C0105HQC250NZ* |
| 5pF        | ±0.05pF                    | V5R0A0105HQC250NZ*  |                              |                     |              |                   |                    |
|            | ±0.1pF                     | V5R0B0105HQC250NZ*  |                              |                     |              |                   |                    |
|            | ±0.25pF                    | V5R0C0105HQC250NZ*  |                              |                     |              |                   |                    |
| 5.6pF      | ±0.1pF                     | V5R6B0105HQC250NZ*  |                              |                     |              |                   |                    |
|            | ±0.25pF                    | V5R6C0105HQC250NZ*  |                              |                     |              |                   |                    |
|            | ±0.1pF                     | V6R0B0105HQC250NZ*  |                              |                     |              |                   |                    |
| 6pF        | ±0.25pF                    | V6R0C0105HQC250NZ*  |                              |                     |              |                   |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application code | 温度特性代码<br>T. C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness (mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>PartNumber   |
|------------|----------------------------|----------------------|------------------------------|----------------------|--------------|-------------------|--------------------|
| 01005      | HQC                        | COG                  | 25                           | 0.22 (max)           | 6.2pF        | ±0.1pF            | V6R2B0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±0.25pF           | V6R2C0105HQC250NZ* |
|            |                            |                      |                              |                      | 6.8pF        | ±0.1pF            | V6R8B0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±0.25pF           | V6R8C0105HQC250NZ* |
|            |                            |                      |                              |                      | 7pF          | ±0.1pF            | V7R0B0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±0.25pF           | V7R0C0105HQC250NZ* |
|            |                            |                      |                              |                      | 7.5pF        | ±0.1pF            | V7R5B0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±0.25pF           | V7R5C0105HQC250NZ* |
|            |                            |                      |                              |                      | 8pF          | ±0.1pF            | V8R0B0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±0.25pF           | V8R0C0105HQC250NZ* |
|            |                            |                      |                              |                      | 8.2pF        | ±0.1pF            | V8R2B0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±0.25pF           | V8R2C0105HQC250NZ* |
|            |                            |                      |                              |                      | 9pF          | ±0.1pF            | V9R0B0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±0.25pF           | V9R0C0105HQC250NZ* |
|            |                            |                      |                              |                      | 10pF         | ±2%               | V100G0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±5%               | V100J0105HQC250NZ* |
|            |                            |                      |                              |                      | 12pF         | ±2%               | V120G0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±5%               | V120J0105HQC250NZ* |
|            |                            |                      |                              |                      | 15pF         | ±2%               | V150G0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±5%               | V150J0105HQC250NZ* |
|            |                            |                      |                              |                      | 18pF         | ±2%               | V180G0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±5%               | V180J0105HQC250NZ* |
|            |                            |                      |                              |                      | 20pF         | ±2%               | V200G0105HQC250NZ* |
|            |                            |                      |                              |                      |              | ±5%               | V200J0105HQC250NZ* |
| 22pF       | ±2%                        | V220G0105HQC250NZ*   |                              |                      |              |                   |                    |
|            | ±5%                        | V220J0105HQC250NZ*   |                              |                      |              |                   |                    |
| 24pF       | ±2%                        | V240G0105HQC250NZ*   |                              |                      |              |                   |                    |
|            | ±5%                        | V240J0105HQC250NZ*   |                              |                      |              |                   |                    |
| 27pF       | ±2%                        | V270G0105HQC250NZ*   |                              |                      |              |                   |                    |
|            | ±5%                        | V270J0105HQC250NZ*   |                              |                      |              |                   |                    |
| 33pF       | ±2%                        | V330G0105HQC250NZ*   |                              |                      |              |                   |                    |
|            | ±5%                        | V330J0105HQC250NZ*   |                              |                      |              |                   |                    |
| 0201       | HQC                        | COG                  | 50                           | 0.33 (max)           | 0.1pF        | ±0.05pF           | V0R1A0201HQC500NA* |
|            |                            |                      |                              |                      |              | ±0.1pF            | V0R1B0201HQC500NA* |
|            |                            |                      |                              |                      | 0.2pF        | ±0.05pF           | V0R2A0201HQC500NA* |
|            |                            |                      |                              |                      |              | ±0.1pF            | V0R2B0201HQC500NA* |
|            |                            |                      |                              |                      | 0.3pF        | ±0.05pF           | V0R3A0201HQC500NA* |
|            |                            |                      |                              |                      |              | ±0.1pF            | V0R3B0201HQC500NA* |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness (mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|----------------------|--------------|-------------------|--------------------|
| 0201       | HQC                        | COG                 | 50                           | 0.33 (max)           | 0.4pF        | ±0.05pF           | V0R4A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V0R4B0201HQC500NA* |
|            |                            |                     |                              |                      | 0.5pF        | ±0.05pF           | V0R5A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V0R5B0201HQC500NA* |
|            |                            |                     |                              |                      | 0.6pF        | ±0.05pF           | V0R6A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V0R6B0201HQC500NA* |
|            |                            |                     |                              |                      | 0.7pF        | ±0.05pF           | V0R7A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V0R7B0201HQC500NA* |
|            |                            |                     |                              |                      | 0.75pF       | ±0.05pF           | VR75A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | VR75B0201HQC500NA* |
|            |                            |                     |                              |                      | 0.8pF        | ±0.05pF           | V0R8A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V0R8B0201HQC500NA* |
|            |                            |                     |                              |                      | 0.9pF        | ±0.05pF           | V0R9A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V0R9B0201HQC500NA* |
|            |                            |                     |                              |                      | 1pF          | ±0.05pF           | V1R0A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V1R0B0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R0C0201HQC500NA* |
|            |                            |                     |                              |                      | 1.2pF        | ±0.05pF           | V1R2A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V1R2B0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R2C0201HQC500NA* |
|            |                            |                     |                              |                      | 1.3pF        | ±0.05pF           | V1R3A0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.1pF            | V1R3B0201HQC500NA* |
|            |                            |                     |                              |                      |              | ±0.25pF           | V1R3C0201HQC500NA* |
|            |                            |                     |                              |                      | 1.5pF        | ±0.05pF           | V1R5A0201HQC500NA* |
| ±0.1pF     | V1R5B0201HQC500NA*         |                     |                              |                      |              |                   |                    |
| ±0.25pF    | V1R5C0201HQC500NA*         |                     |                              |                      |              |                   |                    |
| 1.8pF      | ±0.05pF                    | V1R8A0201HQC500NA*  |                              |                      |              |                   |                    |
|            | ±0.1pF                     | V1R8B0201HQC500NA*  |                              |                      |              |                   |                    |
|            | ±0.25pF                    | V1R8C0201HQC500NA*  |                              |                      |              |                   |                    |
| 2pF        | ±0.05pF                    | V2R0A0201HQC500NA*  |                              |                      |              |                   |                    |
|            | ±0.1pF                     | V2R0B0201HQC500NA*  |                              |                      |              |                   |                    |
|            | ±0.25pF                    | V2R0C0201HQC500NA*  |                              |                      |              |                   |                    |
| 2.2pF      | ±0.05pF                    | V2R2A0201HQC500NA*  |                              |                      |              |                   |                    |
|            | ±0.1pF                     | V2R2B0201HQC500NA*  |                              |                      |              |                   |                    |
|            | ±0.25pF                    | V2R2C0201HQC500NA*  |                              |                      |              |                   |                    |
| 2.4pF      | ±0.05pF                    | V2R4A0201HQC500NA*  |                              |                      |              |                   |                    |
|            | ±0.1pF                     | V2R4B0201HQC500NA*  |                              |                      |              |                   |                    |
|            | ±0.25pF                    | V2R4C0201HQC500NA*  |                              |                      |              |                   |                    |



规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0201       | HQC                        | COG                 | 50                           | 0.33(max)           | 2.7pF        | ±0.05pF           | V2R7A0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R7B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R7C0201HQC500NA* |
|            |                            |                     |                              |                     | 3pF          | ±0.05pF           | V3R0A0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R0B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R0C0201HQC500NA* |
|            |                            |                     |                              |                     | 3.3pF        | ±0.05pF           | V3R3A0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R3B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R3C0201HQC500NA* |
|            |                            |                     |                              |                     | 3.6pF        | ±0.05pF           | V3R6A0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R6B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R6C0201HQC500NA* |
|            |                            |                     |                              |                     | 3.9pF        | ±0.05pF           | V3R9A0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R9B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R9C0201HQC500NA* |
|            |                            |                     |                              |                     | 4pF          | ±0.05pF           | V4R0A0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R0B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R0C0201HQC500NA* |
|            |                            |                     |                              |                     | 4.3pF        | ±0.05pF           | V4R3A0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R3B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R3C0201HQC500NA* |
|            |                            |                     |                              |                     | 4.7pF        | ±0.05pF           | V4R7A0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R7B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R7C0201HQC500NA* |
|            |                            |                     |                              |                     | 5pF          | ±0.05pF           | V5R0A0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V5R0B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V5R0C0201HQC500NA* |
|            |                            |                     |                              |                     | 5.6pF        | ±0.1pF            | V5R6B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V5R6C0201HQC500NA* |
|            |                            |                     |                              |                     | 6pF          | ±0.1pF            | V6R0B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V6R0C0201HQC500NA* |
|            |                            |                     |                              |                     | 6.2pF        | ±0.1pF            | V6R2B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V6R2C0201HQC500NA* |
|            |                            |                     |                              |                     | 6.8pF        | ±0.1pF            | V6R8B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V6R8C0201HQC500NA* |
|            |                            |                     |                              |                     | 7pF          | ±0.1pF            | V7R0B0201HQC500NA* |
| ±0.25pF    | V7R0C0201HQC500NA*         |                     |                              |                     |              |                   |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0201       | HQC                        | COG                 | 50                           | 0.33(max)           | 7.5pF        | ±0.1pF            | V7R5B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V7R5C0201HQC500NA* |
|            |                            |                     |                              |                     | 8pF          | ±0.1pF            | V8R0B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V8R0C0201HQC500NA* |
|            |                            |                     |                              |                     | 8.2pF        | ±0.1pF            | V8R2B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V8R2C0201HQC500NA* |
|            |                            |                     |                              |                     | 9pF          | ±0.1pF            | V9R0B0201HQC500NA* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V9R0C0201HQC500NA* |
|            |                            |                     |                              |                     | 10pF         | ±2%               | V10G0201HQC500NA*  |
|            |                            |                     |                              |                     |              | ±5%               | V10J0201HQC500NA*  |
|            |                            |                     |                              |                     | 12pF         | ±2%               | V12G0201HQC500NA*  |
|            |                            |                     |                              |                     |              | ±5%               | V12J0201HQC500NA*  |
|            |                            |                     |                              |                     | 15pF         | ±2%               | V15G0201HQC500NA*  |
|            |                            |                     |                              |                     |              | ±5%               | V15J0201HQC500NA*  |
|            |                            |                     |                              |                     | 18pF         | ±2%               | V18G0201HQC500NA*  |
|            |                            |                     |                              |                     |              | ±5%               | V18J0201HQC500NA*  |
|            |                            |                     |                              |                     | 20pF         | ±2%               | V20G0201HQC500NA*  |
|            |                            |                     |                              |                     |              | ±5%               | V20J0201HQC500NA*  |
| 22pF       | ±2%                        | V22G0201HQC500NA*   |                              |                     |              |                   |                    |
|            | ±5%                        | V22J0201HQC500NA*   |                              |                     |              |                   |                    |
| 27pF       | ±2%                        | V27G0201HQC500NA*   |                              |                     |              |                   |                    |
|            | ±5%                        | V27J0201HQC500NA*   |                              |                     |              |                   |                    |
| 33pF       | ±2%                        | V33G0201HQC500NA*   |                              |                     |              |                   |                    |
|            | ±5%                        | V33J0201HQC500NA*   |                              |                     |              |                   |                    |
| 0402       | HQC                        | COG                 | 50                           | 0.55(max)           | 0.1pF        | ±0.05pF           | V0R1A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R1B0402HQC500NB* |
|            |                            |                     |                              |                     | 0.2pF        | ±0.05pF           | V0R2A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R2B0402HQC500NB* |
|            |                            |                     |                              |                     | 0.3pF        | ±0.05pF           | V0R3A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R3B0402HQC500NB* |
|            |                            |                     |                              |                     | 0.4pF        | ±0.05pF           | V0R4A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R4B0402HQC500NB* |
|            |                            |                     |                              |                     | 0.5pF        | ±0.05pF           | V0R5A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R5B0402HQC500NB* |
|            |                            |                     |                              |                     | 0.6pF        | ±0.05pF           | V0R6A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R6B0402HQC500NB* |
| 0.7pF      | ±0.05pF                    | V0R7A0402HQC500NB*  |                              |                     |              |                   |                    |
|            | ±0.1pF                     | V0R7B0402HQC500NB*  |                              |                     |              |                   |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0402       | HQC                        | COG                 | 50                           | 0.55 (max)          | 0.75pF       | ±0.05pF           | VR75A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | VR75B0402HQC500NB* |
|            |                            |                     |                              |                     | 0.8pF        | ±0.05pF           | V0R8A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R8B0402HQC500NB* |
|            |                            |                     |                              |                     | 0.9pF        | ±0.05pF           | V0R9A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V0R9B0402HQC500NB* |
|            |                            |                     |                              |                     | 1pF          | ±0.05pF           | V1R0A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R0B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R0C0402HQC500NB* |
|            |                            |                     |                              |                     | 1.2pF        | ±0.05pF           | V1R2A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R2B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R2C0402HQC500NB* |
|            |                            |                     |                              |                     | 1.3pF        | ±0.05pF           | V1R3A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R3B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R3C0402HQC500NB* |
|            |                            |                     |                              |                     | 1.5pF        | ±0.05pF           | V1R5A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R5B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R5C0402HQC500NB* |
|            |                            |                     |                              |                     | 1.8pF        | ±0.05pF           | V1R8A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V1R8B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V1R8C0402HQC500NB* |
|            |                            |                     |                              |                     | 2pF          | ±0.05pF           | V2R0A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R0B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R0C0402HQC500NB* |
|            |                            |                     |                              |                     | 2.2pF        | ±0.05pF           | V2R2A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R2B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R2C0402HQC500NB* |
|            |                            |                     |                              |                     | 2.4pF        | ±0.05pF           | V2R4A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R4B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R4C0402HQC500NB* |
|            |                            |                     |                              |                     | 2.7pF        | ±0.05pF           | V2R7A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V2R7B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V2R7C0402HQC500NB* |
|            |                            |                     |                              |                     | 3pF          | ±0.05pF           | V3R0A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R0B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R0C0402HQC500NB* |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0402       | HQC                        | COG                 | 50                           | 0.55 (max)          | 3.3pF        | ±0.05pF           | V3R3A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R3B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R3C0402HQC500NB* |
|            |                            |                     |                              |                     | 3.6pF        | ±0.05pF           | V3R6A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R6B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R6C0402HQC500NB* |
|            |                            |                     |                              |                     | 3.9pF        | ±0.05pF           | V3R9A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V3R9B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V3R9C0402HQC500NB* |
|            |                            |                     |                              |                     | 4pF          | ±0.05pF           | V4R0A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R0B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R0C0402HQC500NB* |
|            |                            |                     |                              |                     | 4.3pF        | ±0.05pF           | V4R3A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R3B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R3C0402HQC500NB* |
|            |                            |                     |                              |                     | 4.7pF        | ±0.05pF           | V4R7A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V4R7B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V4R7C0402HQC500NB* |
|            |                            |                     |                              |                     | 5pF          | ±0.05pF           | V5R0A0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.1pF            | V5R0B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V5R0C0402HQC500NB* |
|            |                            |                     |                              |                     | 5.6pF        | ±0.1pF            | V5R6B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V5R6C0402HQC500NB* |
|            |                            |                     |                              |                     | 6pF          | ±0.1pF            | V6R0B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V6R0C0402HQC500NB* |
|            |                            |                     |                              |                     | 6.2pF        | ±0.1pF            | V6R2B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V6R2C0402HQC500NB* |
|            |                            |                     |                              |                     | 6.8pF        | ±0.1pF            | V6R8B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V6R8C0402HQC500NB* |
|            |                            |                     |                              |                     | 7pF          | ±0.1pF            | V7R0B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V7R0C0402HQC500NB* |
|            |                            |                     |                              |                     | 7.5pF        | ±0.1pF            | V7R5B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V7R5C0402HQC500NB* |
|            |                            |                     |                              |                     | 8pF          | ±0.1pF            | V8R0B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V8R0C0402HQC500NB* |
|            |                            |                     |                              |                     | 8.2pF        | ±0.1pF            | V8R2B0402HQC500NB* |
| ±0.25pF    | V8R2C0402HQC500NB*         |                     |                              |                     |              |                   |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0402       | HQC                        | COG                 | 50                           | 0.55 (max)          | 9pF          | ±0.1pF            | V9R0B0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±0.25pF           | V9R0C0402HQC500NB* |
|            |                            |                     |                              |                     | 10pF         | ±2%               | V100G0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V100J0402HQC500NB* |
|            |                            |                     |                              |                     | 12pF         | ±2%               | V120G0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V120J0402HQC500NB* |
|            |                            |                     |                              |                     | 15pF         | ±2%               | V150G0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V150J0402HQC500NB* |
|            |                            |                     |                              |                     | 18pF         | ±2%               | V180G0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V180J0402HQC500NB* |
|            |                            |                     |                              |                     | 20pF         | ±2%               | V200G0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V200J0402HQC500NB* |
|            |                            |                     |                              |                     | 22pF         | ±2%               | V220G0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V220J0402HQC500NB* |
|            |                            |                     |                              |                     | 27pF         | ±2%               | V270G0402HQC500NB* |
|            |                            |                     |                              |                     |              | ±5%               | V270J0402HQC500NB* |
| 33pF       | ±2%                        | V330G0402HQC500NB*  |                              |                     |              |                   |                    |
|            | ±5%                        | V330J0402HQC500NB*  |                              |                     |              |                   |                    |

高介电常数型片式多层陶瓷电容器系列 X5R *High Dielectric MLCC (X5R)*

| 温度特性<br>T.C. Code | 微容系列代码<br>VIIYONG Type Code | 尺寸范围(EIA)<br>Size | 额定电压范围<br>Rated Voltage | 静电容量范围<br>Capacitance |
|-------------------|-----------------------------|-------------------|-------------------------|-----------------------|
| X5R               | X5R                         | 01005~1206        | 4~50Vdc                 | 1.5nF~100μF           |

X5R特点 *Characteristics*

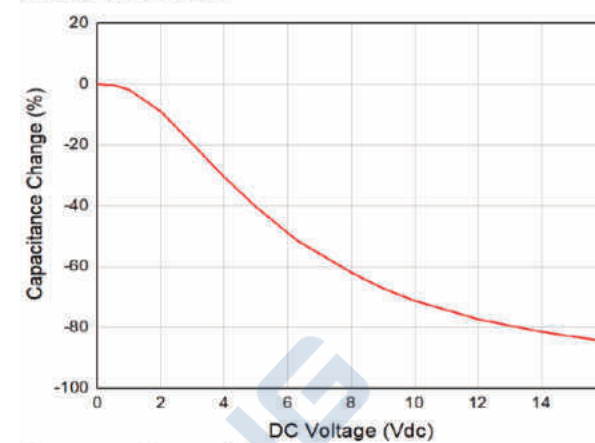
高容值与高可靠性并存  
High capacitance and high reliability coexist

X5R应用领域 *Application Field*

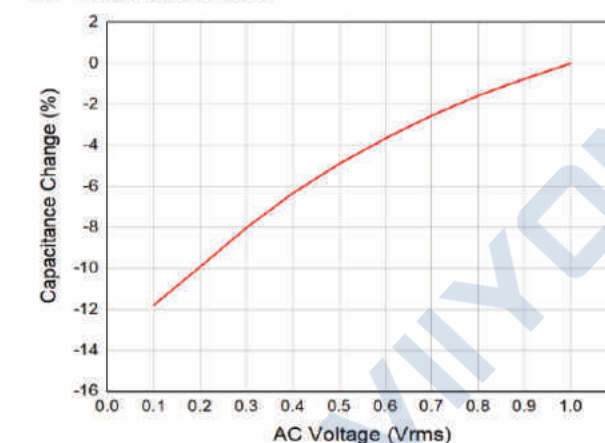
笔记本电脑、电源模块、LCD TV、数码相机、移动通信产品等  
Laptops, power modules, LCD TVs, digital cameras, mobile communication products, etc.

X5R高频特性 *High Frequency Characteristics*

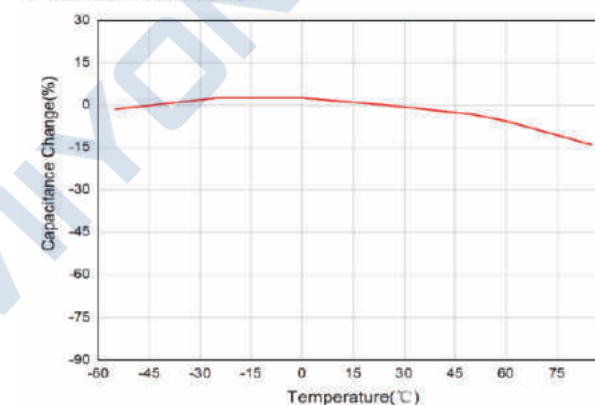
DC Bias Characteristics



AC Voltage Characteristics



Temperature Characteristic



注:上图为X5R, 100nF的部分特性。

The figure above shows partial characteristics of X5R, 100nF.



规格型号及品名 Product Range and Part Number

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap.       | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|-------------------------------|---------------------|------------------------------|---------------------|--------------------|-------------------|--------------------|
| 01005      | X5R                           | X5R                 | 16                           | 0.22(max)           | 1.5nF              | ±10%              | V152K0105X5R160NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V152M0105X5R160NZ* |
|            |                               |                     |                              |                     | 1.8nF              | ±10%              | V182K0105X5R160NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V182M0105X5R160NZ* |
|            |                               |                     |                              |                     | 2.2nF              | ±10%              | V222K0105X5R160NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V222M0105X5R160NZ* |
|            |                               |                     |                              |                     | 2.7nF              | ±10%              | V272K0105X5R160NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V272M0105X5R160NZ* |
|            |                               |                     |                              |                     | 3.3nF              | ±10%              | V332K0105X5R160NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V332M0105X5R160NZ* |
|            |                               |                     |                              |                     | 4.7nF              | ±10%              | V472K0105X5R160NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V472M0105X5R160NZ* |
|            |                               |                     |                              |                     | 5.6nF              | ±10%              | V562K0105X5R160NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V562M0105X5R160NZ* |
|            |                               |                     |                              |                     | 6.8nF              | ±10%              | V682K0105X5R160NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V682M0105X5R160NZ* |
|            |                               |                     |                              |                     | 10nF               | ±10%              | V103K0105X5R160NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V103M0105X5R160NZ* |
|            |                               |                     | 12nF                         | ±10%                | V123K0105X5R100NZ* |                   |                    |
|            |                               |                     |                              | ±20%                | V123M0105X5R100NZ* |                   |                    |
|            |                               |                     | 15nF                         | ±10%                | V153K0105X5R100NZ* |                   |                    |
|            |                               |                     |                              | ±20%                | V153M0105X5R100NZ* |                   |                    |
|            |                               |                     | 18nF                         | ±10%                | V183K0105X5R100NZ* |                   |                    |
|            |                               |                     |                              | ±20%                | V183M0105X5R100NZ* |                   |                    |
|            |                               |                     | 22nF                         | ±10%                | V223K0105X5R100NZ* |                   |                    |
|            |                               |                     |                              | ±20%                | V223M0105X5R100NZ* |                   |                    |
|            |                               |                     | 27nF                         | ±10%                | V273K0105X5R100NZ* |                   |                    |
|            |                               |                     |                              | ±20%                | V273M0105X5R100NZ* |                   |                    |
|            |                               |                     | 33nF                         | ±10%                | V333K0105X5R100NZ* |                   |                    |
|            |                               |                     |                              | ±20%                | V333M0105X5R100NZ* |                   |                    |
|            |                               |                     | 47nF                         | ±10%                | V473K0105X5R100NZ* |                   |                    |
|            |                               |                     |                              | ±20%                | V473M0105X5R100NZ* |                   |                    |
|            |                               |                     | 6.3                          | 0.22(max)           | 27nF               | ±10%              | V273K0105X5R6R3NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V273M0105X5R6R3NZ* |
|            |                               |                     |                              |                     | 33nF               | ±10%              | V333K0105X5R6R3NZ* |
|            |                               |                     |                              |                     |                    | ±20%              | V333M0105X5R6R3NZ* |
| 47nF       | ±10%                          | V473K0105X5R6R3NZ*  |                              |                     |                    |                   |                    |
|            | ±20%                          | V473M0105X5R6R3NZ*  |                              |                     |                    |                   |                    |

规格型号及品名 Product Range and Part Number

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap.       | 允许偏差<br>Tolerance  | 品名<br>Part Number  |
|------------|-------------------------------|---------------------|------------------------------|---------------------|--------------------|--------------------|--------------------|
| 01005      | X5R                           | X5R                 | 6.3                          | 0.22(max)           | 56nF               | ±10%               | V563K0105X5R6R3NZ* |
|            |                               |                     |                              |                     |                    | ±20%               | V563M0105X5R6R3NZ* |
|            |                               |                     |                              |                     | 68nF               | ±10%               | V683K0105X5R6R3NZ* |
|            |                               |                     |                              |                     |                    | ±20%               | V683M0105X5R6R3NZ* |
|            |                               |                     |                              |                     | 82nF               | ±10%               | V823K0105X5R6R3NZ* |
|            |                               |                     |                              |                     |                    | ±20%               | V823M0105X5R6R3NZ* |
|            |                               |                     | 100nF                        | ±10%                | V104K0105X5R6R3NZ* |                    |                    |
|            |                               |                     |                              | ±20%                | V104M0105X5R6R3NZ* |                    |                    |
|            |                               |                     | 4                            | 0.22(max)           | 100nF              | ±10%               | V104K0105X5R4R0NZ* |
|            |                               |                     |                              |                     |                    | ±20%               | V104M0105X5R4R0NZ* |
|            |                               |                     |                              |                     | 220nF              | ±10%               | V224K0105X5R4R0NZ* |
|            |                               |                     |                              |                     |                    | ±20%               | V224M0105X5R4R0NZ* |
| 100nF      | ±10%                          | V104K0201X5R350NX*  |                              |                     |                    |                    |                    |
|            | ±20%                          | V104M0201X5R350NX*  |                              |                     |                    |                    |                    |
| 0201       | X5R                           | X5R                 | 25                           | 0.33(max)           | 1.5nF              | ±10%               | V152K0201X5R250NA* |
|            |                               |                     |                              |                     |                    | ±20%               | V152M0201X5R250NA* |
|            |                               |                     |                              |                     | 1.8nF              | ±10%               | V182K0201X5R250NA* |
|            |                               |                     |                              |                     |                    | ±20%               | V182M0201X5R250NA* |
|            |                               |                     |                              |                     | 2.2nF              | ±10%               | V222K0201X5R250NA* |
|            |                               |                     |                              |                     |                    | ±20%               | V222M0201X5R250NA* |
|            |                               |                     |                              |                     | 3.3nF              | ±10%               | V332K0201X5R250NA* |
|            |                               |                     |                              |                     |                    | ±20%               | V332M0201X5R250NA* |
|            |                               |                     |                              |                     | 3.9nF              | ±10%               | V392K0201X5R250NA* |
|            |                               |                     |                              |                     |                    | ±20%               | V392M0201X5R250NA* |
|            |                               |                     |                              |                     | 4.7nF              | ±10%               | V472K0201X5R250NA* |
|            |                               |                     |                              |                     |                    | ±20%               | V472M0201X5R250NA* |
|            |                               |                     | 5.6nF                        | ±10%                | V562K0201X5R250NA* |                    |                    |
|            |                               |                     |                              | ±20%                | V562M0201X5R250NA* |                    |                    |
|            |                               |                     | 6.8nF                        | ±10%                | V682K0201X5R250NA* |                    |                    |
|            |                               |                     |                              | ±20%                | V682M0201X5R250NA* |                    |                    |
|            |                               |                     | 10nF                         | ±10%                | V103K0201X5R250NA* |                    |                    |
|            |                               |                     |                              | ±20%                | V103M0201X5R250NA* |                    |                    |
|            |                               |                     | 12nF                         | ±10%                | V123K0201X5R250NA* |                    |                    |
|            |                               |                     |                              | ±20%                | V123M0201X5R250NA* |                    |                    |
|            |                               |                     | 0.35(max)                    | 0.33(max)           | 100nF              | ±10%               | V104K0201X5R250NJ* |
|            |                               |                     |                              |                     |                    | ±20%               | V104M0201X5R250NJ* |
|            |                               |                     |                              |                     | 224nF              | ±10%               | V224K0201X5R250NX* |
|            |                               |                     |                              |                     |                    | ±20%               | V224M0201X5R250NX* |
| 0.4(max)   | 0.35(max)                     | 224nF               |                              |                     | ±10%               | V224K0201X5R250NX* |                    |
|            |                               |                     |                              |                     | ±20%               | V224M0201X5R250NX* |                    |



规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代<br>码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |                    |                    |
|------------|-------------------------------|-------------------------|------------------------------|---------------------|--------------|-------------------|--------------------|--------------------|--------------------|
| 0201       | X5R                           | X5R                     | 16                           | 0.33(max)           | 15nF         | ±10%              | V153K0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V153M0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     | 18nF         | ±10%              | V183K0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V183M0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     | 22nF         | ±10%              | V223K0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V223M0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     | 27nF         | ±10%              | V273K0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V273M0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     | 33nF         | ±10%              | V333K0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V333M0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     | 47nF         | ±10%              | V473K0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V473M0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     | 56nF         | ±10%              | V563K0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V563M0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     | 100nF        | ±10%              | V104K0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V104M0201X5R160NA* |                    |                    |
|            |                               |                         |                              |                     |              | 0.35(max)         | 224nF              | ±10%               | V224K0201X5R160NJ* |
|            |                               |                         |                              |                     |              |                   |                    | ±20%               | V224M0201X5R160NJ* |
|            |                               |                         |                              | 10                  | 0.33(max)    | 68nF              | ±10%               | V683K0201X5R100NA* |                    |
|            |                               |                         |                              |                     |              |                   | ±20%               | V683M0201X5R100NA* |                    |
|            |                               |                         |                              |                     |              | 82nF              | ±10%               | V823K0201X5R100NA* |                    |
|            |                               |                         |                              |                     |              |                   | ±20%               | V823M0201X5R100NA* |                    |
|            |                               |                         |                              |                     |              | 100nF             | ±10%               | V104K0201X5R100NA* |                    |
|            |                               |                         |                              |                     |              |                   | ±20%               | V104M0201X5R100NA* |                    |
|            |                               |                         |                              |                     | 0.35(max)    | 224nF             | ±10%               | V224K0201X5R100NJ* |                    |
|            |                               |                         |                              |                     |              |                   | ±20%               | V224M0201X5R100NJ* |                    |
|            |                               |                         |                              | 0.4(max)            | 474nF        | ±10%              | V474K0201X5R100NX* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V474M0201X5R100NX* |                    |                    |
|            |                               |                         |                              |                     | 1 μF         | ±20%              | V105M0201X5R100NX* |                    |                    |
|            |                               |                         |                              | 6.3                 | 0.33(max)    | 100nF             | ±10%               | V104K0201X5R6R3NA* |                    |
|            |                               |                         |                              |                     |              |                   | ±20%               | V104M0201X5R6R3NA* |                    |
|            |                               |                         |                              |                     |              | 224nF             | ±10%               | V224K0201X5R6R3NJ* |                    |
|            |                               |                         |                              |                     |              | ±20%              | V224M0201X5R6R3NJ* |                    |                    |
|            |                               |                         |                              |                     | 474nF        | ±10%              | V474K0201X5R6R3NJ* |                    |                    |
|            |                               |                         |                              |                     |              | ±20%              | V474M0201X5R6R3NJ* |                    |                    |
|            |                               |                         |                              | 0.4(max)            | 1 μF         | ±10%              | V105K0201X5R6R3NX* |                    |                    |
|            |                               | ±20%                    | V105M0201X5R6R3NX*           |                     |              |                   |                    |                    |                    |
|            | 2.2 μF                        | ±20%                    | V225M0201X5R6R3NX*           |                     |              |                   |                    |                    |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代<br>码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |                    |
|------------|-------------------------------|-------------------------|------------------------------|---------------------|--------------|-------------------|--------------------|--------------------|
| 0402       | X5R                           | X5R                     | 50                           | 0.55(max)           | 12nF         | ±10%              | V123K0402X5R500NB* |                    |
|            |                               |                         |                              |                     |              | ±20%              | V123M0402X5R500NB* |                    |
|            |                               |                         |                              |                     | 15nF         | ±10%              | V153K0402X5R500NB* |                    |
|            |                               |                         |                              |                     |              | ±20%              | V153M0402X5R500NB* |                    |
|            |                               |                         |                              |                     | 18nF         | ±10%              | V183K0402X5R500NB* |                    |
|            |                               |                         |                              |                     |              | ±20%              | V183M0402X5R500NB* |                    |
|            |                               |                         |                              |                     | 0.6(max)     | 22nF              | ±10%               | V223K0402X5R500NB* |
|            |                               |                         |                              |                     |              |                   | ±20%               | V223M0402X5R500NB* |
|            |                               |                         |                              | 27nF                |              | ±10%              | V273K0402X5R500NB* |                    |
|            |                               |                         |                              |                     |              | ±20%              | V273M0402X5R500NB* |                    |
|            |                               |                         |                              | 47nF                |              | ±10%              | V473K0402X5R500NB* |                    |
|            |                               |                         |                              |                     |              | ±20%              | V473M0402X5R500NB* |                    |
|            |                               |                         |                              | 0.70(max)           | 100nF        | ±10%              | V104K0402X5R500NC* |                    |
|            |                               |                         |                              |                     |              | ±20%              | V104M0402X5R500NC* |                    |
|            |                               |                         | 35                           |                     | 0.55(max)    | 100nF             | ±10%               | V104K0402X5R350NB* |
|            |                               |                         |                              |                     |              |                   | ±20%               | V104M0402X5R350NB* |
|            |                               |                         |                              |                     |              | 1 μF              | ±10%               | V105K0402X5R350NC* |
|            |                               |                         |                              |                     |              | ±20%              | V105M0402X5R350NC* |                    |
|            |                               |                         |                              | 25                  | 0.55(max)    | 22nF              | ±10%               | V223K0402X5R250NB* |
|            |                               |                         |                              |                     |              |                   | ±20%               | V223M0402X5R250NB* |
|            |                               |                         | 27nF                         |                     |              | ±10%              | V273K0402X5R250NB* |                    |
|            |                               |                         |                              |                     |              | ±20%              | V273M0402X5R250NB* |                    |
|            |                               |                         | 33nF                         |                     |              | ±10%              | V333K0402X5R250NB* |                    |
|            |                               |                         |                              |                     |              | ±20%              | V333M0402X5R250NB* |                    |
|            | 0.6(max)                      | 47nF                    | ±10%                         | V473K0402X5R250NB*  |              |                   |                    |                    |
|            |                               |                         | ±20%                         | V473M0402X5R250NB*  |              |                   |                    |                    |
| 56nF       |                               | ±10%                    | V563K0402X5R250NB*           |                     |              |                   |                    |                    |
|            |                               | ±20%                    | V563M0402X5R250NB*           |                     |              |                   |                    |                    |
| 68nF       |                               | ±10%                    | V683K0402X5R250NB*           |                     |              |                   |                    |                    |
|            |                               | ±20%                    | V683M0402X5R250NB*           |                     |              |                   |                    |                    |
|            | 0.6(max)                      | 82nF                    | ±10%                         | V823K0402X5R250NB*  |              |                   |                    |                    |
|            |                               |                         | ±20%                         | V823M0402X5R250NB*  |              |                   |                    |                    |
| 100nF      |                               | ±10%                    | V104K0402X5R250NB*           |                     |              |                   |                    |                    |
|            |                               | ±20%                    | V104M0402X5R250NB*           |                     |              |                   |                    |                    |
| 220nF      |                               | ±10%                    | V224K0402X5R250NB*           |                     |              |                   |                    |                    |
|            |                               | ±20%                    | V224M0402X5R250NB*           |                     |              |                   |                    |                    |
|            |                               | 470nF                   | ±10%                         | V474K0402X5R250NB*  |              |                   |                    |                    |
|            |                               |                         | ±20%                         | V474M0402X5R250NB*  |              |                   |                    |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance  | 品名<br>Part Number  |                    |                    |
|------------|-------------------------------|---------------------|------------------------------|---------------------|--------------|--------------------|--------------------|--------------------|--------------------|
| 0402       | X5R                           | X5R                 | 25                           | 0.55(max)           | 68nF         | ±10%               | V683K0402X5R250NB* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V683M0402X5R250NB* |                    |                    |
|            |                               |                     |                              |                     | 82nF         | ±10%               | V823K0402X5R250NB* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V823M0402X5R250NB* |                    |                    |
|            |                               |                     |                              |                     | 100nF        | ±10%               | V104K0402X5R250NB* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V104M0402X5R250NB* |                    |                    |
|            |                               |                     |                              | 0.6(max)            | 220nF        | ±10%               | V224K0402X5R250NN* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V224M0402X5R250NN* |                    |                    |
|            |                               |                     |                              |                     | 470nF        | ±10%               | V474K0402X5R250NN* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V474M0402X5R250NN* |                    |                    |
|            |                               |                     |                              |                     | 1μF          | ±10%               | V105K0402X5R250NB* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V105M0402X5R250NB* |                    |                    |
|            |                               |                     |                              | 0.55(max)           | 2.2μF        | ±10%               | V225K0402X5R250NC* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V225M0402X5R250NC* |                    |                    |
|            |                               |                     |                              |                     | 0.70(max)    | 100nF              | ±10%               | V104K0402X5R160NB* |                    |
|            |                               |                     |                              |                     |              |                    | ±20%               | V104M0402X5R160NB* |                    |
|            |                               |                     |                              |                     |              | 0.6(max)           | 220nF              | ±10%               | V224K0402X5R160NN* |
|            |                               |                     |                              |                     |              |                    |                    | ±20%               | V224M0402X5R160NN* |
|            |                               |                     | 470nF                        | ±10%                |              | V474K0402X5R160NN* |                    |                    |                    |
|            |                               |                     |                              | ±20%                |              | V474M0402X5R160NN* |                    |                    |                    |
|            |                               |                     | 0.55(max)                    | 1μF                 | ±10%         | V105K0402X5R160NB* |                    |                    |                    |
|            |                               |                     |                              |                     | ±20%         | V105M0402X5R160NB* |                    |                    |                    |
|            |                               |                     |                              | 0.6(max)            | 2.2μF        | ±10%               | V225K0402X5R160NN* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V225M0402X5R160NN* |                    |                    |
|            |                               |                     |                              |                     | 0.70(max)    | 4.7μF              | ±10%               | V475K0402X5R160NC* |                    |
|            |                               |                     |                              |                     |              |                    | ±20%               | V475M0402X5R160NC* |                    |
|            |                               |                     | 0.55(max)                    |                     |              | 1μF                | ±10%               | V105K0402X5R100NB* |                    |
|            |                               |                     |                              |                     |              |                    | ±20%               | V105M0402X5R100NB* |                    |
|            |                               |                     |                              | 2.2μF               |              | ±10%               | V225K0402X5R100NB* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V225M0402X5R100NB* |                    |                    |
|            |                               |                     |                              | 0.70(max)           | 4.7μF        | ±10%               | V475K0402X5R100NC* |                    |                    |
|            |                               |                     |                              |                     |              | ±20%               | V475M0402X5R100NC* |                    |                    |
|            |                               |                     | 10μF                         |                     | ±10%         | V106K0402X5R100NC* |                    |                    |                    |
|            |                               |                     |                              |                     | ±20%         | V106M0402X5R100NC* |                    |                    |                    |
|            |                               |                     | 6.3                          |                     | 0.55(max)    | 1μF                | ±10%               | V105K0402X5R6R3NB* |                    |
|            |                               |                     |                              |                     |              |                    | ±20%               | V105M0402X5R6R3NB* |                    |
| 2.2μF      | ±10%                          | V225K0402X5R6R3NB*  |                              |                     |              |                    |                    |                    |                    |
|            | ±20%                          | V225M0402X5R6R3NB*  |                              |                     |              |                    |                    |                    |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap.       | 允许偏差<br>Tolerance  | 品名<br>Part Number  |
|------------|-------------------------------|---------------------|------------------------------|---------------------|--------------------|--------------------|--------------------|
| 0402       | X5R                           | X5R                 | 6.3                          | 0.70(max)           | 4.7μF              | ±10%               | V475K0402X5R6R3NC* |
|            |                               |                     |                              |                     |                    | ±20%               | V475M0402X5R6R3NC* |
|            |                               |                     |                              |                     | 10μF               | ±10%               | V106K0402X5R6R3NC* |
|            |                               |                     |                              |                     |                    | ±20%               | V106M0402X5R6R3NC* |
|            |                               |                     |                              |                     | 22μF               | ±10%               | V106K0402X5R4R0NC* |
|            |                               |                     |                              |                     |                    | ±20%               | V106M0402X5R4R0NC* |
|            |                               |                     | 50                           | 0.9(max)            | 1.0μF              | ±10%               | V105K0603X5R500ND* |
|            |                               |                     |                              |                     |                    | ±20%               | V105M0603X5R500ND* |
|            |                               |                     |                              |                     | 2.2μF              | ±10%               | V225K0603X5R500NK* |
|            |                               |                     |                              |                     | ±20%               | V225M0603X5R500NK* |                    |
|            |                               |                     |                              | 1.0(max)            | 1.0μF              | ±10%               | V105K0603X5R350ND* |
|            |                               |                     |                              |                     | ±20%               | V105M0603X5R350ND* |                    |
| 35         | 0.9(max)                      | 2.2μF               | ±10%                         | V225K0603X5R350NK*  |                    |                    |                    |
|            |                               |                     | ±20%                         | V225M0603X5R350NK*  |                    |                    |                    |
|            |                               | 4.7μF               | ±10%                         | V475K0603X5R350NK*  |                    |                    |                    |
|            |                               | ±20%                | V475M0603X5R350NK*           |                     |                    |                    |                    |
|            | 1.0(max)                      | 1.0μF               | ±10%                         | V105K0603X5R250ND*  |                    |                    |                    |
|            |                               | ±20%                | V105M0603X5R250ND*           |                     |                    |                    |                    |
| 0603       | X5R                           | X5R                 | 25                           | 0.9(max)            | 1.0μF              | ±10%               | V105K0603X5R250NK* |
|            |                               |                     |                              |                     |                    | ±20%               | V105M0603X5R250NK* |
|            |                               |                     |                              |                     | 2.2μF              | ±10%               | V225K0603X5R250NK* |
|            |                               |                     |                              |                     |                    | ±20%               | V225M0603X5R250NK* |
|            |                               |                     |                              |                     | 4.7μF              | ±10%               | V475K0603X5R250NK* |
|            |                               |                     |                              |                     |                    | ±20%               | V475M0603X5R250NK* |
|            |                               |                     | 16                           | 1.0(max)            | 4.7μF              | ±10%               | V475K0603X5R160ND* |
|            |                               |                     |                              |                     |                    | ±20%               | V475M0603X5R160ND* |
|            |                               |                     |                              |                     | 10μF               | ±10%               | V106K0603X5R160NK* |
|            |                               |                     |                              |                     | ±20%               | V106M0603X5R160NK* |                    |
|            |                               |                     |                              | 0.9(max)            | 2.2μF              | ±10%               | V225K0603X5R160ND* |
|            |                               |                     |                              |                     | ±20%               | V225M0603X5R160ND* |                    |
| 10         | 1.0(max)                      | 4.7μF               | ±10%                         | V475K0603X5R100NK*  |                    |                    |                    |
|            |                               |                     | ±20%                         | V475M0603X5R100NK*  |                    |                    |                    |
|            |                               | 10μF                | ±10%                         | V106K0603X5R100NK*  |                    |                    |                    |
|            |                               | ±20%                | V106M0603X5R100NK*           |                     |                    |                    |                    |
|            | 0.9(max)                      | 4.7μF               | ±10%                         | V475K0603X5R100ND*  |                    |                    |                    |
|            |                               | ±20%                | V475M0603X5R100ND*           |                     |                    |                    |                    |
| 6.3        | 0.9(max)                      | 1.05(max)           | 22μF                         | ±10%                | V226K0603X5R100N4* |                    |                    |
|            |                               |                     | ±20%                         | V226M0603X5R100N4*  |                    |                    |                    |
|            |                               | 4.7μF               | ±10%                         | V475K0603X5R6R3ND*  |                    |                    |                    |
|            |                               |                     | ±20%                         | V475M0603X5R6R3ND*  |                    |                    |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap.       | 允许偏差<br>Tolerance | 品名<br>Part Number  |        |      |                    |
|------------|-------------------------------|---------------------|------------------------------|---------------------|--------------------|-------------------|--------------------|--------|------|--------------------|
| 0603       | X5R                           | X5R                 | 6.3                          | 1.0(max)            | 10 μF              | ±10%              | V106K0603X5R6R3NK* |        |      |                    |
|            |                               |                     |                              |                     |                    | ±20%              | V106M0603X5R6R3NK* |        |      |                    |
|            |                               |                     |                              |                     | 22 μF              | ±10%              | V226K0603X5R6R3NK* |        |      |                    |
|            |                               |                     |                              |                     |                    | ±20%              | V226M0603X5R6R3NK* |        |      |                    |
|            |                               |                     |                              |                     | 10 μF              | ±10%              | V106K0603X5R4R0NK* |        |      |                    |
|            |                               |                     |                              |                     |                    | ±20%              | V106M0603X5R4R0NK* |        |      |                    |
|            |                               |                     | 22 μF                        | ±10%                | V226K0603X5R4R0NK* |                   |                    |        |      |                    |
|            |                               |                     |                              | ±20%                | V226M0603X5R4R0NK* |                   |                    |        |      |                    |
|            |                               |                     | 4                            | 1.0(max)            | X5R                | 6.3               | 1.0(max)           | 47 μF  | ±10% | V476K0603X5R4R0NK* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V476M0603X5R4R0NK* |
|            |                               |                     |                              |                     |                    |                   |                    | 10 μF  | ±10% | V106K0603X5R4R0NK* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V106M0603X5R4R0NK* |
| 22 μF      | ±10%                          | V226K0603X5R4R0NK*  |                              |                     |                    |                   |                    |        |      |                    |
|            | ±20%                          | V226M0603X5R4R0NK*  |                              |                     |                    |                   |                    |        |      |                    |
| 0805       | X5R                           | X5R                 | 50                           | 1.45(max)           | 4.7 μF             | ±20%              | V475M0805X5R500NH* |        |      |                    |
|            |                               |                     |                              |                     |                    | ±20%              | V475M0805X5R250NY* |        |      |                    |
|            |                               |                     |                              |                     |                    |                   | V475M0805X5R250NH* |        |      |                    |
|            |                               |                     | 25                           | 1.0(max)            | X5R                | 25                | 1.45(max)          | 4.7 μF | ±20% | V106M0805X5R250NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V106M0805X5R250NH* |
|            |                               |                     |                              |                     |                    |                   |                    | 10 μF  | ±20% | V226M0805X5R250NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V226M0805X5R250NH* |
|            |                               |                     |                              |                     |                    |                   |                    | 22 μF  | ±20% | V475M0805X5R160NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V475M0805X5R160NH* |
|            |                               |                     | 16                           | 1.0(max)            | X5R                | 16                | 1.45(max)          | 4.7 μF | ±20% | V106M0805X5R160NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V106M0805X5R160NH* |
|            |                               |                     |                              |                     |                    |                   |                    | 10 μF  | ±20% | V226M0805X5R160NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V226M0805X5R160NH* |
|            |                               |                     |                              |                     |                    |                   |                    | 22 μF  | ±20% | V476M0805X5R100NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V476M0805X5R100NH* |
|            |                               |                     | 10                           | 1.0(max)            | X5R                | 10                | 1.45(max)          | 10 μF  | ±20% | V106M0805X5R100NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V106M0805X5R100NH* |
|            |                               |                     |                              |                     |                    |                   |                    | 22 μF  | ±20% | V226M0805X5R100NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V226M0805X5R100NH* |
|            |                               |                     |                              |                     |                    |                   |                    | 47 μF  | ±20% | V476M0805X5R6R3NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V476M0805X5R6R3NH* |
|            |                               |                     | 6.3                          | 1.0(max)            | X5R                | 6.3               | 1.45(max)          | 22 μF  | ±20% | V106M0805X5R6R3NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V106M0805X5R6R3NH* |
|            |                               |                     |                              |                     |                    |                   |                    | 47 μF  | ±20% | V226M0805X5R6R3NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V226M0805X5R6R3NH* |
|            |                               |                     |                              |                     |                    |                   |                    | 10 μF  | ±20% | V476M0805X5R6R3NY* |
|            |                               |                     |                              |                     |                    |                   |                    |        | ±20% | V476M0805X5R6R3NH* |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |                    |
|------------|-------------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|--------------------|
| 1206       | X5R                           | X5R                 | 50                           | 1.0(max)            | 4.7 μF       | ±20%              | V475M1206X5R500NY* |                    |
|            |                               |                     |                              | 1.8(max)            | 10 μF        | ±20%              | V106M1206X5R500NL* |                    |
|            |                               |                     | 35                           | 1.0(max)            | 2.2 μF       | ±20%              | V225M1206X5R350NY* |                    |
|            |                               |                     |                              |                     | 4.7 μF       | ±20%              | V475M1206X5R350NY* |                    |
|            |                               |                     | 25                           | 1.8(max)            | 4.7 μF       | ±20%              | V475M1206X5R250NL* |                    |
|            |                               |                     |                              |                     | 10 μF        | ±20%              | V106M1206X5R250NL* |                    |
|            |                               |                     |                              |                     | 22 μF        | ±20%              | V226M1206X5R250NL* |                    |
|            |                               |                     | 16                           | 1.0(max)            | 10 μF        | ±20%              | V106M1206X5R160NY* |                    |
|            |                               |                     |                              |                     | 1.8(max)     | ±20%              | V106M1206X5R160NL* |                    |
|            |                               |                     |                              |                     | 1.0(max)     | 22 μF             | ±20%               | V226M1206X5R160NY* |
|            |                               |                     |                              |                     |              |                   | ±20%               | V226M1206X5R160NL* |
|            |                               |                     | 10                           | 1.35(max)           | 22 μF        | ±20%              | V226M1206X5R100NO* |                    |
|            |                               |                     |                              |                     | 1.8(max)     | 47 μF             | ±20%               | V476M1206X5R100NL* |
|            |                               |                     |                              |                     |              | 22 μF             | ±20%               | V226M1206X5R6R3NO* |
|            |                               |                     | 6.3                          | 1.35(max)           | 22 μF        | ±20%              | V226M1206X5R6R3NL* |                    |
|            |                               |                     |                              |                     | 1.35(max)    | 47 μF             | ±20%               | V476M1206X5R6R3NO* |
|            |                               |                     |                              |                     |              |                   | ±20%               | V476M1206X5R6R3NL* |
|            |                               |                     |                              |                     | 1.8(max)     | 100 μF            | ±20%               | V107M1206X5R6R3NL* |



### 高介电常数型片式多层陶瓷电容器系列 X7R High Dielectric MLCC (X7R)

| 温度特性<br>T.C. Code | 微容系列代码<br>VIIYONG Type Code | 尺寸范围(EIA)<br>Size | 额定电压范围<br>Rated Voltage | 静电容量范围<br>Capacitance |
|-------------------|-----------------------------|-------------------|-------------------------|-----------------------|
| X7R               | X7R                         | 01005~0402        | 16~50Vdc                | 100pF~100nF           |

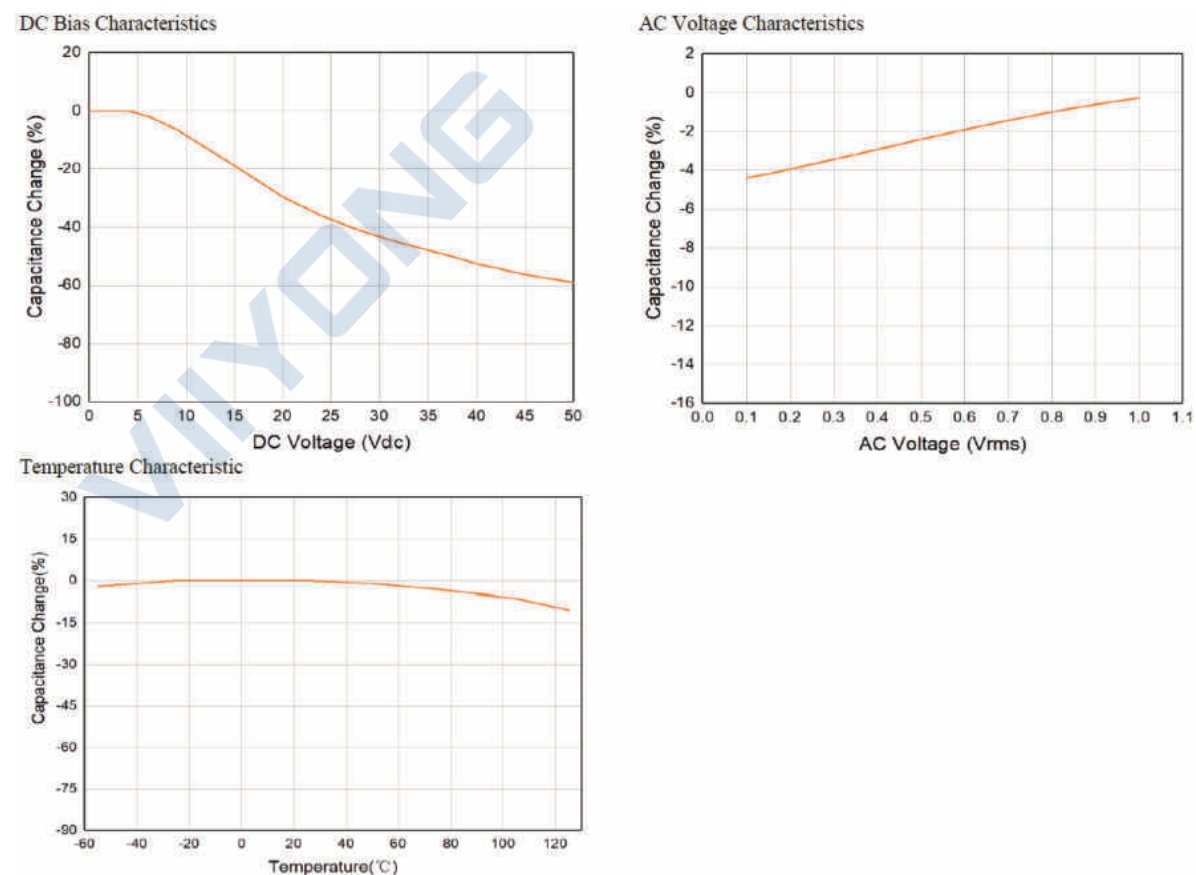
#### X7R特点 Characteristics

工作温度高 High operation temperature  
高可靠性 High reliability

#### X7R应用领域 Application Field

笔记本电脑、电源模块、LCD TV、数码相机、移动通信产品等  
Laptops, power modules, LCD TVs, digital cameras, mobile communication products, etc.

#### X7R特曲线 Characteristics Curve



注:上图为X7R, 1nF的部分特性。

The figure above shows partial characteristics of X7R, 1nF.

### 规格型号及品名 Product Range and Part Number

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>Ur(Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance  | 品名<br>Part Number  |  |           |       |                    |                    |
|------------|----------------------------|---------------------|-----------------|---------------------|--------------|--------------------|--------------------|--|-----------|-------|--------------------|--------------------|
| 01005      | X7R                        | X7R                 | 25              | 0.22(max)           | 100pF        | ± 10%              | V101K0105X7R250NZ* |  |           |       |                    |                    |
|            |                            |                     |                 |                     |              | ± 20%              | V101M0105X7R250NZ* |  |           |       |                    |                    |
|            |                            |                     |                 |                     | 120pF        | ± 10%              | V121K0105X7R250NZ* |  |           |       |                    |                    |
|            |                            |                     |                 |                     |              | ± 20%              | V121M0105X7R250NZ* |  |           |       |                    |                    |
|            |                            |                     |                 |                     | 150pF        | ± 10%              | V151K0105X7R250NZ* |  |           |       |                    |                    |
|            |                            |                     |                 |                     |              | ± 20%              | V151M0105X7R250NZ* |  |           |       |                    |                    |
|            |                            |                     |                 |                     | 180pF        | ± 10%              | V181K0105X7R250NZ* |  |           |       |                    |                    |
|            |                            |                     |                 |                     |              | ± 20%              | V181M0105X7R250NZ* |  |           |       |                    |                    |
|            |                            |                     |                 |                     | 200pF        | ± 10%              | V201K0105X7R250NZ* |  |           |       |                    |                    |
|            |                            |                     |                 |                     | ± 20%        | V201M0105X7R250NZ* |                    |  |           |       |                    |                    |
|            |                            |                     | 220pF           |                     | ± 10%        | V221K0105X7R250NZ* |                    |  |           |       |                    |                    |
|            |                            |                     |                 |                     | ± 20%        | V221M0105X7R250NZ* |                    |  |           |       |                    |                    |
|            |                            |                     | 270pF           |                     | ± 10%        | V271K0105X7R250NZ* |                    |  |           |       |                    |                    |
|            |                            |                     |                 |                     | ± 20%        | V271M0105X7R250NZ* |                    |  |           |       |                    |                    |
|            |                            |                     | 330pF           |                     | ± 10%        | V331K0105X7R250NZ* |                    |  |           |       |                    |                    |
|            |                            |                     |                 |                     | ± 20%        | V331M0105X7R250NZ* |                    |  |           |       |                    |                    |
|            |                            |                     |                 |                     |              |                    | 16                 |  | 470pF     | ± 10% | V471K0105X7R250NZ* |                    |
|            |                            |                     |                 |                     |              |                    |                    |  |           | ± 20% | V471M0105X7R250NZ* |                    |
| 560pF      | ± 10%                      | V561K0105X7R160NZ*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
|            | ± 20%                      | V561M0105X7R160NZ*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
| 680pF      | ± 10%                      | V681K0105X7R160NZ*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
|            | ± 20%                      | V681M0105X7R160NZ*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
| 820pF      | ± 10%                      | V821K0105X7R160NZ*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
|            | ± 20%                      | V821M0105X7R160NZ*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
| 1.0nF      | ± 10%                      | V102K0105X7R160NZ*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
|            | ± 20%                      | V102M0105X7R160NZ*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
| 0201       | X7R                        | X7R                 |                 | 50                  |              |                    |                    |  | 0.33(max) | 150pF | ± 10%              | V151K0201X7R500NA* |
|            |                            |                     |                 |                     |              |                    |                    |  |           |       | ± 20%              | V151M0201X7R500NA* |
|            |                            |                     | 180pF           |                     | ± 10%        | V181K0201X7R500NA* |                    |  |           |       |                    |                    |
|            |                            |                     |                 |                     | ± 20%        | V181M0201X7R500NA* |                    |  |           |       |                    |                    |
|            |                            |                     | 220pF           |                     | ± 10%        | V221K0201X7R500NA* |                    |  |           |       |                    |                    |
|            |                            |                     |                 |                     | ± 20%        | V221M0201X7R500NA* |                    |  |           |       |                    |                    |
| 270pF      | ± 10%                      | V271K0201X7R500NA*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
|            | ± 20%                      | V271M0201X7R500NA*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
| 330pF      | ± 10%                      | V331K0201X7R500NA*  |                 |                     |              |                    |                    |  |           |       |                    |                    |
|            | ± 20%                      | V331M0201X7R500NA*  |                 |                     |              |                    |                    |  |           |       |                    |                    |



规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance  | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|--------------------|--------------------|
| 0201       | X7R                        | X7R                 | 50                           | 0.33(max)           | 470pF        | ± 10%              | V471K0201X7R500NA* |
|            |                            |                     |                              |                     |              | ± 20%              | V471M0201X7R500NA* |
|            |                            |                     |                              |                     | 560pF        | ± 10%              | V561K0201X7R500NA* |
|            |                            |                     |                              |                     |              | ± 20%              | V561M0201X7R500NA* |
|            |                            |                     |                              |                     | 680pF        | ± 10%              | V681K0201X7R500NA* |
|            |                            |                     |                              |                     |              | ± 20%              | V681M0201X7R500NA* |
|            |                            |                     |                              |                     | 820pF        | ± 10%              | V821K0201X7R500NA* |
|            |                            |                     |                              |                     |              | ± 20%              | V821M0201X7R500NA* |
|            |                            |                     |                              |                     | 1.0nF        | ± 10%              | V102K0201X7R500NA* |
|            |                            |                     |                              |                     |              | ± 20%              | V102M0201X7R500NA* |
|            |                            |                     |                              |                     | 1nF          | ± 10%              | V102K0201X7R500NA* |
|            |                            |                     |                              |                     |              | ± 20%              | V102M0201X7R500NA* |
|            |                            |                     | 1.2nF                        |                     | ± 10%        | V122K0201X7R250NA* |                    |
|            |                            |                     |                              |                     | ± 20%        | V122M0201X7R250NA* |                    |
|            |                            |                     | 1.5nF                        |                     | ± 10%        | V152K0201X7R250NA* |                    |
|            |                            |                     |                              |                     | ± 20%        | V152M0201X7R250NA* |                    |
|            |                            |                     | 1.8nF                        |                     | ± 10%        | V182K0201X7R250NA* |                    |
|            |                            |                     |                              |                     | ± 20%        | V182M0201X7R250NA* |                    |
|            |                            |                     | 2.2nF                        |                     | ± 10%        | V222K0201X7R250NA* |                    |
|            |                            |                     |                              |                     | ± 20%        | V222M0201X7R250NA* |                    |
|            |                            |                     | 2.7nF                        |                     | ± 10%        | V272K0201X7R250NA* |                    |
|            |                            |                     |                              |                     | ± 20%        | V272M0201X7R250NA* |                    |
|            |                            |                     | 3.3nF                        |                     | ± 10%        | V332K0201X7R250NA* |                    |
|            |                            |                     |                              |                     | ± 20%        | V332M0201X7R250NA* |                    |
| 4.7nF      | ± 10%                      | V472K0201X7R250NA*  |                              |                     |              |                    |                    |
|            | ± 20%                      | V472M0201X7R250NA*  |                              |                     |              |                    |                    |
| 5.6nF      | ± 10%                      | V562K0201X7R250NA*  |                              |                     |              |                    |                    |
|            | ± 20%                      | V562M0201X7R250NA*  |                              |                     |              |                    |                    |
| 6.8nF      | ± 10%                      | V682K0201X7R250NA*  |                              |                     |              |                    |                    |
|            | ± 20%                      | V682M0201X7R250NA*  |                              |                     |              |                    |                    |
| 10nF       | ± 10%                      | V103K0201X7R250NA*  |                              |                     |              |                    |                    |
|            | ± 20%                      | V103M0201X7R250NA*  |                              |                     |              |                    |                    |
| 0402       | X7R                        | X7R                 | 50                           | 0.55(max)           | 1.2nF        | ± 10%              | V122K0402X7R500NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V122M0402X7R500NB* |
|            |                            |                     |                              |                     | 1.5nF        | ± 10%              | V152K0402X7R500NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V152M0402X7R500NB* |
|            |                            |                     |                              |                     | 1.8nF        | ± 10%              | V182K0402X7R500NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V182M0402X7R500NB* |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance  | 品名<br>Part Number  |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|--------------------|--------------------|
| 0402       | X7R                        | X7R                 | 50                           | 0.55(max)           | 2.2nF        | ± 10%              | V222K0402X7R500NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V222M0402X7R500NB* |
|            |                            |                     |                              |                     | 2.7nF        | ± 10%              | V272K0402X7R500NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V272M0402X7R500NB* |
|            |                            |                     |                              |                     | 3.3nF        | ± 10%              | V332K0402X7R500NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V332M0402X7R500NB* |
|            |                            |                     |                              |                     | 3.9nF        | ± 10%              | V392K0402X7R500NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V392M0402X7R500NB* |
|            |                            |                     |                              |                     | 4.7nF        | ± 10%              | V472K0402X7R500NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V472M0402X7R500NB* |
|            |                            |                     |                              |                     | 6.8nF        | ± 10%              | V682K0402X7R500NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V682M0402X7R500NB* |
|            |                            |                     | 10nF                         |                     | ± 10%        | V103K0402X7R500NB* |                    |
|            |                            |                     |                              |                     | ± 20%        | V103M0402X7R500NB* |                    |
|            |                            |                     | 12nF                         |                     | ± 10%        | V123K0402X7R500NB* |                    |
|            |                            |                     |                              |                     | ± 20%        | V123M0402X7R500NB* |                    |
|            |                            |                     | 15nF                         |                     | ± 10%        | V153K0402X7R500NB* |                    |
|            |                            |                     |                              |                     | ± 20%        | V153M0402X7R500NB* |                    |
|            |                            |                     | 22nF                         |                     | ± 10%        | V223K0402X7R500NB* |                    |
|            |                            |                     |                              |                     | ± 20%        | V223M0402X7R500NB* |                    |
|            |                            |                     | 27nF                         |                     | ± 10%        | V273K0402X7R500NB* |                    |
|            |                            |                     |                              |                     | ± 20%        | V273M0402X7R500NB* |                    |
|            |                            |                     | 33nF                         |                     | ± 10%        | V333K0402X7R500NB* |                    |
|            |                            |                     |                              |                     | ± 20%        | V333M0402X7R500NB* |                    |
| 47nF       | ± 10%                      | V473K0402X7R500NB*  |                              |                     |              |                    |                    |
|            | ± 20%                      | V473M0402X7R500NB*  |                              |                     |              |                    |                    |
| 100nF      | ± 10%                      | V104K0402X7R500NC*  |                              |                     |              |                    |                    |
|            | ± 20%                      | V104M0402X7R500NC*  |                              |                     |              |                    |                    |
| 25         | X7R                        | X7R                 | 25                           | 0.55(max)           | 22nF         | ± 10%              | V223K0402X7R250NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V223M0402X7R250NB* |
|            |                            |                     |                              |                     | 27nF         | ± 10%              | V273K0402X7R250NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V273M0402X7R250NB* |
|            |                            |                     |                              |                     | 33nF         | ± 10%              | V333K0402X7R250NB* |
|            |                            |                     |                              |                     |              | ± 20%              | V333M0402X7R250NB* |
| 47nF       | ± 10%                      | V473K0402X7R250NB*  |                              |                     |              |                    |                    |
|            | ± 20%                      | V473M0402X7R250NB*  |                              |                     |              |                    |                    |
| 56nF       | ± 10%                      | V563K0402X7R250NB*  |                              |                     |              |                    |                    |
|            | ± 20%                      | V563M0402X7R250NB*  |                              |                     |              |                    |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |
|------------|-------------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|
| 0402       | X7R                           | X7R                 | 25                           | 0.55(max)           | 68nF         | ± 10%             | V683K0402X7R250NB* |
|            |                               |                     |                              |                     |              | ± 20%             | V683M0402X7R250NB* |
|            |                               |                     |                              |                     | 100nF        | ± 10%             | V104K0402X7R250NB* |
|            |                               |                     |                              |                     |              | ± 20%             | V104M0402X7R250NB* |

高温型片式多层陶瓷电容器系列 X6S *High Temperature MLCC (X6S)*

| 温度特性<br>T.C. Code | 微容系列代码<br>VIIYONG Type Code | 尺寸范围(EIA)<br>Size | 额定电压范围<br>Rated Voltage | 静电容量范围<br>Capacitance |
|-------------------|-----------------------------|-------------------|-------------------------|-----------------------|
| X6S               | X6S                         | 0201~0805         | 4~50Vdc                 | 12nF~47μF             |

X6S特点 **Characteristics**

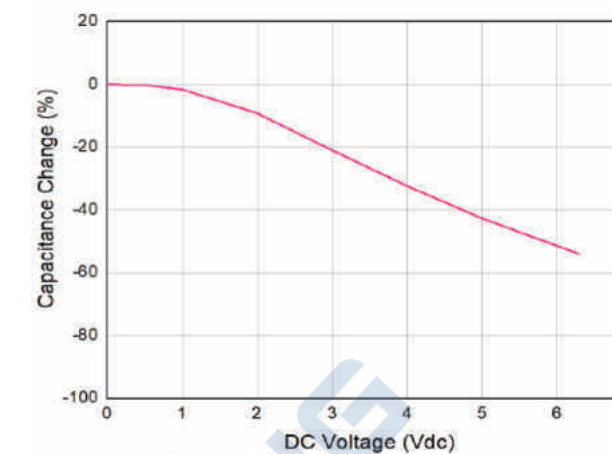
高容值 High capacitance  
最高工作温度可达105°C The maximum working temperature can reach 105 °C

X6S应用领域 **Application Field**

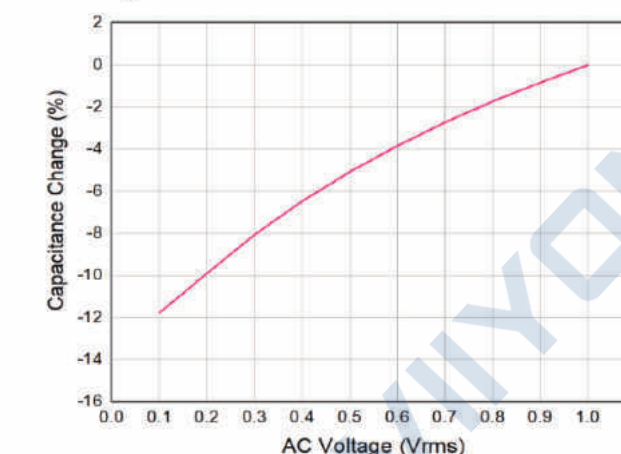
CPU、芯片外围、户外安防摄像头等高温工作电路  
High-temperature working circuit such as CPU, Chip periphery and outdoor security camera etc.

X6S特曲线 **Characteristics Curve**

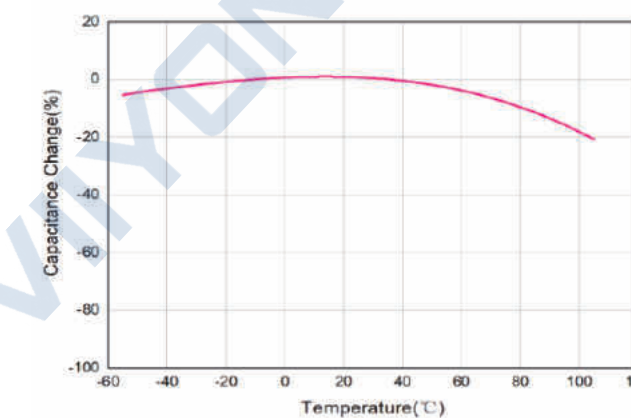
DC Bias Characteristics



AC Voltage Characteristics



Temperature Characteristic



注:上图为X6S, 100nF的部分特性。

The figure above shows partial characteristics of X6S, 100nF.

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap.       | 允许偏差<br>Tolerance  | 品名<br>Part Number  |
|------------|-------------------------------|---------------------|------------------------------|---------------------|--------------------|--------------------|--------------------|
| 0201       | X6S                           | X6S                 | 16                           | 0.35(max)           | 100nF              | ± 10%              | V104K0201X6S160NJ* |
|            |                               |                     |                              |                     |                    | ± 20%              | V104M0201X6S160NJ* |
|            |                               |                     |                              |                     | 12nF               | ± 10%              | V123K0201X6S100NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V123M0201X6S100NA* |
|            |                               |                     |                              |                     | 15nF               | ± 10%              | V153K0201X6S100NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V153M0201X6S100NA* |
|            |                               |                     | 18nF                         | ± 10%               | V183K0201X6S100NA* |                    |                    |
|            |                               |                     |                              | ± 20%               | V183M0201X6S100NA* |                    |                    |
|            |                               |                     | 22nF                         | ± 10%               | V223K0201X6S100NA* |                    |                    |
|            |                               |                     |                              | ± 20%               | V223M0201X6S100NA* |                    |                    |
|            |                               |                     | 27nF                         | ± 10%               | V273K0201X6S100NA* |                    |                    |
|            |                               |                     |                              | ± 20%               | V273M0201X6S100NA* |                    |                    |
|            |                               |                     | 33nF                         | ± 10%               | V333K0201X6S100NA* |                    |                    |
|            |                               |                     |                              | ± 20%               | V333M0201X6S100NA* |                    |                    |
|            |                               |                     | 47nF                         | ± 10%               | V473K0201X6S100NA* |                    |                    |
|            |                               |                     |                              | ± 20%               | V473M0201X6S100NA* |                    |                    |
|            |                               |                     | 56nF                         | ± 10%               | V563K0201X6S100NA* |                    |                    |
|            |                               |                     |                              | ± 20%               | V563M0201X6S100NA* |                    |                    |
|            |                               |                     | 100nF                        | ± 10%               | V104K0201X6S100NA* |                    |                    |
|            |                               |                     |                              | ± 20%               | V104M0201X6S100NA* |                    |                    |
|            |                               |                     | 0.35(max)                    | 220nF               | ± 10%              | V224K0201X6S100NJ* |                    |
|            |                               |                     |                              |                     | ± 20%              | V224M0201X6S100NJ* |                    |
|            |                               |                     | 6.3                          | 0.33(max)           | 12nF               | ± 10%              | V123K0201X6S6R3NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V123M0201X6S6R3NA* |
|            |                               |                     |                              |                     | 15nF               | ± 10%              | V153K0201X6S6R3NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V153M0201X6S6R3NA* |
|            |                               |                     |                              |                     | 18nF               | ± 10%              | V183K0201X6S6R3NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V183M0201X6S6R3NA* |
|            |                               |                     |                              |                     | 22nF               | ± 10%              | V223K0201X6S6R3NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V223M0201X6S6R3NA* |
| 27nF       | ± 10%                         | V273K0201X6S6R3NA*  |                              |                     |                    |                    |                    |
|            | ± 20%                         | V273M0201X6S6R3NA*  |                              |                     |                    |                    |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application<br>Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap.       | 允许偏差<br>Tolerance  | 品名<br>Part Number  |
|------------|-------------------------------|---------------------|------------------------------|---------------------|--------------------|--------------------|--------------------|
| 0201       | X6S                           | X6S                 | 6.3                          | 0.33(max)           | 33nF               | ± 10%              | V333K0201X6S6R3NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V333M0201X6S6R3NA* |
|            |                               |                     |                              |                     | 47nF               | ± 10%              | V473K0201X6S6R3NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V473M0201X6S6R3NA* |
|            |                               |                     |                              |                     | 56nF               | ± 10%              | V563K0201X6S6R3NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V563M0201X6S6R3NA* |
|            |                               |                     |                              | 100nF               | ± 10%              | V104K0201X6S6R3NA* |                    |
|            |                               |                     |                              |                     | ± 20%              | V104M0201X6S6R3NA* |                    |
|            |                               |                     |                              | 0.35(max)           | 220nF              | ± 10%              | V224K0201X6S6R3NJ* |
|            |                               |                     |                              |                     |                    | ± 20%              | V224M0201X6S6R3NJ* |
|            |                               |                     |                              | 0.4(max)            | 470nF              | ± 10%              | V474K0201X6S6R3NX* |
|            |                               |                     |                              |                     |                    | ± 20%              | V474M0201X6S6R3NX* |
|            |                               |                     | 1.0 μ F                      | 100nF               | ± 10%              | V105K0201X6S6R3NX* |                    |
|            |                               |                     |                              |                     | ± 20%              | V105M0201X6S6R3NX* |                    |
|            |                               |                     | 4                            | 0.33(max)           | 100nF              | ± 10%              | V104K0201X6S4R0NA* |
|            |                               |                     |                              |                     |                    | ± 20%              | V104M0201X6S4R0NA* |
|            |                               |                     |                              |                     | 220nF              | ± 10%              | V224K0201X6S4R0NJ* |
|            |                               |                     |                              |                     |                    | ± 20%              | V224M0201X6S4R0NJ* |
| 470nF      | ± 10%                         | V474K0201X6S4R0NJ*  |                              |                     |                    |                    |                    |
|            | ± 20%                         | V474M0201X6S4R0NJ*  |                              |                     |                    |                    |                    |
| 1.0 μ F    | ± 10%                         | V105K0201X6S4R0NX*  |                              |                     |                    |                    |                    |
|            | ± 20%                         | V105M0201X6S4R0NX*  |                              |                     |                    |                    |                    |
| 0402       | X6S                           | X6S                 | 50                           | 0.70(max)           | 100nF              | ± 10%              | V104K0402X6S500NC* |
|            |                               |                     |                              |                     |                    | ± 20%              | V104M0402X6S500NC* |
|            |                               |                     |                              |                     | 100nF              | ± 10%              | V104K0402X6S350NC* |
|            |                               |                     |                              |                     |                    | ± 20%              | V104M0402X6S350NC* |
|            |                               |                     |                              |                     | 100nF              | ± 10%              | V104K0402X6S250NC* |
|            |                               |                     |                              |                     |                    | ± 20%              | V104M0402X6S250NC* |
|            |                               |                     | 220nF                        | ± 10%               | V224K0402X6S250NC* |                    |                    |
|            |                               |                     |                              | ± 20%               | V224M0402X6S250NC* |                    |                    |
|            |                               |                     | 25                           | 0.63(max)           | 1.0 μ F            | ± 10%              | V105K0402X6S250NN* |
|            |                               |                     |                              |                     |                    | ± 20%              | V105M0402X6S250NN* |
|            |                               |                     |                              |                     | 100nF              | ± 10%              | V104K0402X6S160NN* |
|            |                               |                     |                              |                     |                    | ± 20%              | V104M0402X6S160NN* |
| 220nF      | ± 10%                         | V224K0402X6S160NC*  |                              |                     |                    |                    |                    |
|            | ± 20%                         | V224M0402X6S160NC*  |                              |                     |                    |                    |                    |



规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance  | 品名<br>Part Number  |                    |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|--------------------|--------------------|--------------------|
| 0402       | X6S                        | X6S                 | 16                           | 0.70(max)           | 470nF        | ± 10%              | V474K0402X6S160NC* |                    |
|            |                            |                     |                              |                     | ± 20%        | V474M0402X6S160NC* |                    |                    |
|            |                            |                     |                              | 0.55(max)           | 1.0 μ F      | ± 10%              | V105K0402X6S160NB* |                    |
|            |                            |                     |                              |                     | ± 20%        | V105M0402X6S160NB* |                    |                    |
|            |                            |                     |                              | 10                  | 0.63(max)    | 100nF              | ± 10%              | V104K0402X6S100NN* |
|            |                            |                     |                              |                     |              |                    | ± 20%              | V104M0402X6S100NN* |
|            |                            |                     |                              |                     |              | 220nF              | ± 10%              | V224K0402X6S100NN* |
|            |                            |                     |                              |                     |              |                    | ± 20%              | V224M0402X6S100NN* |
|            |                            |                     | 470nF                        |                     | ± 10%        | V474K0402X6S100NN* |                    |                    |
|            |                            |                     |                              |                     | ± 20%        | V474M0402X6S100NN* |                    |                    |
|            |                            |                     | 0.55(max)                    |                     | 1.0 μ F      | ± 10%              | V105K0402X6S100NB* |                    |
|            |                            |                     |                              |                     | ± 20%        | V105M0402X6S100NB* |                    |                    |
|            |                            |                     | 6.3                          | 0.63(max)           | 2.2 μ F      | ± 10%              | V225K0402X6S100NN* |                    |
|            |                            |                     |                              |                     |              | ± 20%              | V225M0402X6S100NN* |                    |
|            |                            |                     |                              | 0.70(max)           | 4.7 μ F      | ± 10%              | V475K0402X6S100NC* |                    |
|            |                            |                     |                              |                     |              | ± 20%              | V475M0402X6S100NC* |                    |
|            |                            |                     | 6.3                          | 0.63(max)           | 100nF        | ± 10%              | V104K0402X6S6R3NN* |                    |
|            |                            |                     |                              |                     |              | ± 20%              | V104M0402X6S6R3NN* |                    |
|            |                            |                     |                              |                     | 220nF        | ± 10%              | V224K0402X6S6R3NN* |                    |
|            |                            |                     |                              |                     |              | ± 20%              | V224M0402X6S6R3NN* |                    |
|            |                            |                     |                              | 470nF               | ± 10%        | V474K0402X6S6R3NN* |                    |                    |
|            |                            |                     |                              |                     | ± 20%        | V474M0402X6S6R3NN* |                    |                    |
|            |                            |                     |                              | 0.55(max)           | 1.0 μ F      | ± 10%              | V105K0402X6S6R3NB* |                    |
|            |                            |                     |                              |                     | ± 20%        | V105M0402X6S6R3NB* |                    |                    |
|            |                            |                     | 4                            | 0.55(max)           | 1.0 μ F      | ± 10%              | V105K0402X6S4R0NB* |                    |
|            |                            |                     |                              |                     |              | ± 20%              | V105M0402X6S4R0NB* |                    |
|            |                            |                     |                              | 2.2 μ F             | ± 10%        | V225K0402X6S4R0NB* |                    |                    |
|            |                            |                     |                              |                     | ± 20%        | V225M0402X6S4R0NB* |                    |                    |
|            |                            |                     | 0.70(max)                    | 4.7 μ F             | ± 10%        | V475K0402X6S4R0NC* |                    |                    |
|            |                            |                     |                              |                     | ± 20%        | V475M0402X6S4R0NC* |                    |                    |
|            |                            |                     |                              | 10 μ F              | ± 10%        | V106K0402X6S4R0NC* |                    |                    |
|            |                            |                     |                              |                     | ± 20%        | V106M0402X6S4R0NC* |                    |                    |
| 0603       | X6S                        | X6S                 | 35                           | 0.90(max)           | 1.0 μ F      | ± 20%              | V105M0603X6S350ND* |                    |
|            |                            |                     |                              | 1.0(max)            | 2.2 μ F      | ± 20%              | V225M0603X6S350NK* |                    |

规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |         |       |                    |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|---------|-------|--------------------|
| 0603       | X6S                        | X6S                 | 25                           | 1.0(max)            | 2.2 μ F      | ± 20%             | V225M0603X6S250NK* |         |       |                    |
|            |                            |                     |                              |                     | 4.7 μ F      | ± 20%             | V475M0603X6S250NK* |         |       |                    |
|            |                            |                     |                              | 0.90(max)           | 2.2 μ F      | ± 20%             | V225M0603X6S160ND* |         |       |                    |
|            |                            |                     |                              |                     | 4.7 μ F      | ± 20%             | V475M0603X6S160NK* |         |       |                    |
|            |                            |                     | 16                           | 1.0(max)            | 10 μ F       | ± 20%             | V106M0603X6S160NK* |         |       |                    |
|            |                            |                     |                              |                     | 2.2 μ F      | ± 20%             | V225M0603X6S100ND* |         |       |                    |
|            |                            |                     |                              | 0.90(max)           | 4.7 μ F      | ± 20%             | V475M0603X6S100NK* |         |       |                    |
|            |                            |                     |                              |                     | 10 μ F       | ± 20%             | V106M0603X6S100NK* |         |       |                    |
|            |                            |                     | 10                           | 1.0(max)            | 2.2 μ F      | ± 20%             | V225M0603X6S6R3ND* |         |       |                    |
|            |                            |                     |                              |                     | 4.7 μ F      | ± 20%             | V475M0603X6S6R3ND* |         |       |                    |
|            |                            |                     |                              | 0.90(max)           | 10 μ F       | ± 20%             | V106M0603X6S6R3NK* |         |       |                    |
|            |                            |                     |                              |                     | 22 μ F       | ± 20%             | V226M0603X6S6R3NK* |         |       |                    |
|            |                            |                     | 6.3                          | 0.90(max)           | 4.7 μ F      | ± 20%             | V475M0603X6S4R0ND* |         |       |                    |
|            |                            |                     |                              |                     | 10 μ F       | ± 20%             | V106M0603X6S4R0NK* |         |       |                    |
|            |                            |                     |                              | 1.0(max)            | 2.2 μ F      | ± 20%             | V226M0603X6S4R0NK* |         |       |                    |
|            |                            |                     |                              |                     | 4.7 μ F      | ± 20%             | V475M0805X6S250NH* |         |       |                    |
|            |                            |                     | 0805                         | X6S                 | X6S          | 25                | 1.45(max)          | 4.7 μ F | ± 20% | V475M0805X6S160NH* |
|            |                            |                     |                              |                     |              |                   |                    | 1.0 μ F | ± 20% | V105M0805X6S160NH* |
|            |                            |                     |                              |                     |              |                   |                    | 2.2 μ F | ± 20% | V225M0805X6S160NH* |
|            |                            |                     |                              |                     |              |                   |                    | 4.7 μ F | ± 20% | V475M0805X6S100NH* |
|            |                            |                     |                              |                     |              | 16                | 1.45(max)          | 10 μ F  | ± 20% | V106M0805X6S100NH* |
|            |                            |                     |                              |                     |              |                   |                    | 4.7 μ F | ± 20% | V475M0805X6S100NH* |
|            |                            |                     |                              |                     |              |                   |                    | 10 μ F  | ± 20% | V106M0805X6S100NH* |
|            |                            |                     |                              |                     |              |                   |                    | 22 μ F  | ± 20% | V226M0805X6S100NH* |
| 10         | 1.45(max)                  | 4.7 μ F             |                              |                     |              | ± 20%             | V475M0805X6S6R3NY* |         |       |                    |
|            |                            | 1.45(max)           |                              |                     |              | ± 20%             | V475M0805X6S6R3NH* |         |       |                    |
|            |                            | 1.0(max)            |                              |                     |              | ± 20%             | V106M0805X6S6R3NY* |         |       |                    |
|            |                            | 10 μ F              |                              |                     |              | ± 20%             | V106M0805X6S6R3NH* |         |       |                    |
| 6.3        | 1.45(max)                  | 22 μ F              | ± 20%                        | V226M0805X6S6R3NH*  |              |                   |                    |         |       |                    |
|            |                            | 47 μ F              | ± 20%                        | V476M0805X6S6R3NH*  |              |                   |                    |         |       |                    |
|            | 1.0(max)                   | 4.7 μ F             | ± 20%                        | V475M0805X6S6R3NY*  |              |                   |                    |         |       |                    |
|            |                            | 1.45(max)           | ± 20%                        | V475M0805X6S6R3NH*  |              |                   |                    |         |       |                    |
| 4          | 1.0(max)                   | 10 μ F              | ± 20%                        | V106M0805X6S6R3NY*  |              |                   |                    |         |       |                    |
|            |                            | 1.45(max)           | ± 20%                        | V106M0805X6S6R3NH*  |              |                   |                    |         |       |                    |
|            |                            | 1.0(max)            | ± 20%                        | V226M0805X6S6R3NY*  |              |                   |                    |         |       |                    |
|            |                            | 1.45(max)           | ± 20%                        | V226M0805X6S6R3NH*  |              |                   |                    |         |       |                    |
|            | 1.0(max)                   | 22 μ F              | ± 20%                        | V476M0805X6S6R3NY*  |              |                   |                    |         |       |                    |
|            |                            |                     | ± 20%                        | V476M0805X6S6R3NH*  |              |                   |                    |         |       |                    |
|            |                            | 47 μ F              | ± 20%                        | V476M0805X6S6R3NY*  |              |                   |                    |         |       |                    |
|            |                            |                     | ± 20%                        | V476M0805X6S6R3NH*  |              |                   |                    |         |       |                    |

高温型片式多层陶瓷电容器系列 X7T High Temperature MLCC (X7T)

| 温度特性<br>T.C. Code | 微容系列代码<br>VIIYONG Type Code | 尺寸范围(EIA)<br>Size | 额定电压范围<br>Rated Voltage | 静电容量范围<br>Capacitance |
|-------------------|-----------------------------|-------------------|-------------------------|-----------------------|
| X7T               | X7T                         | 0201~0805         | 4~50Vdc                 | 100nF~10μF            |

X7T特点 Characteristics

CPU、芯片外围、户外安防摄像头等高温工作电路

High-temperature working circuit such as CPU, Chip periphery and outdoor security camera etc.

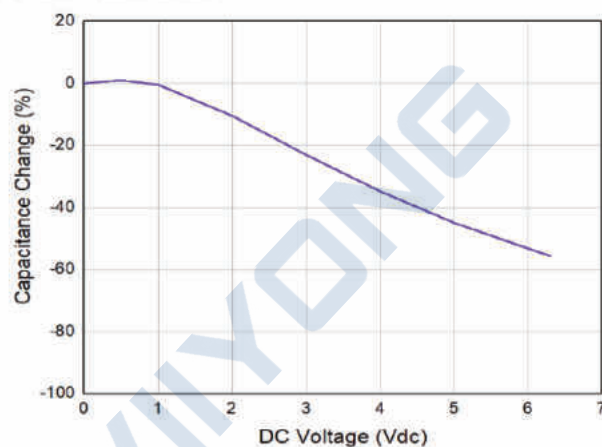
X7T应用领域 Application Field

CPU、芯片外围、户外安防摄像头等高温工作电路

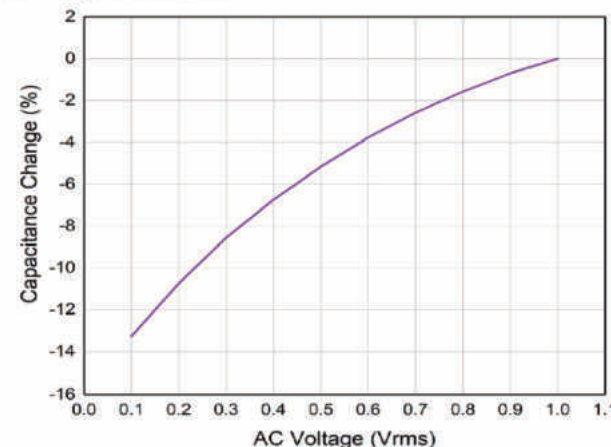
High-temperature working circuit such as CPU, Chip periphery and outdoor security camera etc.

X7T特性曲线 Characteristics Curve

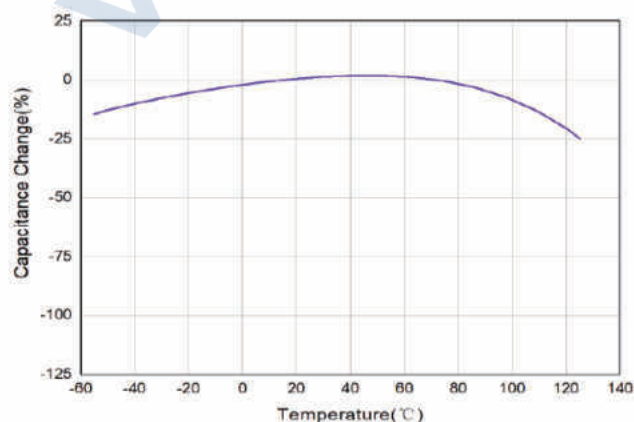
DC Bias Characteristics



AC Voltage Characteristics



Temperature Characteristic



注:上图为X7T, 100nF的部分特性。

The figure above shows partial characteristics of X7T, 100nF.

规格型号及品名 Product Range and Part Number

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance | 品名<br>Part Number  |    |           |       |       |                    |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|-------------------|--------------------|----|-----------|-------|-------|--------------------|
| 0201       | X7T                        | X7T                 | 10                           | 0.35(max)           | 100nF        | ± 10%             | V104K0201X7T100NJ* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V104M0201X7T100NJ* |    |           |       |       |                    |
|            |                            |                     |                              |                     | 100nF        | ± 10%             | V104K0201X7T6R3NA* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V104M0201X7T6R3NA* |    |           |       |       |                    |
|            |                            |                     |                              |                     | 100nF        | ± 10%             | V104K0201X7T4R0NA* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V104M0201X7T4R0NA* |    |           |       |       |                    |
|            |                            |                     | 4                            | 0.35(max)           | 220nF        | ± 10%             | V224K0201X7T4R0NJ* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V224M0201X7T4R0NJ* |    |           |       |       |                    |
|            |                            |                     |                              |                     | 1 μ F        | ± 10%             | V105K0201X7T4R0NX* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V105M0201X7T4R0NX* |    |           |       |       |                    |
|            |                            |                     |                              |                     | 0402         | X7T               | X7T                | 50 | 0.70(max) | 100nF | ± 10% | V104K0402X7T500NC* |
|            |                            |                     |                              |                     |              |                   |                    |    |           |       | ± 20% | V104M0402X7T500NC* |
| 100nF      | ± 10%                      | V104K0402X7T350NC*  |                              |                     |              |                   |                    |    |           |       |       |                    |
|            | ± 20%                      | V104M0402X7T350NC*  |                              |                     |              |                   |                    |    |           |       |       |                    |
| 220nF      | ± 10%                      | V224K0402X7T250NC*  |                              |                     |              |                   |                    |    |           |       |       |                    |
|            | ± 20%                      | V224M0402X7T250NC*  |                              |                     |              |                   |                    |    |           |       |       |                    |
| 16         | 0.55(max)                  | 1.0 μ F             | ± 10%                        | V105K0402X7T160NB*  |              |                   |                    |    |           |       |       |                    |
|            |                            |                     | ± 20%                        | V105M0402X7T160NB*  |              |                   |                    |    |           |       |       |                    |
|            |                            | 220nF               | ± 10%                        | V224K0402X7T100NC*  |              |                   |                    |    |           |       |       |                    |
|            |                            |                     | ± 20%                        | V224M0402X7T100NC*  |              |                   |                    |    |           |       |       |                    |
|            |                            | 1.0 μ F             | ± 10%                        | V105K0402X7T100NB*  |              |                   |                    |    |           |       |       |                    |
|            |                            |                     | ± 20%                        | V105M0402X7T100NB*  |              |                   |                    |    |           |       |       |                    |
| 6.3        | X7T                        | X7T                 | 6.3                          | 0.63(max)           | 220nF        | ± 10%             | V224K0402X7T6R3NN* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V224M0402X7T6R3NN* |    |           |       |       |                    |
|            |                            |                     |                              |                     | 470nF        | ± 10%             | V474K0402X7T6R3NN* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V474M0402X7T6R3NN* |    |           |       |       |                    |
|            |                            |                     |                              |                     | 1.0 μ F      | ± 10%             | V105K0402X7T6R3NB* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V105M0402X7T6R3NB* |    |           |       |       |                    |
|            |                            |                     | 4                            | 0.55(max)           | 100nF        | ± 10%             | V104K0402X7T4R0NB* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V104M0402X7T4R0NB* |    |           |       |       |                    |
|            |                            |                     |                              |                     | 220nF        | ± 10%             | V224K0402X7T4R0NN* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V224M0402X7T4R0NN* |    |           |       |       |                    |
|            |                            |                     |                              |                     | 470nF        | ± 10%             | V474K0402X7T4R0NN* |    |           |       |       |                    |
|            |                            |                     |                              |                     |              | ± 20%             | V474M0402X7T4R0NN* |    |           |       |       |                    |
| 1.0 μ F    | ± 10%                      | V105K0402X7T4R0NB*  |                              |                     |              |                   |                    |    |           |       |       |                    |
|            | ± 20%                      | V105M0402X7T4R0NB*  |                              |                     |              |                   |                    |    |           |       |       |                    |
| 2.2 μ F    | ± 10%                      | V225K0402X7T4R0NB*  |                              |                     |              |                   |                    |    |           |       |       |                    |
|            | ± 20%                      | V225M0402X7T4R0NB*  |                              |                     |              |                   |                    |    |           |       |       |                    |



规格型号及品名 *Product Range and Part Number*

| 尺寸<br>Size | 应用特性代码<br>Application Code | 温度特性代码<br>T.C. Code | 额定电压<br>U <sub>R</sub> (Vdc) | 厚度<br>Thickness(mm) | 静电容量<br>Cap. | 允许偏差<br>Tolerance  | 品名<br>Part Number  |                    |
|------------|----------------------------|---------------------|------------------------------|---------------------|--------------|--------------------|--------------------|--------------------|
| 0402       | X7T                        | X7T                 | 4                            | 0.70(max)           | 4.7 μ F      | ± 10%              | V475K0402X7T4R0NC* |                    |
|            |                            |                     |                              |                     |              | ± 20%              | V475M0402X7T4R0NC* |                    |
| 0603       | X7T                        | X7T                 | 16                           | 0.90(max)           | 1.0 μ F      | ± 20%              | V105M0603X7T160ND* |                    |
|            |                            |                     |                              | 1.0(max)            | 2.2 μ F      | ± 20%              | V225M0603X7T160NK* |                    |
|            |                            |                     |                              | 10                  | 0.90(max)    | 1.0 μ F            | ± 20%              | V105M0603X7T100ND* |
|            |                            |                     |                              |                     | 2.2 μ F      | ± 20%              | V225M0603X7T100ND* |                    |
|            |                            |                     |                              |                     | 4.7 μ F      | ± 20%              | V475M0603X7T100NK* |                    |
|            |                            |                     |                              |                     | 10 μ F       | ± 20%              | V106M0603X7T100NK* |                    |
|            |                            |                     | 6.3                          | 0.90(max)           | ± 20%        | V105M0603X7T6R3ND* |                    |                    |
|            |                            |                     |                              | 2.2 μ F             | ± 20%        | V225M0603X7T6R3ND* |                    |                    |
|            |                            |                     | 4                            | 1.0(max)            | ± 20%        | V475M0603X7T6R3NK* |                    |                    |
|            |                            |                     |                              | 0.90(max)           | ± 20%        | V225M0603X7T4R0ND* |                    |                    |
|            |                            |                     |                              | 4.7 μ F             | ± 20%        | V475M0603X7T4R0NK* |                    |                    |
|            |                            |                     |                              | 10 μ F              | ± 20%        | V106M0603X7T4R0NK* |                    |                    |
| 0805       | X7T                        | X7T                 | 16                           | 1.0(max)            | 1.0 μ F      | ± 20%              | V105M0805X7T160NY* |                    |
|            |                            |                     |                              |                     | ± 20%        | V105M0805X7T160NH* |                    |                    |
|            |                            |                     |                              | 2.2 μ F             | ± 20%        | V225M0805X7T160NH* |                    |                    |
|            |                            |                     |                              | 4.7 μ F             | ± 20%        | V475M0805X7T160NH* |                    |                    |
|            |                            |                     |                              | 10                  | 2.2 μ F      | ± 20%              | V225M0805X7T100NH* |                    |
|            |                            |                     |                              |                     | 4.7 μ F      | ± 20%              | V475M0805X7T100NH* |                    |
|            |                            |                     |                              |                     | 10 μ F       | ± 20%              | V106M0805X7T100NH* |                    |
|            |                            |                     |                              | 6.3                 | 2.2 μ F      | ± 20%              | V225M0805X7T6R3NH* |                    |
|            |                            |                     |                              |                     | 4.7 μ F      | ± 20%              | V475M0805X7T6R3NH* |                    |
|            |                            |                     | 10 μ F                       |                     | ± 20%        | V106M0805X7T6R3NH* |                    |                    |
|            |                            |                     | 4                            | 1.0(max)            | ± 20%        | V225M0805X7T4R0NY* |                    |                    |
|            |                            |                     |                              | 1.45(max)           | ± 20%        | V225M0805X7T4R0NH* |                    |                    |
|            |                            |                     |                              | 4.7 μ F             | ± 20%        | V475M0805X7T4R0NY* |                    |                    |
|            |                            |                     |                              | 1.45(max)           | ± 20%        | V475M0805X7T4R0NH* |                    |                    |
|            |                            |                     |                              | 1.0(max)            | ± 20%        | V106M0805X7T6R3NY* |                    |                    |
| 10 μ F     | ± 20%                      | V106M0805X7T6R3NY*  |                              |                     |              |                    |                    |                    |

\*2类陶瓷介质老化特性的说明:

2类陶瓷介质电容器的容量会随时间而变化,这种特点称为“老化”。这种老化特性是由于在低于居里温度时,陶瓷介质中立方晶体结构的对称性降低,这种状态的转变导致随着时间一部分容量减少。

这种老化过程是可以预计的,与时间按对数规律减小,同时这种老化过程是可逆的。当电容被加热到高于其居里温度一段时间,就会出现去老化现象,老化衰减掉的容量将得到恢复。

去老化的效果取决于陶瓷体的温度和在这个温度下的维持时间。通常采取150°C 1.5小时的条件进行去老化,使容量恢复初始值,电容的去老化容量恢复速度很快。通常电容容量测量的仲裁时间为1000小时,通常在1000小时之后的容量老化衰减速度已经很慢。

The capacitance of Class 2 dielectric changes with time. Which is known as “aging”. It is caused by gradual realignment of the crystalline structure of the ceramic dielectric material as it is cooled below its Curie temperature, which produces a loss of capacitance over time.

The aging process is predictable and follows a logarithmic decay. This aging process is also reversible. When the capacitor is heated to a temperature above its Curie point for a certain period of time, de-aging will occur and the capacitor will regain the capacitance lost during the aging process.

The de-aging outcome depends on both the operating temperature and time at that temperature. In general, exposure to 150°C for one-half hour is sufficient to return the capacitor to its initial capacitance value as the capacitance changes rapidly and immediately after de-aging. Capacitance measurements are indexed to a referee time of 1,000 hours. The selection of this referee time has proven practical, as the actual decline of capacitance after 1,000 hours is very low.

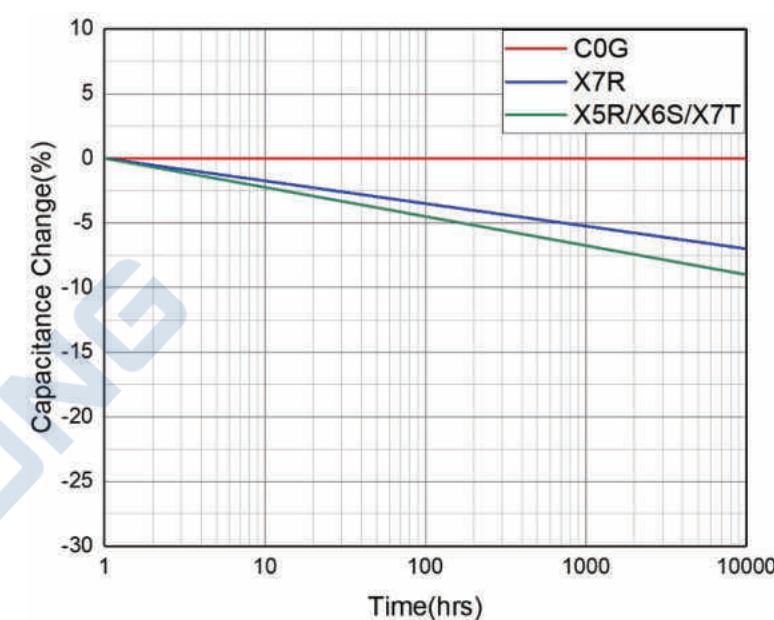


图:MLCC各种材料老化曲线

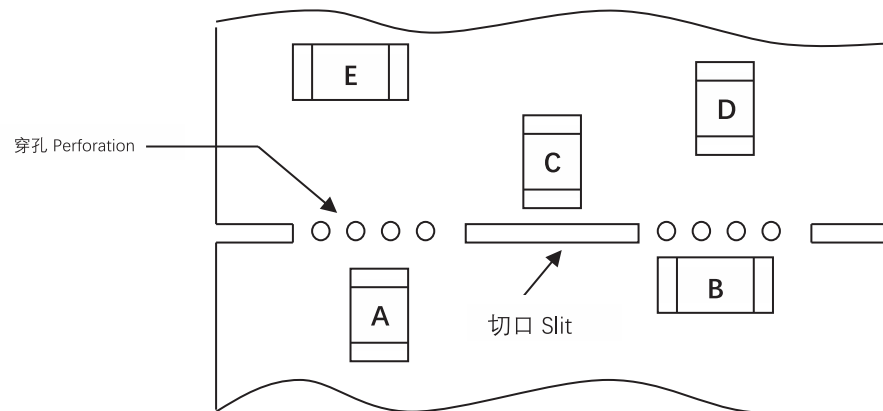


### 应用技术要求 Application of technical requirements

#### 电容器在PCB上的布局设计 Capacitor Layout on PCB

机械应力根据电容器在PCB上的位置不同而变化。请参考下图的设计方案：

Mechanical stress varies according to the location of chip capacitors on PCB. The recommendation for better design is as Fig.



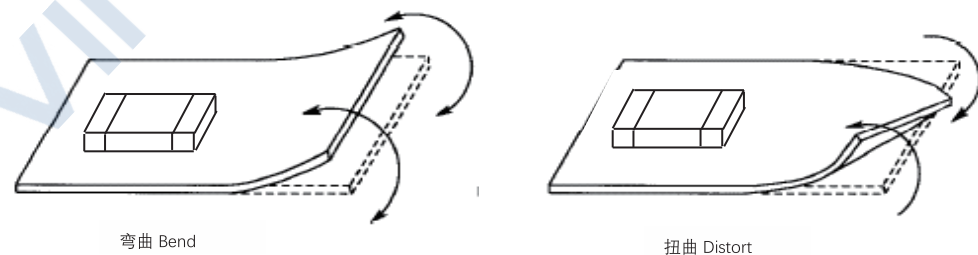
施加在电容器上的应力大小如下：A>B=C>D>E

The stress in capacitors is in the following order: A>B=C>D>E

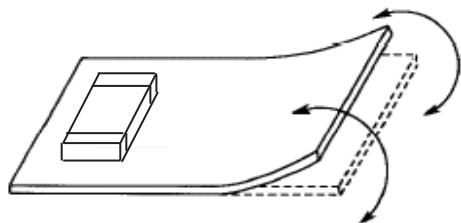
注意：不要弯曲或扭曲PCB，否则电容器会发生断裂。请参考下面的例子：

Pay attention not to bend or distort the PCB otherwise the chip capacitor may crack. Please refer to the following examples.

#### a. 应该避免的情况 Not recommended

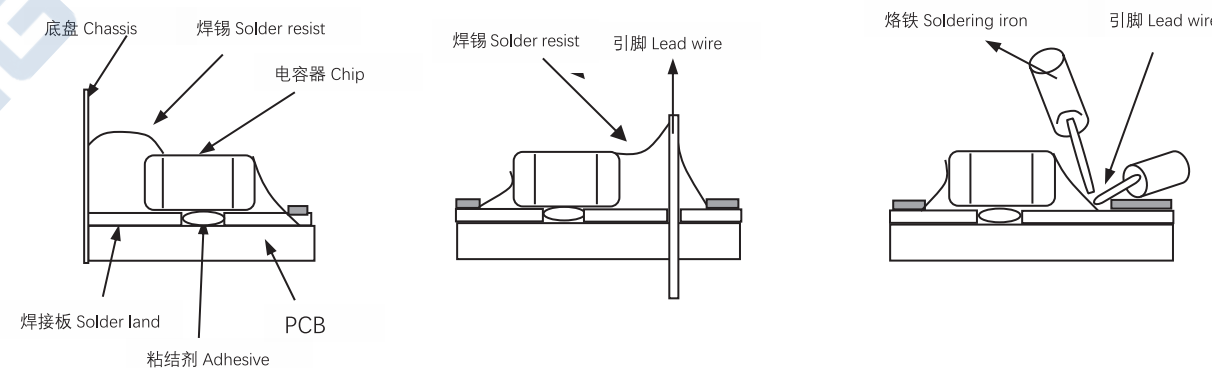


#### b. 建议的操作方式 Recommended

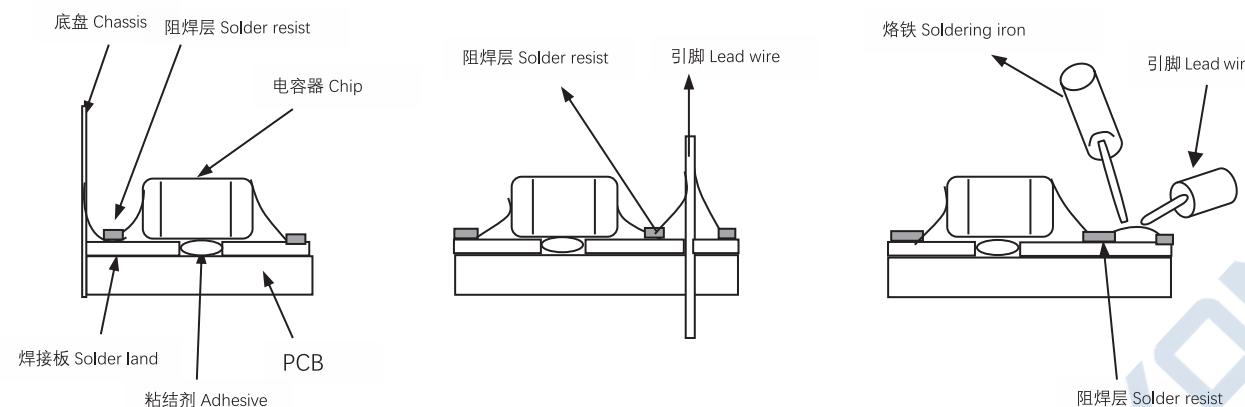


### 焊锡的应用以及焊接方式 Solder Buildup and Soldering Methods

a. 如图焊接方式应该避免 Examples of soldering method not recommended



b. 请参考以下的焊接方式 Examples of soldering method recommended



### 自动化设计的注意事项 Consideration for Automatic Placement

如果安装头调整得过低，会产生过高的应力，导致电容器断裂。请参考下面的注意事项：

If the mounting head is adjusted too low, it may induce excessive stress in the chip capacitor to result in cracking. Please take following precautions:

a. 调整安装头的底部接触PCB的表面，但不能用力压；

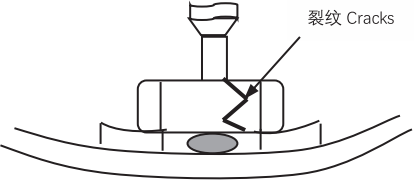
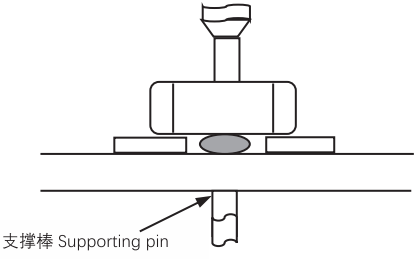
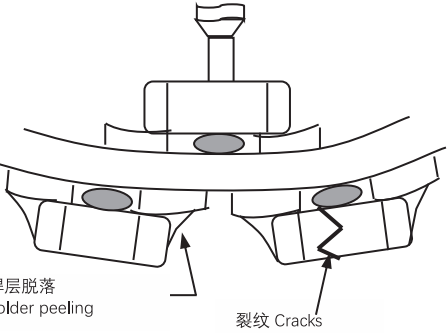
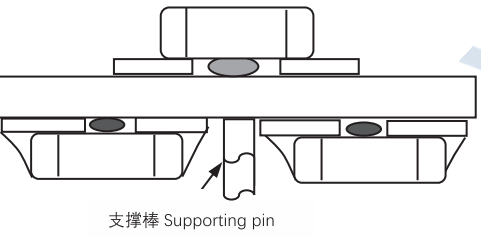
Adjust the bottom dead center of the mounting head to reach on the PCB surface and not press it;

b. 调整安装头的压力至1~3N；

Adjust the mounting head pressure to be 1 to 3N of static weight;

c. 为了降低来自安装头的冲击力，应该由PCB的底部提供支撑力。

To minimize the impact energy from mounting head, it is important to provide support from the bottom side of the PCB.

|                                  | 避免设计方案<br>Not recommended  | 建议设计方案<br>Recommended   |
|----------------------------------|--|---|
| 单面贴装<br>Single-sided<br>Mounting |  裂纹 Cracks                        |  支撑棒 Supporting pin |
| 双面贴装<br>Double-sided<br>Mounting |  焊层脱落 Solder peeling<br>裂纹 Cracks |  支撑棒 Supporting pin |

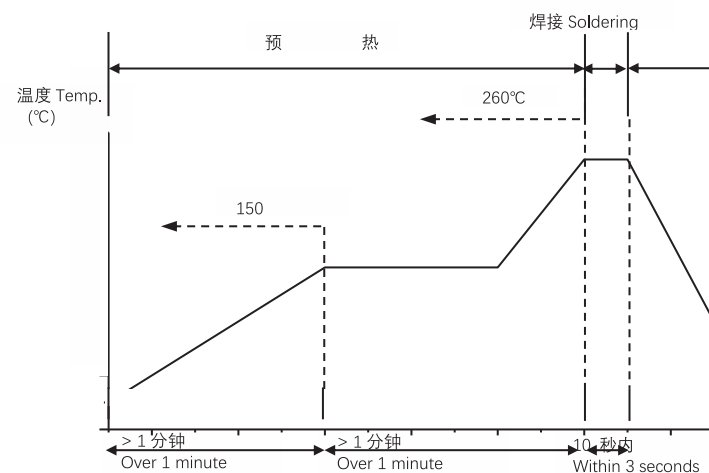
### 焊接要求 Soldering

#### 焊剂的选择 Flux Selection:

- a. 建议使用一种轻度活性焊剂 (氯含量少于0.1wt%), 避免使用活性过强的焊剂。  
It is recommended to use a mildly activated rosin flux (less than 0.1wt% chlorine). Strong flux is not recommended.
- b. 请使用适量的焊剂, 避免过量。  
Please provide proper amount of flux. Excessive flux must be avoided.
- c. 当使用可溶水的焊剂时, 需要进行充分的洗涤。  
When water-soluble flux is used, enough washing is necessary.

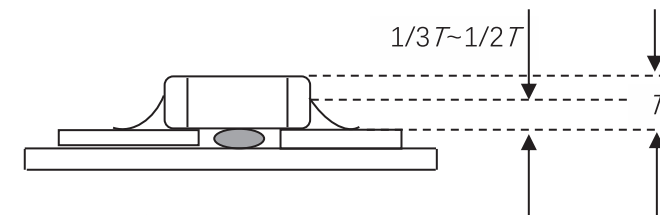
#### 焊接曲线的设计 Recommended Soldering Profile:

##### 回流焊条件 Reflow Soldering Condition



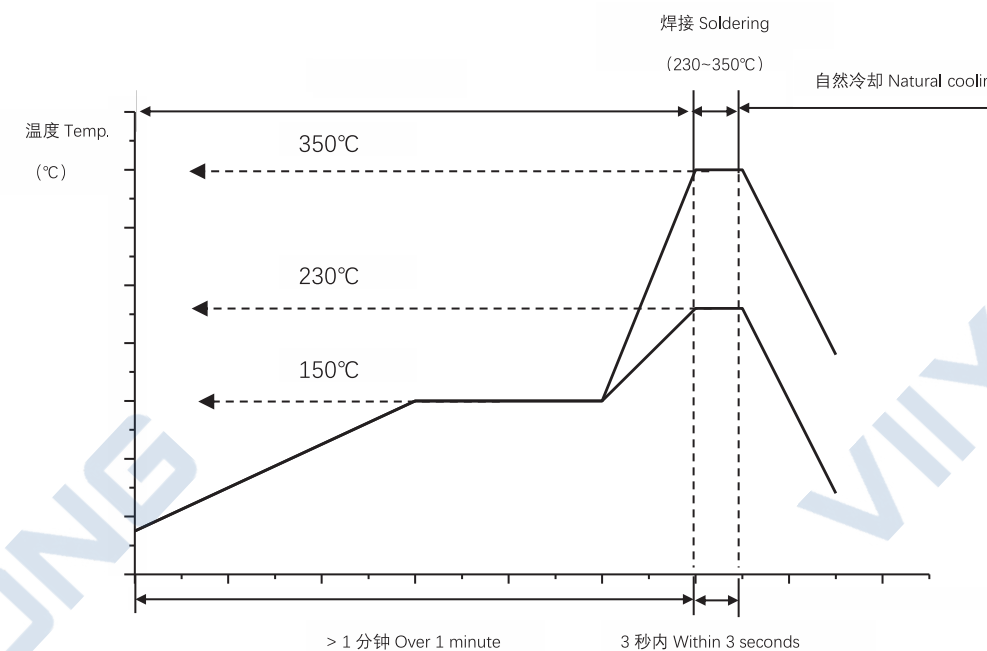
### 注意 Cautions:

- a. 过度的焊锡会在温度变化时产生较高的张力, 从而导致裂纹。而少量的焊锡可能会导致电容器与PCB分离。  
Excessive solder will induce higher tensile force in chip capacitor when temperature changes and result in cracking. Insufficient solder may detach the capacitors from the PC board.  
理想的条件是焊锡量控制在电容器厚度的1/3~1/2, 如图所示:  
The ideal condition is to have solder mass controlled to 1/3 to 1/2 of the thickness of the capacitor



- b. 焊接时间尽量与建议的时间相近, 过长的时间会影响可焊效果。  
Soldering duration should be kept as close to recommended times as possible, because excessive duration can detrimentally affect solderability.

#### 手工焊条件 Hand Soldering Condition:



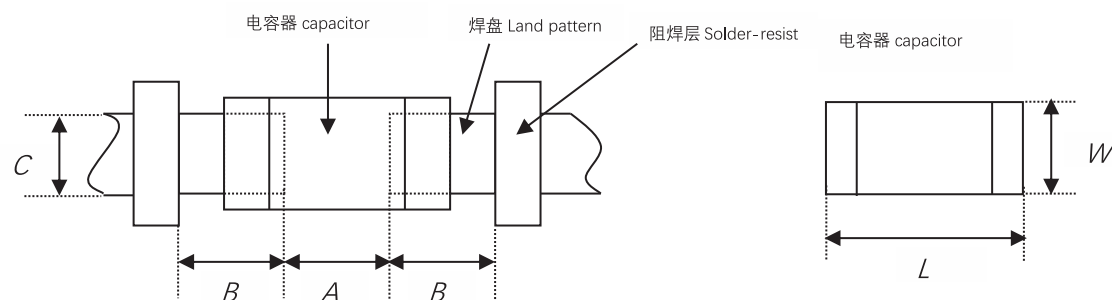
### 注意 Cautions:

- a. 使用20W的烙铁 (最大直径1.0mm);  
Use a 20W soldering iron with a maximum tip diameter of 1.0mm
- b. 烙铁不能够直接接触电容器。  
The soldering iron should not directly touch the capacitor.

### 焊盘设计 Design of Land-patterns

电容器贴装在PCB上时, 端头焊锡量对电容器的性能有直接的联系。焊锡量越多, 施加在电容器上的应力就越大。因此, 设计焊盘时, 必须考虑焊锡的尺寸和结构:

When the capacitors are mounted on a PCB, the amount of solder at the terminations has a direct effect on the performance of the capacitors. The greater the amount of solder, the higher the stress on the chip capacitor. Therefore, when designing land-patterns, it is necessary to consider the appropriate size and configuration of the solder pads.



回流焊的建议设计 (单位:mm)

Recommend land dimensions for reflow-soldering (unit: mm)

| 类型 Type | 01005     | 0201      | 0402      | 0603      | 0805      | 1206      |     |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----|
| 尺寸 Size | L         | 0.4       | 0.6       | 1.0       | 1.6       | 2.0       | 3.2 |
|         | W         | 0.2       | 0.3       | 0.5       | 0.8       | 1.25      | 1.6 |
| A       | 0.16~0.20 | 0.20~0.30 | 0.30~0.50 | 0.60~0.80 | 0.80~1.20 | 2.20~2.40 |     |
| B       | 0.12~0.18 | 0.20~0.35 | 0.35~0.45 | 0.60~0.70 | 0.60~0.70 | 0.80~0.90 |     |
| C       | 0.20~0.23 | 0.20~0.40 | 0.45~0.55 | 0.60~0.80 | 0.80~1.10 | 1.00~1.40 |     |

### 注意事项 Notes

#### 贮存条件 Storage Condition

- a. 产品贮存周期为12个月, 超过12个月需重新提交检验。  
Product storage period is 12 months, more than 12 months need to be re-submitted for inspection.
- b. 贮存温度需小于35°C, 相对湿度需小于RH70%。  
Storage temperature should be less than 35°C and relative humidity should be less than RH70%

#### 工作温度 Operating Temperature

- a. 电容器使用过程中避免超过其上限类别温度。  
Do not use capacitor above the maximum allowable operating temperature.
- b. 表面温度以及自加热温度应该低于电容器的上限类别温度。  
Surface temperature including self heating should be below maximum operating temperature.

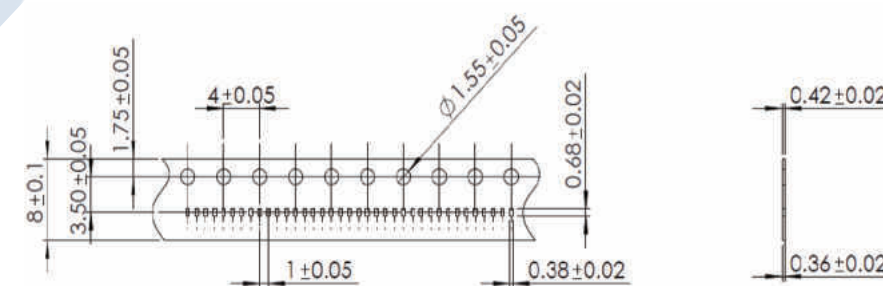
#### 工作电压 Operating Voltage

电容器的工作电压必须低于其额定电压。  
The operating voltage of the capacitor must be lower than its rated voltage.

### 环保助力 Environmental protection

随着电子产品的飞速发展, 电子元器件的使用越来越多, 器件包装所需的原材料纸带的需求也日益增长。为了更充分地利用我们的植被资源、节省树木带来的纸质原材料, 我司推出1mm间距纸带, 针对0201尺寸 (EIA), 一个7英寸胶盘可容纳30Kpcs的0201MLCC, 一盘等于从前的两盘, 充分利用了纸带间的间隙。作为电子元器件生产商的一员, 我们期待您的助力!

With the rapid development of electronic products, the demand of electronic components is increasing, and the demand for raw materials for paper packaging is increasing. In order to make full use of our vegetation resources and save paper raw materials brought by trees, we have introduced 1mm pitch paper tape for 0201 size (EIA), a 7-inch disc can hold 30Kpcs of 0201MLCC, one disc is equal to the previous two, make full use of the gap between the paper tap. As a member of the electronic component manufacturer, we look forward to your help!



单位: mm

1mm 纸带图示



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