

Multilayer Ceramic Capacitors (High Capacitance)

Series: **ECJ**



■ Features

- Small size and high capacitance
- Low ESR/ESL and excellent high-frequency characteristics
- Ideal alternative to TANTALUM CHIP CAPACITORS and ALUMINUM ELECTROLYTIC CAPACITORS
- RoHS compliant

■ Recommended Applications

- **Class 2 (Hi-K Type)**
 - Power supply circuitry decoupling applications
 - DC-DC converter power supply circuitry of the high-speed LSI smoothing circuit

■ Handling Precautions

See Page 48 to 53

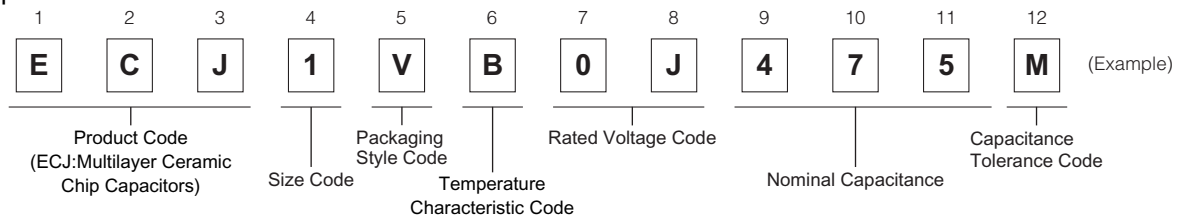
■ Packaging Specifications

See Page 45, 46, 56

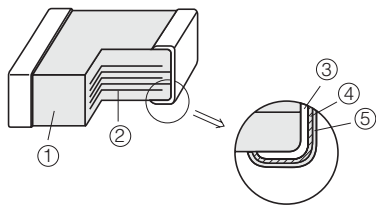
■ Discontinued / Revised Part Numbers, Alternative Part Numbers

See Page 54, 55

■ Explanation of Part Numbers

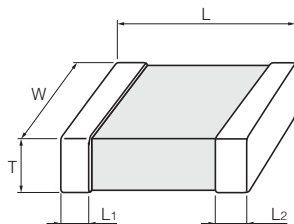


■ Construction



| No | Name | |
|----|--------------------|------------------------|
| ① | Ceramic dielectric | |
| ② | Internal electrode | |
| ③ | Terminal electrode | Substrate electrode |
| ④ | | Intermediate electrode |
| ⑤ | | External electrode |

■ Dimensions in mm (not to scale)



| Size Code | Size (EIA) | L | W | T | L ₁ , L ₂ |
|-----------|------------|--|--|--|---------------------------------|
| 0 | 0402 | 1.00±0.05 | 0.50±0.05 | 0.50±0.05 | 0.2±0.1 |
| | | 1.00 ^{+0.15} _{-0.05} | 0.50 ^{+0.15} _{-0.05} | 0.50 ^{+0.15} _{-0.05} | |
| 1 | 0603 | 1.6±0.1 | 0.8±0.1 | 0.8±0.1 | 0.3±0.2 |
| | | 1.60±0.15 | 0.80±0.15 | 0.80±0.15 | |
| 2 | 0805 | 2.0±0.1 | 1.25±0.10 | 0.85±0.10 | 0.50±0.25 |
| | | 2.00±0.15 | 1.25±0.15 | 1.25±0.15 | |
| | | 2.0±0.2 | 1.25±0.20 | 1.25±0.20 | |
| G | | 2.00±0.15 | 1.25±0.15 | 0.85±0.10 | |
| 3 | 1206 | 3.20±0.15 | 1.60±0.15 | 0.85±0.10 | 0.6±0.3 |
| | | | | 1.15±0.10 | |
| D | | 3.2±0.2 | 1.6±0.2 | 0.85±0.10 | |
| M | | | | 1.15±0.10 | |

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use. Should a safety concern arise regarding this product, please be sure to contact us immediately.

■ Packaging Styles and Standard Packaging Quantities

Quantity : pcs./reel

| Packaging Style Code | Packaging Styles | Size Thickness | 0402 | 0603 | 0805 | | 1206 | | |
|----------------------|------------------|--------------------------------|--------|-------|--------|--------|--------|--------|-------|
| | | | T=0.5 | T=0.8 | T=0.85 | T=1.25 | T=0.85 | T=1.15 | T=1.6 |
| E | φ180 reel | Paper taping (Pitch : 2 mm) | 10,000 | — | — | — | — | — | — |
| V | | Paper taping (Pitch : 4 mm) | — | 4,000 | 4,000 | — | 4,000 | — | — |
| F | | Embossed taping (Pitch : 4 mm) | — | — | — | 3,000 | — | 3,000 | — |
| Y | | | — | — | — | — | — | — | 2,000 |

φ330 reel and Bulk case Type : Please contact us.

■ Temperature Characteristics

● Class 2

| Temperature Characteristic Code | Temperature Characteristics | Capacitance Change | Measurement Temperature Range | Reference Temperature |
|---------------------------------|-----------------------------|--------------------|-------------------------------|-----------------------|
| B, X | B | ±10 % | -25 to 85 °C | 20 °C |
| | X7R | ±15 % | -55 to 125 °C | 25 °C |
| | X5R | ±15 % | -55 to 85 °C | 25 °C |
| F | F | +30, -80 % | -25 to 85 °C | 20 °C |
| | Y5V | +22, -82 % | -30 to 85 °C | 25 °C |

For applicable "Temperature Characteristics", see the lists of standard products on page 6 to 7.

■ Rated Voltage

| Code | 1H | 1E | 1C | 1A | 0J |
|---------------|---------|---------|---------|---------|----------|
| Rated Voltage | DC 50 V | DC 25 V | DC 16 V | DC 10 V | DC 6.3 V |

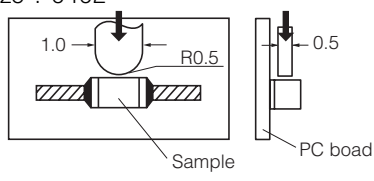
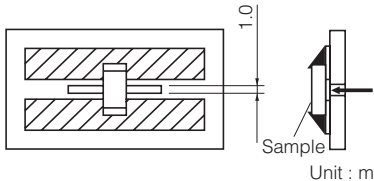
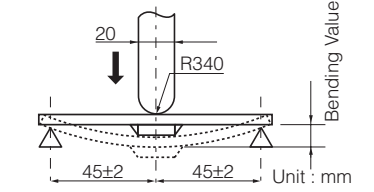
■ Nominal Capacitance

| Ex. | 105 | 225 | 106 | 226 |
|---------------------|------------------------|--------------------------|--------------------------|--------------------------|
| Nominal Capacitance | 1,000,000 pF (1 μF) | 2,200,000 pF (2.2 μF) | 10,000,000 pF (10 μF) | 22,000,000 pF (22 μF) |

■ Capacitance Tolerance

| Class | Temperature Characteristics | Capacitance Tolerance Code | Capacitance Tolerance |
|-------|-----------------------------|----------------------------|-----------------------|
| 2 | B, X7R, X5R | K | ±10 % |
| | | M | ±20 % |
| | F, Y5V | Z | +80, -20 % |

■ Specifications and Testing Methods

| Item | Specification | Test Method | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|---------------------|---------|---------|---------------------|------------|-------------|-------------------|--------------|--------------|-------|---------|--------|--------|--------|--------|----------------------|-------|-------|-------|-------|---------|-------|--------|-------|-------|---------|-------|-------|-------|-------|
| Operating Temperature Range | Temp. Char. B, X7R : -55 to 125 °C Temp. Char. B, X5R : -55 to 85 °C Temp. Char. F, Y5V : -30 to 85 °C | ————— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dielectric Withstanding Voltage | No dielectric breakdown and/or damage | Test voltage : Rated voltage x250 % Duration:1 to 5 s. Charge / Discharge current: 50 mA max. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Insulation Resistance (I.R.) | 500/C (MΩ) min. Note : 100/C(MΩ)min. for DC 10 V max. C : Nominal Cap. in μF | Measuring voltage : Rated voltage Duration : 60±5 s Charge / Discharge current: 50 mA max. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance | Within the specified tolerance | Measuring temperature: 20±2 °C Preconditioning: The capacitors shall be kept in temperature of 150 +0/-10 °C for 1 hour and subject to standard condition* 48±4 hours before initial measurement. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor (tan δ) | 0.2 max. Please see the technical specifications for details. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Nominal capacitance</th> <th>C≤10 μF</th> <th>C>10 μF</th> </tr> </thead> <tbody> <tr> <td>Measuring frequency</td> <td>1 kHz±10 %</td> <td>120 Hz±20 %</td> </tr> <tr> <td>Measuring voltage</td> <td>1.0±0.2 Vrms</td> <td>0.5±0.2 Vrms</td> </tr> </tbody> </table> | | | Nominal capacitance | C≤10 μF | C>10 μF | Measuring frequency | 1 kHz±10 % | 120 Hz±20 % | Measuring voltage | 1.0±0.2 Vrms | 0.5±0.2 Vrms | | | | | | | | | | | | | | | | | | | | | |
| Nominal capacitance | C≤10 μF | C>10 μF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Measuring frequency | 1 kHz±10 % | 120 Hz±20 % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Measuring voltage | 1.0±0.2 Vrms | 0.5±0.2 Vrms | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temperature Characteristics | Temperature Characteristics B : ±10 % X7R : ±15 % X5R : ±15 % F : +30, -80 % Y5V : +22, -82 % | Maximum capacitance change at stages 1 to 5 <table border="1"> <thead> <tr> <th>Temp. Char.</th> <th>B, F</th> <th>X7R</th> <th>X5R</th> <th>Y5V</th> </tr> </thead> <tbody> <tr> <td>Stage 1</td> <td>20 °C</td> <td>25 °C</td> <td>25 °C</td> <td>25 °C</td> </tr> <tr> <td>Stage 2</td> <td>-25 °C</td> <td>-55 °C</td> <td>-55 °C</td> <td>-30 °C</td> </tr> <tr> <td>Stage 3 (Ref. Temp.)</td> <td>20 °C</td> <td>25 °C</td> <td>25 °C</td> <td>25 °C</td> </tr> <tr> <td>Stage 4</td> <td>85 °C</td> <td>125 °C</td> <td>85 °C</td> <td>85 °C</td> </tr> <tr> <td>Stage 5</td> <td>20 °C</td> <td>25 °C</td> <td>25 °C</td> <td>25 °C</td> </tr> </tbody> </table> See the technical specifications for details such as measuring voltage. | Temp. Char. | B, F | X7R | X5R | Y5V | Stage 1 | 20 °C | 25 °C | 25 °C | 25 °C | Stage 2 | -25 °C | -55 °C | -55 °C | -30 °C | Stage 3 (Ref. Temp.) | 20 °C | 25 °C | 25 °C | 25 °C | Stage 4 | 85 °C | 125 °C | 85 °C | 85 °C | Stage 5 | 20 °C | 25 °C | 25 °C | 25 °C |
| Temp. Char. | B, F | X7R | X5R | Y5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage 1 | 20 °C | 25 °C | 25 °C | 25 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage 2 | -25 °C | -55 °C | -55 °C | -30 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage 3 (Ref. Temp.) | 20 °C | 25 °C | 25 °C | 25 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage 4 | 85 °C | 125 °C | 85 °C | 85 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage 5 | 20 °C | 25 °C | 25 °C | 25 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adhesion | Terminal electrodes shall be free from peeling or signs of peeling. | Applied force : 5 N Duration : 10 s Size : 0402  Size : 0603 to 1206  Unit : mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bending Strength | Appearance: No mechanical damage Capacitance change: Temp. Char. B, X7R, X5R: within ±12.5 % F, Y5V: within ±30 % | Bending value :1 mm Bending speed : 1 mm/s  Unit : mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vibration Proof | Appearance : No mechanical damage. Capacitance : Within the specified tolerance tanδ : Initial standard value | Total amplitude : 1.5 mm Vibration frequency : 10 to 55 to 10 Hz for 1 min 3 perpendicular directions for 2 hours each, a total of 6 hours | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

*Standard condition : Temperature 15 to 35 °C, Relative humidity 45 to 75 %

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.
Should a safety concern arise regarding this product, please be sure to contact us immediately.

02 Dec. 2008

| Item | Specification | Test Method | | | | | | | | | | | | |
|------------------------------|--|---|-------------|------------|----------------|-----------|---|-----------|-------------|-------------|---|------------|-------------|-------------|
| Resistance to Soldering Heat | Appearance : No mechanical damage Capacitance change : Temp. Char. B, X7R, X5R : within ± 7.5 % F, Y5V : within ± 20 % $\tan\delta$: Initial standard value IR : Initial standard value Withstand voltage : No dielectric breakdown or damage | Soldering bath method Preconditioning : Heat treatment ^(*1) Solder temperature : 270 ± 5 °C Dipping period : 3.0 ± 0.5 s Preheat condition : <table border="1"> <thead> <tr> <th>Order</th> <th>Temp. (°C)</th> <th>Size 0805 max.</th> <th>Size 1206</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>80 to 100</td> <td>120 to 180s</td> <td>300 to 360s</td> </tr> <tr> <td>2</td> <td>150 to 200</td> <td>120 to 180s</td> <td>300 to 360s</td> </tr> </tbody> </table> Recovery (Standard condition) : 48 ± 4 h | Order | Temp. (°C) | Size 0805 max. | Size 1206 | 1 | 80 to 100 | 120 to 180s | 300 to 360s | 2 | 150 to 200 | 120 to 180s | 300 to 360s |
| Order | Temp. (°C) | Size 0805 max. | Size 1206 | | | | | | | | | | | |
| 1 | 80 to 100 | 120 to 180s | 300 to 360s | | | | | | | | | | | |
| 2 | 150 to 200 | 120 to 180s | 300 to 360s | | | | | | | | | | | |
| Solderability | More than 95 % of the soldered area of both terminal electrodes shall be covered with fresh solder. | Soldering bath method Solder temperature : 230 ± 5 °C Dipping period : 4 ± 1 s Solder : H63A (JIS-Z-3282) | | | | | | | | | | | | |
| Temperature Cycle | Appearance : No mechanical damage Capacitance change : Temp. Char. B, X7R, X5R : within ± 7.5 % F, Y5V : within ± 20 % $\tan\delta$: Initial standard value IR : Initial standard value Withstand voltage : No dielectric breakdown and/or damage | Preconditioning : Heat treatment ^(*1) Step 1: Minimum operating temp. 30 ± 3 min Step 2: Room temp. 3 min max. Step 3: Maximum operating temp. 30 ± 3 min Step 4: Room temp. 3 min max. Number of cycles : 5 cycles Recovery(Standard condition) : 48 ± 4 h | | | | | | | | | | | | |
| Damp Heat (steady state) | Appearance : No mechanical damage Capacitance change : Temp. Char. B, X7R, X5R : within ± 20 % F, Y5V : within ± 30 % $\tan\delta$: Temp. Char. B, X7R, X5R : 0.25 max. F, Y5V : 0.3 max. IR : $50/C$ (M Ω) min. Note : $10/C$ (M Ω) min. for rated vol. DC 10 V max. C:Nominal cap. in μ F Please see the technical specifications for details. | Preconditioning : Heat treatment ^(*1) Temperature : 40 ± 2 °C Relative humidity : 90 to 95 % Test period : 500+24/0 h Recovery(Standard condition) : 48 ± 4 h | | | | | | | | | | | | |
| Damp Heat Load | Appearance : No mechanical damage Capacitance change : Temp. Char. B, X7R, X5R : within ± 20 % F, Y5V : within ± 30 % $\tan\delta$: Temp. Char. B, X7R, X5R : 0.25 max. F, Y5V : 0.3 max. IR : $25/C$ (M Ω) min. Note : $5/C$ (M Ω) min. for rated vol. DC 10 V max. C:Nominal cap. in μ F Please see the technical specifications for details. | Preconditioning : Voltage treatment ^(*2) Temperature : 40 ± 2 °C Relative humidity : 90 to 95 % Applied voltage : Rated voltage Charge/discharge current : 50 mA max. Test period : 500+24/0 h Recovery(Standard condition) : 48 ± 4 h | | | | | | | | | | | | |
| High Temperature Load | Appearance : no mechanical damage Capacitance change : Temp. Char. B, X7R, X5R : within ± 20 % F, Y5V : within ± 30 % $\tan\delta$: Temp. Char. B, X7R, X5R : 0.25 max. F, Y5V : 0.3 max. IR : $50/C$ (M Ω) min. Note : $10/C$ (M Ω) min. for rated vol. DC 10 V max. C:Nominal cap. in μ F Please see the technical specifications for details. | Preconditioning : Voltage treatment ^(*2) Temperature : Maximum operation temp. ± 3 °C Applied voltage : (1)Rated voltage $\times 200$ % (2)Rated voltage $\times 150$ % (3)Rated voltage $\times 100$ % Please see the technical specifications for details. Charge/discharge current : 50 mA max. Test period : 1000+48/0 h Recovery (Standard condition) : 48 ± 4 h | | | | | | | | | | | | |

(*1) Heat treatment : 1 h of heat treatment at $150 \pm 0/-10$ °C followed by 48 ± 4 h recovery under standard conditions.

(*2) Voltage treatment : 1 h of voltage treatment under the specified temperature and voltage for testing followed by 48 ± 4 h of recovery under standard conditions.

■ Standard Products for EIA Size "0402", Taped Version

● Class 2

◆ Temperature Characteristic Code : B (Temperature Characteristics : X5R)

| Rated Voltage | | DC 16 V | | | DC 10 V | | | DC 6.3 V | | |
|------------------|-------------------------|--------------|-------------|-----------------|--------------|-------------|-----------------|--------------|-------------|-----------------|
| Capacitance (μF) | Capacitance Tolerance | Part No. | Dim. T (mm) | Temp. Char. X5R | Part No. | Dim. T (mm) | Temp. Char. X5R | Part No. | Dim. T (mm) | Temp. Char. X5R |
| 1 | ±10 %(K) or ±20 %(M) | ECJ0EB1C105M | 0.5* | ○ | ECJ0EB1A105□ | 0.5 | ○ | ECJ0EB0J105□ | 0.5 | ○ |
| 2.2 | | | | | | | | ECJ0EB0J225M | 0.5 | ○ |
| 4.7 | | | | | | | | ECJ0EB0J475M | 0.5* | ○ |

□ : Capacitance tolerance code : "□" for "K" or "M"

Dimensional tolerance of L, W, T : ±0.05 mm for no mark, ± 0.05 mm for "*" mark.

Standard packaging quantity of Packaging Style Code "E" (T = 0.5 mm) : 10,000 pcs./reel.

Avoid flow soldering.

◆ Temperature Characteristic Code : F (Temperature Characteristics : F, Y5V)

| Rated Voltage | | DC 6.3 V | | |
|------------------|-----------------------|--------------|-------------|-------------------|
| Capacitance (μF) | Capacitance Tolerance | Part No. | Dim. T (mm) | Temp. Char. F Y5V |
| 1 | +80, -20 % (Z) | ECJ0EF0J105Z | 0.5 | ○ ○ |

Standard packaging quantity of Packaging Style Code "E" (T = 0.5 mm) : 10,000 pcs./reel.

Recommend soldering method : Reflow soldering.

■ Standard Products for EIA Size "0603", Taped Version

● Class 2

◆ Temperature Characteristic Code : B (Temperature Characteristics : X5R)

| Rated Voltage | | DC 25 V | | | DC 16 V | | | DC 10 V | | | DC 6.3 V | | |
|------------------|----------------------------|--------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|
| Capacitance (μF) | Capacitance Tolerance | Part No. | Dim. T (mm) | Temp. Char. X5R | Part No. | Dim. T (mm) | Temp. Char. X5R | Part No. | Dim. T (mm) | Temp. Char. X5R | Part No. | Dim. T (mm) | Temp. Char. X5R |
| 1 | ±10 %(K) or ±20 %(M) | ECJ1VB1E105□ | 0.8 | ○ | ECJ1VB1C105□ | 0.8 | ○ | ECJ1VB1A105□ | 0.8 | ○ | ECJ1VB0J105□ | 0.8 | ○ |
| 2.2 | | | | | ECJ1VB1C225□* | 0.8 | ○ | ECJ1VB1A225□* | 0.8 | ○ | ECJ1VB0J225□ | 0.8 | ○ |
| 4.7 | | | | | ECJ1VB1C475□* | 0.8** | ○ | ECJ1VB1A475□* | 0.8 | ○ | ECJ1VB0J475□* | 0.8 | ○ |
| 10 | | | | | | | | ECJ1VB1A106M* | 0.8** | ○ | ECJ1VB0J106M* | 0.8** | ○ |

□ : Capacitance tolerance code : "□" for "K" or "M"

Standard packaging quantity of Packaging Style Code "V" (T = 0.8 mm) : 4,000 pcs./reel.

* : Avoid flow soldering.

** : "L", "W", "T" Dimension Tolerance ±0.15 mm

◆ Temperature Characteristic Code : F (Temperature Characteristics : F, Y5V)

| Rated Voltage | | DC 25 V | | | DC 16 V | | | DC 10 V | | | DC 6.3 V | | |
|------------------|-----------------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|-------------------|--------------|-------------|-------------------|
| Capacitance (μF) | Capacitance Tolerance | Part No. | Dim. T (mm) | Temp. Char. F | Part No. | Dim. T (mm) | Temp. Char. F | Part No. | Dim. T (mm) | Temp. Char. F Y5V | Part No. | Dim. T (mm) | Temp. Char. F Y5V |
| 1 | +80, | ECJ1VF1E105Z | 0.8 | ○ | ECJ1VF1C105Z | 0.8 | ○ | ECJ1VF1A105Z | 0.8 | ○ ○ | | | |
| 2.2 | -20 % (Z) | | | | | | | ECJ1VF1A225Z | 0.8 | ○ ○ | ECJ1VF0J225Z | 0.8 | ○ ○ |

Standard packaging quantity of Packaging Style Code "V" (T = 0.8 mm) : 4,000 pcs./reel.

■ Standard Products for EIA Size "0805", Taped Version

● Class 2

◆ Temperature Characteristic Code : B (Temperature Characteristics : B, X5R)

| Rated Voltage | | DC 25 V | | | DC 16 V | | | DC 10 V | | | DC 6.3 V | | |
|------------------|----------------------------|--------------|--------------|-----------------|--------------|--------------|-----------------|--------------|--------------|-------------------|--------------|--------------|-----------------|
| Capacitance (μF) | Capacitance Tolerance | Part No. | Dim. T (mm) | Temp. Char. X5R | Part No. | Dim. T (mm) | Temp. Char. X5R | Part No. | Dim. T (mm) | Temp. Char. B X5R | Part No. | Dim. T (mm) | Temp. Char. X5R |
| 1 | ±10 %(K) or ±20 %(M) | ECJ2FB1E105□ | 1.25* | ○ | ECJ2FB1C105□ | 1.25* | ○ | ECJ2FB1A105□ | 1.25 | ○ ○ | | | |
| 2.2 | | | | | ECJ2FB1C225□ | 1.25* | ○ | ECJ2FB1A225□ | 1.25* | — ○ | ECJ2FB0J225□ | 1.25 | ○ |
| 4.7 | | | ECJ2FB1E475□ | 1.25* | ○ | ECJ2FB1C475□ | 1.25* | ○ | ECJ2FB1A475□ | 1.25* | — ○ | ECJ2FB0J475□ | 1.25* |
| 10 | | | | | ECJ2FB1C106□ | 1.25** | ○ | ECJ2FB1A106□ | 1.25** | — ○ | ECJ2FB0J106□ | 1.25** | ○ |
| 22 | | | | | | | | ECJ2FB1A226M | 1.25** | — ○ | ECJ2FB0J226M | 1.25** | ○ |

□ : Capacitance tolerance code : "□" for "K" or "M"

Dimensional tolerance of L, W, T : L, W : ±0.1 mm for no mark, ±0.15 mm for "*" mark, ±0.2 mm for "**" mark.

Standard packaging quantity of Packaging Style Code "F" (T = 1.25 mm) : 3,000 pcs./reel.

Avoid flow soldering.

◆ Temperature Characteristic Code : F (Temperature Characteristics : F, Y5V)

| Rated Voltage | | DC 50 V | | | DC 16 V | | | DC 10 V | | | DC 10 V | | |
|------------------|-----------------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|-------------------|--------------|-------------|-------------------|
| Capacitance (μF) | Capacitance Tolerance | Part No. | Dim. T (mm) | Temp. Char. F | Part No. | Dim. T (mm) | Temp. Char. F | Part No. | Dim. T (mm) | Temp. Char. F Y5V | Part No. | Dim. T (mm) | Temp. Char. F Y5V |
| 1 | +80, -20 % (Z) | ECJ2FF1H105Z | 1.25* | ○ | ECJ2FF1E105Z | 1.25* | ○ | ECJ2VF1C105Z | 0.85 | ○ ○ | | | |
| 2.2 | | | | | ECJ2FF1E225Z | 1.25* | ○ | ECJGVF1C225Z | 0.85 | ○ ○ | | | |
| 4.7 | | | | | | | | ECJGVF1C475Z | 0.85 | ○ ○ | ECJGVF1A475Z | 0.85 | ○ ○ |
| 10 | | | | | | | | | | | ECJ2FF1A106Z | 1.25* | ○ ○ |

Dimensional tolerance of L, W, T : L, W : ±0.15 mm / T : ±0.1 mm for no mark, ±0.15 mm for "*" mark.

Standard packaging quantity of Packaging Style Code "V" (T = 0.85 mm) : 4,000 pcs./reel, "F" (T = 1.25 mm) : 3,000 pcs./reel.

Soldering method of dimension T > 1 mm: Avoid flow soldering.

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.
Should a safety concern arise regarding this product, please be sure to contact us immediately.

■ Standard Products for EIA Size "1206", Taped Version

● Class 2

◆ Temperature Characteristic Code : B (Temperature Characteristics : B, X7R, X5R)

| Rated Voltage | DC 25 V | | | | DC 16 V | | | | DC 10 V | | | | DC 6.3 V | | | | |
|---------------|------------------------------|--------------|-------------|-----------------------|--------------|-------------|-----------------------|--------------|-------------|-----------------------|--------------|-------------|-----------------------|----------|-------------|-----------------|--|
| | Capacitance Tolerance | Part No. | Dim. T (mm) | Temp. Char. B X7R X5R | Part No. | Dim. T (mm) | Temp. Char. B X7R X5R | Part No. | Dim. T (mm) | Temp. Char. B X7R X5R | Part No. | Dim. T (mm) | Temp. Char. B X7R X5R | Part No. | Dim. T (mm) | Temp. Char. X5R | |
| 1 | ±10 % (K) or ±20 % (M) | ECJ3YB1E105□ | 1.6 | ○ ○ ○ | ECJ3FB1C105□ | 1.15* | ○ ○ ○ | | | | | | | | | | |
| 2.2 | | ECJ3YB1E225□ | 1.6 | — — ○ | ECJ3YB1C225□ | 1.6 | ○ ○ ○ | ECJ3YB1A225□ | 1.6 | ○ ○ ○ | | | | | | | |
| 4.7 | | ECJ3YB1E475□ | 1.6 | — — ○ | ECJ3YB1C475□ | 1.6 | — — ○ | ECJ3YB1A475□ | 1.6 | — — ○ | ECJ3YB0J475□ | 1.6 | ○ | | | | |
| 10 | | ECJ3YB1E106□ | 1.6 | — — ○ | ECJ3YB1C106□ | 1.6 | — — ○ | ECJ3YB1A106□ | 1.6 | — — ○ | ECJDV50J106M | 0.85** | ○ | | | | |
| 22 | | | | | ECJ3YB1C226M | 1.6 | — — ○ | ECJ3YB1A226M | 1.6 | — — ○ | ECJDV50J226M | 0.85** | ○ | | | | |

□ : Capacitance tolerance code : "□" for "K" or "M"

Dimensional tolerance of L, W, T: ±0.2 mm for no mark, L, W: ±0.15 mm / T: ±0.1 mm for "*" mark, L, W: ±0.2 mm / T: ±0.1 mm for "**" mark.

Standard packaging quantity of Packaging Style Code "V" (T = 0.85 mm) : 4,000 pcs./reel, "F" (T = 1.15 mm) : 3,000 pcs./reel, "Y" (T = 1.6 mm) : 2,000 pcs./reel

Avoid flow soldering.

◆ High Temperature Series : Temperature Characteristic Code : B, X (Temperature Characteristics : B, Y7R)

| Rated Voltage | DC 50 V | | | | DC 25 V | | | | DC 16 V | | | | DC 10 V | | | | |
|---------------|------------------------------|--------------|-------------|-------------------|--------------|-------------|-------------------|--------------|-------------|-------------------|--------------|-------------|-------------------|----------|-------------|-------------------|--|
| | Capacitance Tolerance | Part No. | Dim. T (mm) | Temp. Char. B Y7R | Part No. | Dim. T (mm) | Temp. Char. B Y7R | Part No. | Dim. T (mm) | Temp. Char. B Y7R | Part No. | Dim. T (mm) | Temp. Char. B Y7R | Part No. | Dim. T (mm) | Temp. Char. B Y7R | |
| 1 | ±10 % (K) or ±20 % (M) | ECJ3YX1H105□ | 1.6 | ○ ○ ○ | ECJ3YB1E105□ | 1.6 | ○ ○ ○ | ECJ3FB1C105□ | 1.15* | ○ ○ ○ | | | | | | | |
| 2.2 | | | | | | | | ECJ3YB1C225□ | 1.6 | ○ ○ ○ | ECJ3YB1A225□ | 1.6 | ○ ○ ○ | | | | |
| 4.7 | | | | | | | | ECJ3YX1C475□ | 1.6 | ○ ○ ○ | | | | | | | |
| 10 | | | | | | | | ECJ3YX1C106□ | 1.6 | ○ ○ ○ | | | | | | | |

□ : Capacitance tolerance code : "□" for "K" or "M"

Dimensional tolerance of L, W, T: ±0.2 mm for no mark, L, W: ±0.15 mm / T: ±0.1 mm for "*" mark.

Standard packaging quantity of Packaging Style Code "F" (T = 1.15 mm) : 3,000 pcs./reel, "Y" (T = 1.6 mm) : 2,000 pcs./reel

Avoid flow soldering.

◆ Temperature Characteristic Code : F (Temperature Characteristics : F, Y5V)

| Rated Voltage | DC 50 V | | | | DC 25 V | | | | DC 16 V | | | | DC 10 V | | | |
|---------------|-----------------------|--------------|-------------|---------------|--------------|-------------|-------------------|--------------|-------------|-------------------|--------------|-------------|-------------------|----------|-------------|-------------------|
| | Capacitance Tolerance | Part No. | Dim. T (mm) | Temp. Char. F | Part No. | Dim. T (mm) | Temp. Char. F Y5V | Part No. | Dim. T (mm) | Temp. Char. F Y5V | Part No. | Dim. T (mm) | Temp. Char. F Y5V | Part No. | Dim. T (mm) | Temp. Char. F Y5V |
| 1 | +80, -20 % (Z) | ECJ3FF1H105Z | 1.15* | ○ | ECJ3FF1E105Z | 1.15* | ○ ○ ○ | ECJ3VF1C105Z | 0.85* | ○ ○ ○ | | | | | | |
| 2.2 | | | | | ECJ3FF1E225Z | 1.15* | ○ ○ ○ | ECJ3VF1C225Z | 0.85* | ○ ○ ○ | | | | | | |
| 4.7 | | | | | ECJ3FF1E475Z | 1.15* | ○ — | ECJ3FF1C475Z | 1.15* | ○ ○ ○ | | | | | | |
| 10 | | | | | ECJ3YF1E106Z | 1.6 | ○ — | ECJMFF1C106Z | 1.15** | ○ ○ ○ | ECJMFF1A106Z | 1.15** | ○ ○ ○ | | | |
| 22 | | | | | | | | | | | ECJMFF1A226Z | 1.15** | ○ ○ ○ | | | |

Dimensional tolerance of L, W, T: ±0.2 mm for no mark, L, W: ±0.15 mm / T: ±0.1 mm for "*" mark, L, W: ±0.2 mm / T: ±0.1 mm for "**" mark.

Standard packaging quantity of Packaging Style Code "V" (T = 0.85 mm) : 4,000 pcs./reel, "F" (T = 1.15 mm) : 3,000 pcs./reel, "Y" (T = 1.6 mm) : 2,000 pcs./reel

Avoid flow soldering.

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