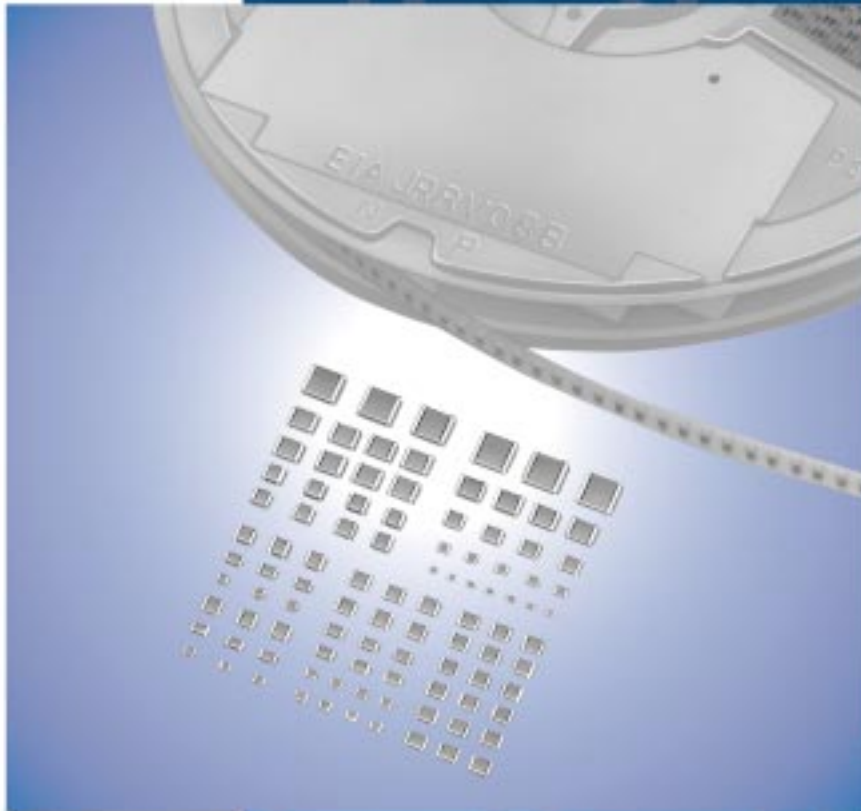


Chip Monolithic Ceramic Capacitors



● Part Numbering

Chip Monolithic Ceramic Capacitors

(Part Number)

| | | | | | | | | | |
|----|---|----|---|----|----|-----|---|-----|---|
| GR | M | 18 | 8 | B1 | 1H | 102 | K | A01 | D |
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Product ID

② Series

| Product ID | Code | Series |
|------------|------|---|
| GR | J | Soft Termination Type |
| | M | Tin Plated Layer |
| | 4 | Only for Information Devices / Tip & Ring |
| | 7 | Only for Camera Flash Circuit |
| GQ | M | High Frequency for Flow/Reflow Soldering |
| GM | A | Monolithic Microchip |
| | D | For Bonding |
| GN | M | Capacitor Array |
| LL | L | Low ESL Type |
| | R | Controlled ESR Low ESL Type |
| | A | 8-termination Low ESL Type |
| | M | 10-termination Low ESL Type |
| GJ | M | High Frequency Low Loss Type |
| GA | 2 | For AC250V (r.m.s.) |
| | 3 | Safety Standard Certified Type |

③ Dimensions (L×W)


| Code | Dimensions (L×W) | EIA |
|------|------------------|--------|
| 02 | 0.4×0.2mm | 01005 |
| 03 | 0.6×0.3mm | 0201 |
| 05 | 0.5×0.5mm | 0202 |
| 08 | 0.8×0.8mm | 0303 |
| 0D | 0.38×0.38mm | 015015 |
| 0M | 0.9×0.6mm | 0302 |
| 15 | 1.0×0.5mm | 0402 |
| 18 | 1.6×0.8mm | 0603 |
| 1M | 1.37×1.0mm | 0504 |
| 21 | 2.0×1.25mm | 0805 |
| 22 | 2.8×2.8mm | 1111 |
| 31 | 3.2×1.6mm | 1206 |
| 32 | 3.2×2.5mm | 1210 |
| 42 | 4.5×2.0mm | 1808 |
| 43 | 4.5×3.2mm | 1812 |
| 52 | 5.7×2.8mm | 2211 |
| 55 | 5.7×5.0mm | 2220 |


④ Dimension (T) (Except GNM)

| Code | Dimension (T) |
|------|----------------------------------|
| 2 | 0.2mm |
| 3 | 0.3mm |
| 5 | 0.5mm |
| 6 | 0.6mm |
| 7 | 0.7mm |
| 8 | 0.8mm |
| 9 | 0.85mm |
| A | 1.0mm |
| B | 1.25mm |
| C | 1.6mm |
| D | 2.0mm |
| E | 2.5mm |
| F | 3.2mm |
| M | 1.15mm |
| N | 1.35mm |
| Q | 1.5mm |
| R | 1.8mm |
| S | 2.8mm |
| X | Depends on individual standards. |

④ Elements (GNM Only)

| Code | Elements |
|------|------------|
| 2 | 2-elements |
| 4 | 4-elements |

Continued on the following page. 

 Continued from the preceding page.

⑤ Temperature Characteristics

| Temperature Characteristic Codes | | | Temperature Characteristics | | | Operating Temperature Range |
|----------------------------------|-----------------|-----------------------|-----------------------------|---|---------------------|-----------------------------|
| Code | Public STD Code | Reference Temperature | Temperature Range | Capacitance Change or Temperature Coefficient | | |
| 1X | SL *1 | JIS | 20°C | 20 to 85°C | +350 to -1000ppm/°C | -55 to 125°C |
| 2C | CH *1 | JIS | 20°C | 20 to 125°C | 0±60ppm/°C | -55 to 125°C |
| 2P | PH *1 | JIS | 20°C | 20 to 85°C | -150±60ppm/°C | -25 to 85°C |
| 2R | RH *1 | JIS | 20°C | 20 to 85°C | -220±60ppm/°C | -25 to 85°C |
| 2S | SH *1 | JIS | 20°C | 20 to 85°C | -330±60ppm/°C | -25 to 85°C |
| 2T | TH *1 | JIS | 20°C | 20 to 85°C | -470±60ppm/°C | -25 to 85°C |
| 3C | CJ *1 | JIS | 20°C | 20 to 125°C | 0±120ppm/°C | -55 to 125°C |
| 3P | PJ *1 | JIS | 20°C | 20 to 85°C | -150±120ppm/°C | -25 to 85°C |
| 3R | RJ *1 | JIS | 20°C | 20 to 85°C | -220±120ppm/°C | -25 to 85°C |
| 3S | SJ *1 | JIS | 20°C | 20 to 85°C | -330±120ppm/°C | -25 to 85°C |
| 3T | TJ *1 | JIS | 20°C | 20 to 85°C | -470±120ppm/°C | -25 to 85°C |
| 3U | UJ *1 | JIS | 20°C | 20 to 85°C | -750±120ppm/°C | -25 to 85°C |
| 4C | CK *1 | JIS | 20°C | 20 to 125°C | 0±250ppm/°C | -55 to 125°C |
| 5C | COG *1 | EIA | 25°C | 25 to 125°C | 0±30ppm/°C | -55 to 125°C |
| 5G | X8G *1 | EIA | 25°C | 25 to 150°C | 0±30ppm/°C | -55 to 150°C |
| 6C | COH *1 | EIA | 25°C | 25 to 125°C | 0±60ppm/°C | -55 to 125°C |
| 6P | P2H *1 | EIA | 25°C | 25 to 85°C | -150±60ppm/°C | -55 to 125°C |
| 6R | R2H *1 | EIA | 25°C | 25 to 85°C | -220±60ppm/°C | -55 to 125°C |
| 6S | S2H *1 | EIA | 25°C | 25 to 85°C | -330±60ppm/°C | -55 to 125°C |
| 6T | T2H *1 | EIA | 25°C | 25 to 85°C | -470±60ppm/°C | -55 to 125°C |
| 7U | U2J *1 | EIA | 25°C | 25 to 125°C *6 | -750±120ppm/°C | -55 to 125°C |
| B1 | B *2 | JIS | 20°C | -25 to 85°C | ±10% | -25 to 85°C |
| B3 | B | JIS | 20°C | -25 to 85°C | ±10% | -25 to 85°C |
| C7 | X7S | EIA | 25°C | -55 to 125°C | ±22% | -55 to 125°C |
| C8 | X6S | EIA | 25°C | -55 to 105°C | ±22% | -55 to 105°C |
| D7 | X7T | EIA | 25°C | -55 to 125°C | +22, -33% | -55 to 125°C |
| D8 | X6T | EIA | 25°C | -55 to 105°C | +22, -33% | -55 to 105°C |
| E7 | X7U | EIA | 25°C | -55 to 125°C | +22, -56% | -55 to 125°C |
| F1 | F *2 | JIS | 20°C | -25 to 85°C | +30, -80% | -25 to 85°C |
| F5 | Y5V | EIA | 25°C | -30 to 85°C | +22, -82% | -30 to 85°C |
| L8 | X8L | *3 | 25°C | -55 to 150°C | +15, -40% | -55 to 150°C |
| R1 | R *2 | JIS | 20°C | -55 to 125°C | ±15% | -55 to 125°C |
| R3 | R | JIS | 20°C | -55 to 125°C | ±15% | -55 to 125°C |
| R6 | X5R | EIA | 25°C | -55 to 85°C | ±15% | -55 to 85°C |
| R7 | X7R | EIA | 25°C | -55 to 125°C | ±15% | -55 to 125°C |
| R9 | X8R | EIA | 25°C | -55 to 150°C | ±15% | -55 to 150°C |
| W0 | - | - | 25°C | -55 to 125°C | ±10% *4 | -55 to 125°C |
| | | | | | +22, -33% *5 | |

*1 Please refer to table for Capacitance Change under reference temperature.


*2 Capacitance change is specified with 50% rated voltage applied.

*3 Murata Temperature Characteristic Code.

*4 Apply DC350V bias.

*5 No DC bias.

*6 Rated Voltage 100Vdc max : 25 to 85°C

Continued on the following page. 

Continued from the preceding page.

●Capacitance Change from each temperature

JIS Code

| Murata Code | Capacitance Change from 20°C (%) | | | | | |
|-------------|----------------------------------|-------|-------|-------|-------|-------|
| | -55°C | | -25°C | | -10°C | |
| | Max. | Min. | Max. | Min. | Max. | Min. |
| 1X | - | - | - | - | - | - |
| 2C | 0.82 | -0.45 | 0.49 | -0.27 | 0.33 | -0.18 |
| 2P | - | - | 1.32 | 0.41 | 0.88 | 0.27 |
| 2R | - | - | 1.70 | 0.72 | 1.13 | 0.48 |
| 2S | - | - | 2.30 | 1.22 | 1.54 | 0.81 |
| 2T | - | - | 3.07 | 1.85 | 2.05 | 1.23 |
| 3C | 1.37 | -0.90 | 0.82 | -0.54 | 0.55 | -0.36 |
| 3P | - | - | 1.65 | 0.14 | 1.10 | 0.09 |
| 3R | - | - | 2.03 | 0.45 | 1.35 | 0.30 |
| 3S | - | - | 2.63 | 0.95 | 1.76 | 0.63 |
| 3T | - | - | 3.40 | 1.58 | 2.27 | 1.05 |
| 3U | - | - | 4.94 | 2.84 | 3.29 | 1.89 |
| 4C | 2.56 | -1.88 | 1.54 | -1.13 | 1.02 | -0.75 |

EIA Code

| Murata Code | Capacitance Change from 25°C (%) | | | | | |
|-------------|----------------------------------|-------|-------|-------|-------|-------|
| | -55°C | | -30°C | | -10°C | |
| | Max. | Min. | Max. | Min. | Max. | Min. |
| 5C/5G | 0.58 | -0.24 | 0.40 | -0.17 | 0.25 | -0.11 |
| 6C | 0.87 | -0.48 | 0.59 | -0.33 | 0.38 | -0.21 |
| 6P | 2.33 | 0.72 | 1.61 | 0.50 | 1.02 | 0.32 |
| 6R | 3.02 | 1.28 | 2.08 | 0.88 | 1.32 | 0.56 |
| 6S | 4.09 | 2.16 | 2.81 | 1.49 | 1.79 | 0.95 |
| 6T | 5.46 | 3.28 | 3.75 | 2.26 | 2.39 | 1.44 |
| 7U | 8.78 | 5.04 | 6.04 | 3.47 | 3.84 | 2.21 |


⑥ Rated Voltage

| Code | Rated Voltage |
|------|---|
| 0E | DC2.5V |
| 0G | DC4V |
| 0J | DC6.3V |
| 1A | DC10V |
| 1C | DC16V |
| 1E | DC25V |
| YA | DC35V |
| 1H | DC50V |
| 2A | DC100V |
| 2D | DC200V |
| 2E | DC250V |
| YD | DC300V |
| 2H | DC500V |
| 2J | DC630V |
| 3A | DC1kV |
| 3D | DC2kV |
| 3F | DC3.15kV |
| BB | DC350V (for Camera Flash Circuit) |
| E2 | AC250V |
| GC | X1/Y2; AC250V (Safety Standard Certified Type GC) |
| GF | Y2, X1/Y2; AC250V (Safety Standard Certified Type GF) |
| GD | Y3; AC250V (Safety Standard Certified Type GD) |
| GB | X2; AC250V (Safety Standard Certified Type GB) |

⑦ Capacitance

Expressed by three-digit alphanumerics. The unit is picofarad (pF). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two numbers. If there is a decimal point, it is expressed by the capital letter "R." In this case, all figures are significant digits.

| Ex.) Code | Capacitance |
|-----------|-------------|
| R50 | 0.5pF |
| 1R0 | 1.0pF |
| 100 | 10pF |
| 103 | 10000pF |

Continued on the following page. 

Please check the MURATA home page (<http://www.murata.com/>) if you cannot find the part number in the catalog.

Continued from the preceding page.

⑧ Capacitance Tolerance

| Code | Capacitance Tolerance | TC | Series | Capacitance Step | |
|----------|----------------------------------|---------------------|------------------------|------------------|-------------------------|
| W | ±0.05pF | CΔ | GRM/GJM | ≤9.9pF | 0.1pF |
| B | ±0.1pF | CΔ | GRM/GJM | ≤9.9pF | 0.1pF |
| | | | GQM | ≤1pF | 0.1pF |
| C | ±0.25pF | CΔ | GRM/GJM | ≤9.9pF | 0.1pF |
| | | except CΔ | GRM | ≤5pF | * 1pF |
| | | CΔ | GQM | ≤1pF | 0.1pF |
| D | ±0.5pF | CΔ | GRM/GJM | 5.1 to 9.9pF | 0.1pF |
| | | except CΔ | GRM | 5.1 to 9.9pF | * 1pF |
| | | CΔ | GQM | 5.1 to 9.9pF | 1pF Step and E24 Series |
| G | ±2% | CΔ | GJM | ≥10pF | E12 Series |
| | | CΔ | GQM | ≥10pF | E24 Series |
| J | ±5% | CΔ, SL, U2J | GRM/GA3 | ≥10pF | E12 Series |
| | | CΔ | GQM/GJM | ≥10pF | E24 Series |
| K | ±10% | B, R, X7R, X5R, ZLM | GRJ/GRM/GR7/GA3 | E6 Series | |
| | | C0G | GNM | E6 Series | |
| | | B, R, X7R, X5R, ZLM | GR4, GMD | E12 Series | |
| M | ±20% | B, R, X7R, X7S | GRM/GMA | E6 Series | |
| | | X5R, X7R, X7S | GNM | E3 Series | |
| | | X7R | GA2 | E3 Series | |
| | | X5R, X7R, X7S, X6S | LLL/LLR/LLA/LLM | E3 Series | |
| Z | +80%, -20% | F, Y5V | GRM | E3 Series | |
| R | Depends on individual standards. | | | | |

* E24 series is also available.

⑨ Individual Specification Code (Except LLR)

Expressed by three figures.

⑨ ESR (LLR Only)

| Code | ESR |
|------------|--------|
| E01 | 100mΩ |
| E03 | 220mΩ |
| E05 | 470mΩ |
| E07 | 1000mΩ |

⑩ Packaging

| Code | Packaging |
|----------|-----------------------------|
| L | ø180mm Embossed Taping |
| D | ø180mm Paper Taping |
| E | ø180mm Paper Taping (LLL15) |
| K | ø330mm Embossed Taping |
| J | ø330mm Paper Taping |
| F | ø330mm Paper Taping (LLL15) |
| B | Bulk |
| C | Bulk Case |
| T | Bulk Tray |

Please check the MURATA home page (<http://www.murata.com/>) if you cannot find the part number in the catalog.

Chip Monolithic Ceramic Capacitors



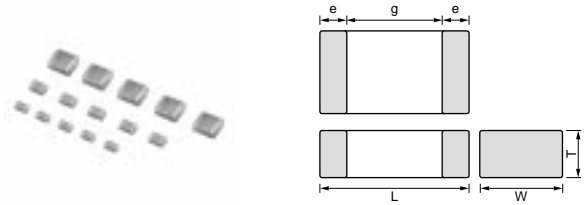
High Frequency GQM Series

■ Features

1. HiQ and low ESR at VHF, UHF, Microwave
2. Feature improvement, low power consumption for mobile telecommunication. (Base station, terminal, etc.)

■ Applications

High frequency circuit (Mobile telecommunication, etc.)



| Part Number | Dimensions (mm) | | | | |
|-------------------------|-----------------|------------|------------|------------|--------|
| | L | W | T | e | g min. |
| GQM187 | 1.6 ±0.15 | 0.8 ±0.15 | 0.7 ±0.1 | 0.2 to 0.5 | 0.5 |
| GQM188 | 1.6 ±0.1 | 0.8 ±0.1 | 0.8 ±0.1 | 0.2 to 0.5 | 0.5 |
| GQM219 (50,100V) | 2.0 ±0.1 | 1.25 ±0.1 | 0.85 ±0.1 | 0.2 to 0.7 | 0.7 |
| GQM219 (250V) | 2.0 ±0.15 | 1.25 ±0.15 | 0.85 ±0.15 | 0.2 to 0.7 | 0.7 |
| GQM22M | 2.8 ±0.5 | 2.8 ±0.4 | 1.15 ±0.2 | 0.3 min. | 1.0 |

For General
GRM Series

Array
GMM Series

Low ESL
LL□ Series

High-Q
GJM Series

High Frequency
GQM Series

Monolithic Microchip
GMA Series

For Bonding
GMD Series

Product Information

Capacitance Table

Temperature Compensating Type C0G(5C) Characteristics

| 7 | | ex.7: T Dimension [mm] | | | | | | |
|-------------|----------|------------------------|----------|----------|----------------------|----------|----------|---------------------|
| Capacitance | LxW [mm] | 1.6x0.8 (18) <0603> | | | 2.0x1.25 (21) <0805> | | | 2.0x2.5 (22) <0810> |
| | | Rated Voltage [Vdc] | 250 (2E) | 100 (2A) | 50 (1H) | 250 (2E) | 100 (2A) | 50 (1H) |
| 0.10pF(R10) | 7 | | | | | | | |
| 0.20pF(R20) | 7 | | | | | | | |
| 0.30pF(R30) | 7 | | | | | | | |
| 0.40pF(R40) | 7 | | | | | | | |
| 0.50pF(R50) | 7 | 8 | | | 9 | 9 | | M |
| 0.75pF(R75) | 7 | 8 | | | 9 | 9 | | M |
| 1.0pF(1R0) | 7 | 8 | | | 9 | 9 | | M |
| 1.1pF(1R1) | 7 | 8 | | | 9 | 9 | | M |
| 1.2pF(1R2) | 7 | 8 | | | 9 | 9 | | M |
| 1.3pF(1R3) | 7 | 8 | | | 9 | 9 | | M |
| 1.5pF(1R5) | 7 | 8 | | | 9 | 9 | | M |
| 1.6pF(1R6) | 7 | 8 | | | 9 | 9 | | M |
| 1.8pF(1R8) | 7 | 8 | | | 9 | 9 | | M |
| 2.0pF(2R0) | 7 | 8 | | | 9 | 9 | | M |
| 2.2pF(2R2) | 7 | 8 | | | 9 | 9 | | M |
| 2.4pF(2R4) | 7 | 8 | | | 9 | 9 | | M |
| 2.7pF(2R7) | 7 | 8 | | | 9 | 9 | | M |
| 3.0pF(3R0) | 7 | 8 | | | 9 | 9 | | M |
| 3.3pF(3R3) | 7 | 8 | | | 9 | 9 | | M |
| 3.6pF(3R6) | 7 | 8 | | | 9 | 9 | | M |
| 3.9pF(3R9) | 7 | 8 | | | 9 | 9 | | M |
| 4.0pF(4R0) | 7 | 8 | | | 9 | 9 | | M |
| 4.3pF(4R3) | 7 | 8 | | | 9 | 9 | | M |
| 4.7pF(4R7) | 7 | 8 | | | 9 | 9 | | M |
| 5.0pF(5R0) | 7 | 8 | | | 9 | 9 | | M |
| 5.1pF(5R1) | 7 | 8 | | | 9 | 9 | | M |
| 5.6pF(5R6) | 7 | 8 | | | 9 | 9 | | M |
| 6.0pF(6R0) | 7 | 8 | | | 9 | 9 | | M |
| 6.2pF(6R2) | 7 | 8 | | | 9 | 9 | | M |
| 6.8pF(6R8) | 7 | 8 | | | 9 | 9 | | M |
| 7.0pF(7R0) | 7 | | 8 | 9 | 9 | | | M |
| 7.5pF(7R5) | 7 | | 8 | 9 | 9 | | | M |
| 8.0pF(8R0) | 7 | | 8 | 9 | 9 | | | M |
| 8.2pF(8R2) | 7 | | 8 | 9 | 9 | | | M |
| 9.0pF(9R0) | 7 | | 8 | 9 | 9 | | | M |
| 9.1pF(9R1) | 7 | | 8 | 9 | 9 | | | M |
| 10pF(100) | 7 | | 8 | 9 | 9 | | | M |
| 11pF(110) | 7 | | 8 | 9 | 9 | | | M |
| 12pF(120) | 7 | | 8 | 9 | 9 | | | M |
| 13pF(130) | 7 | | 8 | 9 | 9 | | | M |
| 15pF(150) | 7 | | 8 | 9 | 9 | | | M |
| 16pF(160) | 7 | | 8 | 9 | 9 | | | M |
| 18pF(180) | 7 | | 8 | 9 | 9 | | | M |
| 20pF(200) | 7 | | 8 | 9 | | 9 | | M |
| 22pF(220) | 7 | | 8 | 9 | | 9 | | M |
| 24pF(240) | 7 | | 8 | 9 | | 9 | | M |
| 27pF(270) | 7 | | 8 | 9 | | 9 | | M |
| 30pF(300) | 7 | | 8 | 9 | | 9 | | M |
| 33pF(330) | 7 | | 8 | 9 | | 9 | | M |

| Capacitance | LxW [mm] | 1.6x0.8 (18) <0603> | | | 2.0x1.25 (21) <0805> | | | 2.0x2.5 (22) <0810> | |
|-------------|----------|---------------------|----------|----------|----------------------|----------|----------|---------------------|----------|
| | | Rated Voltage [Vdc] | 250 (2E) | 100 (2A) | 50 (1H) | 250 (2E) | 100 (2A) | 50 (1H) | 500 (2H) |
| 36pF(360) | 7 | | | | 8 | 9 | | 9 | M |
| 39pF(390) | 7 | | | | 8 | 9 | | 9 | M |
| 43pF(430) | 7 | | | | 8 | 9 | | 9 | M |
| 47pF(470) | 7 | | | | 8 | 9 | | 9 | M |
| 51pF(510) | | | | | 8 | 9 | | 9 | M |
| 56pF(560) | | | | | 8 | 9 | | 9 | M |
| 62pF(620) | | | | | 8 | 9 | | 9 | M |
| 68pF(680) | | | | | 8 | 9 | | 9 | M |
| 75pF(750) | | | | | 8 | 9 | | 9 | M |
| 82pF(820) | | | | | 8 | 9 | | 9 | M |
| 91pF(910) | | | | | 8 | 9 | | 9 | M |
| 100pF(101) | | | | | 8 | 9 | | 9 | M |

The part number code is shown in () and Unit is shown in []. < >: EIA [inch] Code

Temperature Compensating Type C0G(5C) Characteristics

| LxW [mm] | | 1.6x0.8(18)<0603> | |
|-------------------|------------|--------------------|--------------------|
| Rated Volt. [Vdc] | | 250(2E) | 100(2A) |
| Capacitance | Tolerance | Part Number | |
| 0.10pF(R10) | ±0.1pF(B) | GQM1875C2ER10BB12D | |
| 0.20pF(R20) | ±0.1pF(B) | GQM1875C2ER20BB12D | |
| 0.30pF(R30) | ±0.1pF(B) | GQM1875C2ER30BB12D | |
| | ±0.25pF(C) | GQM1875C2ER30CB12D | |
| 0.40pF(R40) | ±0.1pF(B) | GQM1875C2ER40BB12D | |
| | ±0.25pF(C) | GQM1875C2ER40CB12D | |
| 0.50pF(R50) | ±0.1pF(B) | GQM1875C2ER50BB12D | GQM1885C2AR50BB01D |
| | ±0.25pF(C) | GQM1875C2ER50CB12D | GQM1885C2AR50CB01D |
| 0.75pF(R75) | ±0.1pF(B) | GQM1875C2ER75BB12D | GQM1885C2AR75BB01D |
| | ±0.25pF(C) | GQM1875C2ER75CB12D | GQM1885C2AR75CB01D |
| 1.0pF(1R0) | ±0.1pF(B) | GQM1875C2E1R0BB12D | GQM1885C2A1R0BB01D |
| | ±0.25pF(C) | GQM1875C2E1R0CB12D | GQM1885C2A1R0CB01D |
| 1.1pF(1R1) | ±0.1pF(B) | GQM1875C2E1R1BB12D | GQM1885C2A1R1BB01D |
| | ±0.25pF(C) | GQM1875C2E1R1CB12D | GQM1885C2A1R1CB01D |
| 1.2pF(1R2) | ±0.1pF(B) | GQM1875C2E1R2BB12D | GQM1885C2A1R2BB01D |
| | ±0.25pF(C) | GQM1875C2E1R2CB12D | GQM1885C2A1R2CB01D |
| 1.3pF(1R3) | ±0.1pF(B) | GQM1875C2E1R3BB12D | GQM1885C2A1R3BB01D |
| | ±0.25pF(C) | GQM1875C2E1R3CB12D | GQM1885C2A1R3CB01D |
| 1.5pF(1R5) | ±0.1pF(B) | GQM1875C2E1R5BB12D | GQM1885C2A1R5BB01D |
| | ±0.25pF(C) | GQM1875C2E1R5CB12D | GQM1885C2A1R5CB01D |
| 1.6pF(1R6) | ±0.1pF(B) | GQM1875C2E1R6BB12D | GQM1885C2A1R6BB01D |
| | ±0.25pF(C) | GQM1875C2E1R6CB12D | GQM1885C2A1R6CB01D |
| 1.8pF(1R8) | ±0.1pF(B) | GQM1875C2E1R8BB12D | GQM1885C2A1R8BB01D |
| | ±0.25pF(C) | GQM1875C2E1R8CB12D | GQM1885C2A1R8CB01D |
| 2.0pF(2R0) | ±0.1pF(B) | GQM1875C2E2R0BB12D | GQM1885C2A2R0BB01D |
| | ±0.25pF(C) | GQM1875C2E2R0CB12D | GQM1885C2A2R0CB01D |
| 2.2pF(2R2) | ±0.1pF(B) | GQM1875C2E2R2BB12D | GQM1885C2A2R2BB01D |
| | ±0.25pF(C) | GQM1875C2E2R2CB12D | GQM1885C2A2R2CB01D |
| 2.4pF(2R4) | ±0.1pF(B) | GQM1875C2E2R4BB12D | GQM1885C2A2R4BB01D |
| | ±0.25pF(C) | GQM1875C2E2R4CB12D | GQM1885C2A2R4CB01D |
| 2.7pF(2R7) | ±0.1pF(B) | GQM1875C2E2R7BB12D | GQM1885C2A2R7BB01D |
| | ±0.25pF(C) | GQM1875C2E2R7CB12D | GQM1885C2A2R7CB01D |
| 3.0pF(3R0) | ±0.1pF(B) | GQM1875C2E3R0BB12D | GQM1885C2A3R0BB01D |
| | ±0.25pF(C) | GQM1875C2E3R0CB12D | GQM1885C2A3R0CB01D |
| 3.3pF(3R3) | ±0.1pF(B) | GQM1875C2E3R3BB12D | GQM1885C2A3R3BB01D |
| | ±0.25pF(C) | GQM1875C2E3R3CB12D | GQM1885C2A3R3CB01D |
| 3.6pF(3R6) | ±0.1pF(B) | GQM1875C2E3R6BB12D | GQM1885C2A3R6BB01D |
| | ±0.25pF(C) | GQM1875C2E3R6CB12D | GQM1885C2A3R6CB01D |
| 3.9pF(3R9) | ±0.1pF(B) | GQM1875C2E3R9BB12D | GQM1885C2A3R9BB01D |
| | ±0.25pF(C) | GQM1875C2E3R9CB12D | GQM1885C2A3R9CB01D |
| 4.0pF(4R0) | ±0.1pF(B) | GQM1875C2E4R0BB12D | GQM1885C2A4R0BB01D |
| | ±0.25pF(C) | GQM1875C2E4R0CB12D | GQM1885C2A4R0CB01D |
| 4.3pF(4R3) | ±0.1pF(B) | GQM1875C2E4R3BB12D | GQM1885C2A4R3BB01D |
| | ±0.25pF(C) | GQM1875C2E4R3CB12D | GQM1885C2A4R3CB01D |
| 4.7pF(4R7) | ±0.1pF(B) | GQM1875C2E4R7BB12D | GQM1885C2A4R7BB01D |
| | ±0.25pF(C) | GQM1875C2E4R7CB12D | GQM1885C2A4R7CB01D |
| 5.0pF(5R0) | ±0.1pF(B) | GQM1875C2E5R0BB12D | GQM1885C2A5R0BB01D |
| | ±0.25pF(C) | GQM1875C2E5R0CB12D | GQM1885C2A5R0CB01D |

The part number code is shown in () and Unit is shown in []. < >: EIA [inch] Code

- | | | | | |
|---------------|---|--|--|---|
| (Part Number) | GQ M 18 7 5C 2E R10 B B12 D | ① Product ID ② Series ⑤ Temperature Characteristics ⑧ Capacitance Tolerance | ③ Dimensions (LxW) ⑥ Rated Voltage ⑨ Individual Specification Code | ④ Dimension (T) ⑦ Capacitance ⑩ Packaging |
|---------------|---|--|--|---|

Packaging Code in Part Number shows STD 180mm Reel Taping.

Temperature Compensating Type C0G(5C) Characteristics

| LxW [mm] | | 1.6x0.8(18)<0603> | | |
|-------------------|------------|--------------------|--------------------|--------------------|
| Rated Volt. [Vdc] | | 250(2E) | 100(2A) | 50(1H) |
| Capacitance | Tolerance | Part Number | | |
| 5.1pF(5R1) | ±0.25pF(C) | GQM1875C2E5R1CB12D | GQM1885C2A5R1CB01D | |
| | ±0.5pF(D) | GQM1875C2E5R1DB12D | GQM1885C2A5R1DB01D | |
| 5.6pF(5R6) | ±0.25pF(C) | GQM1875C2E5R6CB12D | GQM1885C2A5R6CB01D | |
| | ±0.5pF(D) | GQM1875C2E5R6DB12D | GQM1885C2A5R6DB01D | |
| 6.0pF(6R0) | ±0.25pF(C) | GQM1875C2E6R0CB12D | GQM1885C2A6R0CB01D | |
| | ±0.5pF(D) | GQM1875C2E6R0DB12D | GQM1885C2A6R0DB01D | |
| 6.2pF(6R2) | ±0.25pF(C) | GQM1875C2E6R2CB12D | GQM1885C2A6R2CB01D | |
| | ±0.5pF(D) | GQM1875C2E6R2DB12D | GQM1885C2A6R2DB01D | |
| 6.8pF(6R8) | ±0.25pF(C) | GQM1875C2E6R8CB12D | GQM1885C2A6R8CB01D | |
| | ±0.5pF(D) | GQM1875C2E6R8DB12D | GQM1885C2A6R8DB01D | |
| 7.0pF(7R0) | ±0.25pF(C) | GQM1875C2E7R0CB12D | | GQM1885C1H7R0CB01D |
| | ±0.5pF(D) | GQM1875C2E7R0DB12D | | GQM1885C1H7R0DB01D |
| 7.5pF(7R5) | ±0.25pF(C) | GQM1875C2E7R5CB12D | | GQM1885C1H7R5CB01D |
| | ±0.5pF(D) | GQM1875C2E7R5DB12D | | GQM1885C1H7R5DB01D |
| 8.0pF(8R0) | ±0.25pF(C) | GQM1875C2E8R0CB12D | | GQM1885C1H8R0CB01D |
| | ±0.5pF(D) | GQM1875C2E8R0DB12D | | GQM1885C1H8R0DB01D |
| 8.2pF(8R2) | ±0.25pF(C) | GQM1875C2E8R2CB12D | | GQM1885C1H8R2CB01D |
| | ±0.5pF(D) | GQM1875C2E8R2DB12D | | GQM1885C1H8R2DB01D |
| 9.0pF(9R0) | ±0.25pF(C) | GQM1875C2E9R0CB12D | | GQM1885C1H9R0CB01D |
| | ±0.5pF(D) | GQM1875C2E9R0DB12D | | GQM1885C1H9R0DB01D |
| 9.1pF(9R1) | ±0.25pF(C) | GQM1875C2E9R1CB12D | | GQM1885C1H9R1CB01D |
| | ±0.5pF(D) | GQM1875C2E9R1DB12D | | GQM1885C1H9R1DB01D |
| 10pF(100) | ±2%(G) | GQM1875C2E100GB12D | | GQM1885C1H100GB01D |
| | ±5%(J) | GQM1875C2E100JB12D | | GQM1885C1H100JB01D |
| 11pF(110) | ±2%(G) | GQM1875C2E110GB12D | | GQM1885C1H110GB01D |
| | ±5%(J) | GQM1875C2E110JB12D | | GQM1885C1H110JB01D |
| 12pF(120) | ±2%(G) | GQM1875C2E120GB12D | | GQM1885C1H120GB01D |
| | ±5%(J) | GQM1875C2E120JB12D | | GQM1885C1H120JB01D |
| 13pF(130) | ±2%(G) | GQM1875C2E130GB12D | | GQM1885C1H130GB01D |
| | ±5%(J) | GQM1875C2E130JB12D | | GQM1885C1H130JB01D |
| 15pF(150) | ±2%(G) | GQM1875C2E150GB12D | | GQM1885C1H150GB01D |
| | ±5%(J) | GQM1875C2E150JB12D | | GQM1885C1H150JB01D |
| 16pF(160) | ±2%(G) | GQM1875C2E160GB12D | | GQM1885C1H160GB01D |
| | ±5%(J) | GQM1875C2E160JB12D | | GQM1885C1H160JB01D |
| 18pF(180) | ±2%(G) | GQM1875C2E180GB12D | | GQM1885C1H180GB01D |
| | ±5%(J) | GQM1875C2E180JB12D | | GQM1885C1H180JB01D |
| 20pF(200) | ±2%(G) | GQM1875C2E200GB12D | | GQM1885C1H200GB01D |
| | ±5%(J) | GQM1875C2E200JB12D | | GQM1885C1H200JB01D |
| 22pF(220) | ±2%(G) | GQM1875C2E220GB12D | | GQM1885C1H220GB01D |
| | ±5%(J) | GQM1875C2E220JB12D | | GQM1885C1H220JB01D |
| 24pF(240) | ±2%(G) | GQM1875C2E240GB12D | | GQM1885C1H240GB01D |
| | ±5%(J) | GQM1875C2E240JB12D | | GQM1885C1H240JB01D |
| 27pF(270) | ±2%(G) | GQM1875C2E270GB12D | | GQM1885C1H270GB01D |
| | ±5%(J) | GQM1875C2E270JB12D | | GQM1885C1H270JB01D |
| 30pF(300) | ±2%(G) | GQM1875C2E300GB12D | | GQM1885C1H300GB01D |
| | ±5%(J) | GQM1875C2E300JB12D | | GQM1885C1H300JB01D |

The part number code is shown in () and Unit is shown in []. < >: EIA [inch] Code

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GOM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information

Temperature Compensating Type C0G(5C) Characteristics

| LxW [mm] | | 1.6x0.8(18)<0603> | |
|-------------------|-----------|--------------------|--------------------|
| Rated Volt. [Vdc] | | 250(2E) | 50(1H) |
| Capacitance | Tolerance | Part Number | |
| 33pF(330) | ±2%(G) | GQM1875C2E330GB12D | GQM1885C1H330GB01D |
| | ±5%(J) | GQM1875C2E330JB12D | GQM1885C1H330JB01D |
| 36pF(360) | ±2%(G) | GQM1875C2E360GB12D | GQM1885C1H360GB01D |
| | ±5%(J) | GQM1875C2E360JB12D | GQM1885C1H360JB01D |
| 39pF(390) | ±2%(G) | GQM1875C2E390GB12D | GQM1885C1H390GB01D |
| | ±5%(J) | GQM1875C2E390JB12D | GQM1885C1H390JB01D |
| 43pF(430) | ±2%(G) | GQM1875C2E430GB12D | GQM1885C1H430GB01D |
| | ±5%(J) | GQM1875C2E430JB12D | GQM1885C1H430JB01D |
| 47pF(470) | ±2%(G) | GQM1875C2E470GB12D | GQM1885C1H470GB01D |
| | ±5%(J) | GQM1875C2E470JB12D | GQM1885C1H470JB01D |
| 51pF(510) | ±2%(G) | | GQM1885C1H510GB01D |
| | ±5%(J) | | GQM1885C1H510JB01D |
| 56pF(560) | ±2%(G) | | GQM1885C1H560GB01D |
| | ±5%(J) | | GQM1885C1H560JB01D |
| 62pF(620) | ±2%(G) | | GQM1885C1H620GB01D |
| | ±5%(J) | | GQM1885C1H620JB01D |
| 68pF(680) | ±2%(G) | | GQM1885C1H680GB01D |
| | ±5%(J) | | GQM1885C1H680JB01D |
| 75pF(750) | ±2%(G) | | GQM1885C1H750GB01D |
| | ±5%(J) | | GQM1885C1H750JB01D |
| 82pF(820) | ±2%(G) | | GQM1885C1H820GB01D |
| | ±5%(J) | | GQM1885C1H820JB01D |
| 91pF(910) | ±2%(G) | | GQM1885C1H910GB01D |
| | ±5%(J) | | GQM1885C1H910JB01D |
| 100pF(101) | ±2%(G) | | GQM1885C1H101GB01D |
| | ±5%(J) | | GQM1885C1H101JB01D |

The part number code is shown in () and Unit is shown in []. < >: EIA [inch] Code

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GQM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information

(Part Number) **GQ** **M** **18** **7** **5C** **2E** **330** **G** **B12** **D**

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- ① Product ID
- ② Series
- ③ Dimensions (LxW)
- ④ Dimension (T)
- ⑤ Temperature Characteristics
- ⑥ Rated Voltage
- ⑦ Capacitance
- ⑧ Capacitance Tolerance
- ⑨ Individual Specification Code
- ⑩ Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

Temperature Compensating Type C0G(5C) Characteristics

| LxW [mm] | | 2.0x1.25(21)<0805> | | 2.8x2.8(22)<1111> |
|-------------------|------------|--------------------|--------------------|--------------------|
| Rated Volt. [Vdc] | | 250(2E) | 100(2A) | 500(2H) |
| Capacitance | Tolerance | Part Number | | |
| 0.50pF(50) | ±0.1pF(B) | GQM2195C2ER50BB12D | GQM2195C2AR50BB01D | GQM22M5C2HR50BB01L |
| | ±0.25pF(C) | GQM2195C2ER50CB12D | GQM2195C2AR50CB01D | GQM22M5C2HR50CB01L |
| 0.75pF(75) | ±0.1pF(B) | GQM2195C2ER75BB12D | GQM2195C2AR75BB01D | GQM22M5C2HR75BB01L |
| | ±0.25pF(C) | GQM2195C2ER75CB12D | GQM2195C2AR75CB01D | GQM22M5C2HR75CB01L |
| 1.0pF(10) | ±0.1pF(B) | GQM2195C2E1R0BB12D | GQM2195C2A1R0BB01D | GQM22M5C2H1R0BB01L |
| | ±0.25pF(C) | GQM2195C2E1R0CB12D | GQM2195C2A1R0CB01D | GQM22M5C2H1R0CB01L |
| 1.1pF(11) | ±0.1pF(B) | GQM2195C2E1R1BB12D | GQM2195C2A1R1BB01D | GQM22M5C2H1R1BB01L |
| | ±0.25pF(C) | GQM2195C2E1R1CB12D | GQM2195C2A1R1CB01D | GQM22M5C2H1R1CB01L |
| 1.2pF(12) | ±0.1pF(B) | GQM2195C2E1R2BB12D | GQM2195C2A1R2BB01D | GQM22M5C2H1R2BB01L |
| | ±0.25pF(C) | GQM2195C2E1R2CB12D | GQM2195C2A1R2CB01D | GQM22M5C2H1R2CB01L |
| 1.3pF(13) | ±0.1pF(B) | GQM2195C2E1R3BB12D | GQM2195C2A1R3BB01D | GQM22M5C2H1R3BB01L |
| | ±0.25pF(C) | GQM2195C2E1R3CB12D | GQM2195C2A1R3CB01D | GQM22M5C2H1R3CB01L |
| 1.5pF(15) | ±0.1pF(B) | GQM2195C2E1R5BB12D | GQM2195C2A1R5BB01D | GQM22M5C2H1R5BB01L |
| | ±0.25pF(C) | GQM2195C2E1R5CB12D | GQM2195C2A1R5CB01D | GQM22M5C2H1R5CB01L |
| 1.6pF(16) | ±0.1pF(B) | GQM2195C2E1R6BB12D | GQM2195C2A1R6BB01D | GQM22M5C2H1R6BB01L |
| | ±0.25pF(C) | GQM2195C2E1R6CB12D | GQM2195C2A1R6CB01D | GQM22M5C2H1R6CB01L |
| 1.8pF(18) | ±0.1pF(B) | GQM2195C2E1R8BB12D | GQM2195C2A1R8BB01D | GQM22M5C2H1R8BB01L |
| | ±0.25pF(C) | GQM2195C2E1R8CB12D | GQM2195C2A1R8CB01D | GQM22M5C2H1R8CB01L |
| 2.0pF(20) | ±0.1pF(B) | GQM2195C2E2R0BB12D | GQM2195C2A2R0BB01D | GQM22M5C2H2R0BB01L |
| | ±0.25pF(C) | GQM2195C2E2R0CB12D | GQM2195C2A2R0CB01D | GQM22M5C2H2R0CB01L |
| 2.2pF(22) | ±0.1pF(B) | GQM2195C2E2R2BB12D | GQM2195C2A2R2BB01D | GQM22M5C2H2R2BB01L |
| | ±0.25pF(C) | GQM2195C2E2R2CB12D | GQM2195C2A2R2CB01D | GQM22M5C2H2R2CB01L |
| 2.4pF(24) | ±0.1pF(B) | GQM2195C2E2R4BB12D | GQM2195C2A2R4BB01D | GQM22M5C2H2R4BB01L |
| | ±0.25pF(C) | GQM2195C2E2R4CB12D | GQM2195C2A2R4CB01D | GQM22M5C2H2R4CB01L |
| 2.7pF(27) | ±0.1pF(B) | GQM2195C2E2R7BB12D | GQM2195C2A2R7BB01D | GQM22M5C2H2R7BB01L |
| | ±0.25pF(C) | GQM2195C2E2R7CB12D | GQM2195C2A2R7CB01D | GQM22M5C2H2R7CB01L |
| 3.0pF(30) | ±0.1pF(B) | GQM2195C2E3R0BB12D | GQM2195C2A3R0BB01D | GQM22M5C2H3R0BB01L |
| | ±0.25pF(C) | GQM2195C2E3R0CB12D | GQM2195C2A3R0CB01D | GQM22M5C2H3R0CB01L |
| 3.3pF(33) | ±0.1pF(B) | GQM2195C2E3R3BB12D | GQM2195C2A3R3BB01D | GQM22M5C2H3R3BB01L |
| | ±0.25pF(C) | GQM2195C2E3R3CB12D | GQM2195C2A3R3CB01D | GQM22M5C2H3R3CB01L |
| 3.6pF(36) | ±0.1pF(B) | GQM2195C2E3R6BB12D | GQM2195C2A3R6BB01D | GQM22M5C2H3R6BB01L |
| | ±0.25pF(C) | GQM2195C2E3R6CB12D | GQM2195C2A3R6CB01D | GQM22M5C2H3R6CB01L |
| 3.9pF(39) | ±0.1pF(B) | GQM2195C2E3R9BB12D | GQM2195C2A3R9BB01D | GQM22M5C2H3R9BB01L |
| | ±0.25pF(C) | GQM2195C2E3R9CB12D | GQM2195C2A3R9CB01D | GQM22M5C2H3R9CB01L |
| 4.0pF(40) | ±0.1pF(B) | GQM2195C2E4R0BB12D | GQM2195C2A4R0BB01D | GQM22M5C2H4R0BB01L |
| | ±0.25pF(C) | GQM2195C2E4R0CB12D | GQM2195C2A4R0CB01D | GQM22M5C2H4R0CB01L |
| 4.3pF(43) | ±0.1pF(B) | GQM2195C2E4R3BB12D | GQM2195C2A4R3BB01D | GQM22M5C2H4R3BB01L |
| | ±0.25pF(C) | GQM2195C2E4R3CB12D | GQM2195C2A4R3CB01D | GQM22M5C2H4R3CB01L |
| 4.7pF(47) | ±0.1pF(B) | GQM2195C2E4R7BB12D | GQM2195C2A4R7BB01D | GQM22M5C2H4R7BB01L |
| | ±0.25pF(C) | GQM2195C2E4R7CB12D | GQM2195C2A4R7CB01D | GQM22M5C2H4R7CB01L |
| 5.0pF(50) | ±0.1pF(B) | GQM2195C2E5R0BB12D | GQM2195C2A5R0BB01D | GQM22M5C2H5R0BB01L |
| | ±0.25pF(C) | GQM2195C2E5R0CB12D | GQM2195C2A5R0CB01D | GQM22M5C2H5R0CB01L |
| 5.1pF(51) | ±0.25pF(C) | GQM2195C2E5R1CB12D | GQM2195C2A5R1CB01D | GQM22M5C2H5R1CB01L |
| | ±0.5pF(D) | GQM2195C2E5R1DB12D | GQM2195C2A5R1DB01D | GQM22M5C2H5R1DB01L |
| 5.6pF(56) | ±0.25pF(C) | GQM2195C2E5R6CB12D | GQM2195C2A5R6CB01D | GQM22M5C2H5R6CB01L |
| | ±0.5pF(D) | GQM2195C2E5R6DB12D | GQM2195C2A5R6DB01D | GQM22M5C2H5R6DB01L |
| 6.0pF(60) | ±0.25pF(C) | GQM2195C2E6R0CB12D | GQM2195C2A6R0CB01D | GQM22M5C2H6R0CB01L |
| | ±0.5pF(D) | GQM2195C2E6R0DB12D | GQM2195C2A6R0DB01D | GQM22M5C2H6R0DB01L |

The part number code is shown in () and Unit is shown in []. < >: EIA [inch] Code

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GOM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information

Temperature Compensating Type C0G(5C) Characteristics

| LxW [mm] | | 2.0x1.25(21)<0805> | | | 2.8x2.8(22)<1111> |
|-------------------|------------|--------------------|--------------------|--------------------|--------------------|
| Rated Volt. [Vdc] | | 250(2E) | 100(2A) | 50(1H) | 500(2H) |
| Capacitance | Tolerance | Part Number | | | |
| 6.2pF(6R2) | ±0.25pF(C) | GQM2195C2E6R2CB12D | GQM2195C2A6R2CB01D | | GQM22M5C2H6R2CB01L |
| | ±0.5pF(D) | GQM2195C2E6R2DB12D | GQM2195C2A6R2DB01D | | GQM22M5C2H6R2DB01L |
| 6.8pF(6R8) | ±0.25pF(C) | GQM2195C2E6R8CB12D | GQM2195C2A6R8CB01D | | GQM22M5C2H6R8CB01L |
| | ±0.5pF(D) | GQM2195C2E6R8DB12D | GQM2195C2A6R8DB01D | | GQM22M5C2H6R8DB01L |
| 7.0pF(7R0) | ±0.25pF(C) | GQM2195C2E7R0CB12D | GQM2195C2A7R0CB01D | | GQM22M5C2H7R0CB01L |
| | ±0.5pF(D) | GQM2195C2E7R0DB12D | GQM2195C2A7R0DB01D | | GQM22M5C2H7R0DB01L |
| 7.5pF(7R5) | ±0.25pF(C) | GQM2195C2E7R5CB12D | GQM2195C2A7R5CB01D | | GQM22M5C2H7R5CB01L |
| | ±0.5pF(D) | GQM2195C2E7R5DB12D | GQM2195C2A7R5DB01D | | GQM22M5C2H7R5DB01L |
| 8.0pF(8R0) | ±0.25pF(C) | GQM2195C2E8R0CB12D | GQM2195C2A8R0CB01D | | GQM22M5C2H8R0CB01L |
| | ±0.5pF(D) | GQM2195C2E8R0DB12D | GQM2195C2A8R0DB01D | | GQM22M5C2H8R0DB01L |
| 8.2pF(8R2) | ±0.25pF(C) | GQM2195C2E8R2CB12D | GQM2195C2A8R2CB01D | | GQM22M5C2H8R2CB01L |
| | ±0.5pF(D) | GQM2195C2E8R2DB12D | GQM2195C2A8R2DB01D | | GQM22M5C2H8R2DB01L |
| 9.0pF(9R0) | ±0.25pF(C) | GQM2195C2E9R0CB12D | GQM2195C2A9R0CB01D | | GQM22M5C2H9R0CB01L |
| | ±0.5pF(D) | GQM2195C2E9R0DB12D | GQM2195C2A9R0DB01D | | GQM22M5C2H9R0DB01L |
| 9.1pF(9R1) | ±0.25pF(C) | GQM2195C2E9R1CB12D | GQM2195C2A9R1CB01D | | GQM22M5C2H9R1CB01L |
| | ±0.5pF(D) | GQM2195C2E9R1DB12D | GQM2195C2A9R1DB01D | | GQM22M5C2H9R1DB01L |
| 10pF(100) | ±2%(G) | GQM2195C2E100GB12D | GQM2195C2A100GB01D | | GQM22M5C2H100GB01L |
| | ±5%(J) | GQM2195C2E100JB12D | GQM2195C2A100JB01D | | GQM22M5C2H100JB01L |
| 11pF(110) | ±2%(G) | GQM2195C2E110GB12D | GQM2195C2A110GB01D | | GQM22M5C2H110GB01L |
| | ±5%(J) | GQM2195C2E110JB12D | GQM2195C2A110JB01D | | GQM22M5C2H110JB01L |
| 12pF(120) | ±2%(G) | GQM2195C2E120GB12D | GQM2195C2A120GB01D | | GQM22M5C2H120GB01L |
| | ±5%(J) | GQM2195C2E120JB12D | GQM2195C2A120JB01D | | GQM22M5C2H120JB01L |
| 13pF(130) | ±2%(G) | GQM2195C2E130GB12D | GQM2195C2A130GB01D | | GQM22M5C2H130GB01L |
| | ±5%(J) | GQM2195C2E130JB12D | GQM2195C2A130JB01D | | GQM22M5C2H130JB01L |
| 15pF(150) | ±2%(G) | GQM2195C2E150GB12D | GQM2195C2A150GB01D | | GQM22M5C2H150GB01L |
| | ±5%(J) | GQM2195C2E150JB12D | GQM2195C2A150JB01D | | GQM22M5C2H150JB01L |
| 16pF(160) | ±2%(G) | GQM2195C2E160GB12D | GQM2195C2A160GB01D | | GQM22M5C2H160GB01L |
| | ±5%(J) | GQM2195C2E160JB12D | GQM2195C2A160JB01D | | GQM22M5C2H160JB01L |
| 18pF(180) | ±2%(G) | GQM2195C2E180GB12D | GQM2195C2A180GB01D | | GQM22M5C2H180GB01L |
| | ±5%(J) | GQM2195C2E180JB12D | GQM2195C2A180JB01D | | GQM22M5C2H180JB01L |
| 20pF(200) | ±2%(G) | GQM2195C2E200GB12D | | GQM2195C1H200GB01D | GQM22M5C2H200GB01L |
| | ±5%(J) | GQM2195C2E200JB12D | | GQM2195C1H200JB01D | GQM22M5C2H200JB01L |
| 22pF(220) | ±2%(G) | GQM2195C2E220GB12D | | GQM2195C1H220GB01D | GQM22M5C2H220GB01L |
| | ±5%(J) | GQM2195C2E220JB12D | | GQM2195C1H220JB01D | GQM22M5C2H220JB01L |
| 24pF(240) | ±2%(G) | GQM2195C2E240GB12D | | GQM2195C1H240GB01D | GQM22M5C2H240GB01L |
| | ±5%(J) | GQM2195C2E240JB12D | | GQM2195C1H240JB01D | GQM22M5C2H240JB01L |
| 27pF(270) | ±2%(G) | GQM2195C2E270GB12D | | GQM2195C1H270GB01D | GQM22M5C2H270GB01L |
| | ±5%(J) | GQM2195C2E270JB12D | | GQM2195C1H270JB01D | GQM22M5C2H270JB01L |
| 30pF(300) | ±2%(G) | GQM2195C2E300GB12D | | GQM2195C1H300GB01D | GQM22M5C2H300GB01L |
| | ±5%(J) | GQM2195C2E300JB12D | | GQM2195C1H300JB01D | GQM22M5C2H300JB01L |
| 33pF(330) | ±2%(G) | GQM2195C2E330GB12D | | GQM2195C1H330GB01D | GQM22M5C2H330GB01L |
| | ±5%(J) | GQM2195C2E330JB12D | | GQM2195C1H330JB01D | GQM22M5C2H330JB01L |
| 36pF(360) | ±2%(G) | GQM2195C2E360GB12D | | GQM2195C1H360GB01D | GQM22M5C2H360GB01L |
| | ±5%(J) | GQM2195C2E360JB12D | | GQM2195C1H360JB01D | GQM22M5C2H360JB01L |
| 39pF(390) | ±2%(G) | GQM2195C2E390GB12D | | GQM2195C1H390GB01D | GQM22M5C2H390GB01L |
| | ±5%(J) | GQM2195C2E390JB12D | | GQM2195C1H390JB01D | GQM22M5C2H390JB01L |

The part number code is shown in () and Unit is shown in []. < >: EIA [inch] Code

(Part Number) GQ M 21 9 5C 2E 6R2 C B12 D
 ① Product ID ② Series ③ Dimensions (LxW) ④ Dimension (T)
 ⑤ Temperature Characteristics ⑥ Rated Voltage ⑦ Capacitance
 ⑧ Capacitance Tolerance ⑨ Individual Specification Code ⑩ Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

Temperature Compensating Type C0G(5C) Characteristics

| LxW [mm] | | 2.0x1.25(21)<0805> | | 2.8x2.8(22)<1111> |
|-------------------|-----------|--------------------|--------------------|--------------------|
| Rated Volt. [Vdc] | | 250(2E) | 50(1H) | 500(2H) |
| Capacitance | Tolerance | Part Number | | |
| 43pF(430) | ±2%(G) | GQM2195C2E430GB12D | GQM2195C1H430GB01D | GQM22M5C2H430GB01L |
| | ±5%(J) | GQM2195C2E430JB12D | GQM2195C1H430JB01D | GQM22M5C2H430JB01L |
| 47pF(470) | ±2%(G) | GQM2195C2E470GB12D | GQM2195C1H470GB01D | GQM22M5C2H470GB01L |
| | ±5%(J) | GQM2195C2E470JB12D | GQM2195C1H470JB01D | GQM22M5C2H470JB01L |
| 51pF(510) | ±2%(G) | GQM2195C2E510GB12D | GQM2195C1H510GB01D | GQM22M5C2H510GB01L |
| | ±5%(J) | GQM2195C2E510JB12D | GQM2195C1H510JB01D | GQM22M5C2H510JB01L |
| 56pF(560) | ±2%(G) | GQM2195C2E560GB12D | GQM2195C1H560GB01D | GQM22M5C2H560GB01L |
| | ±5%(J) | GQM2195C2E560JB12D | GQM2195C1H560JB01D | GQM22M5C2H560JB01L |
| 62pF(620) | ±2%(G) | GQM2195C2E620GB12D | GQM2195C1H620GB01D | GQM22M5C2H620GB01L |
| | ±5%(J) | GQM2195C2E620JB12D | GQM2195C1H620JB01D | GQM22M5C2H620JB01L |
| 68pF(680) | ±2%(G) | GQM2195C2E680GB12D | GQM2195C1H680GB01D | GQM22M5C2H680GB01L |
| | ±5%(J) | GQM2195C2E680JB12D | GQM2195C1H680JB01D | GQM22M5C2H680JB01L |
| 75pF(750) | ±2%(G) | GQM2195C2E750GB12D | GQM2195C1H750GB01D | GQM22M5C2H750GB01L |
| | ±5%(J) | GQM2195C2E750JB12D | GQM2195C1H750JB01D | GQM22M5C2H750JB01L |
| 82pF(820) | ±2%(G) | GQM2195C2E820GB12D | GQM2195C1H820GB01D | GQM22M5C2H820GB01L |
| | ±5%(J) | GQM2195C2E820JB12D | GQM2195C1H820JB01D | GQM22M5C2H820JB01L |
| 91pF(910) | ±2%(G) | GQM2195C2E910GB12D | GQM2195C1H910GB01D | GQM22M5C2H910GB01L |
| | ±5%(J) | GQM2195C2E910JB12D | GQM2195C1H910JB01D | GQM22M5C2H910JB01L |
| 100pF(101) | ±2%(G) | GQM2195C2E101GB12D | GQM2195C1H101GB01D | GQM22M5C2H101GB01L |
| | ±5%(J) | GQM2195C2E101JB12D | GQM2195C1H101JB01D | GQM22M5C2H101JB01L |

The part number code is shown in () and Unit is shown in []. < >: EIA [inch] Code

For General
GRM Series

Array
GMM Series

Low ESL
LL□ Series

High-Q
GJM Series

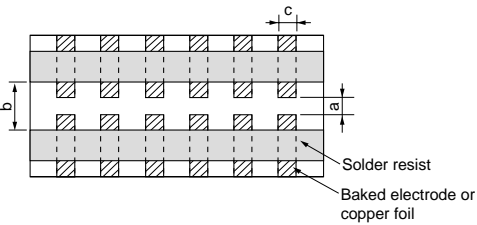
High Frequency
GOM Series

Monolithic Microchip
GMA Series

For Bonding
GMD Series

Product Information

GQM Series Specifications and Test Methods

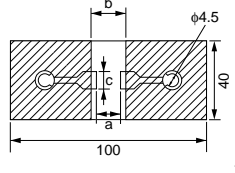
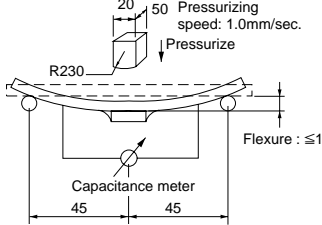
| No. | Item | Specifications | Test Method | | | | | | | | | | | | | | | | |
|---|---|---|---|------|------------------|---|-------------------------|-------|-------------|-----|-------------------------|-------|-------------|-----|-------------------------|-------|-----|-----|-----|
| 1 | Operating Temperature | -55 to 125°C | Reference Temperature: 25°C | | | | | | | | | | | | | | | | |
| 2 | Rated Voltage | See the previous page. | The rated voltage is defined as the maximum voltage that may be applied continuously to the capacitor. When AC voltage is superimposed on DC voltage, V^{P-P} or V^{O-P} , whichever is larger, should be maintained within the rated voltage range. | | | | | | | | | | | | | | | | |
| 3 | Appearance | No defects or abnormalities | Visual inspection | | | | | | | | | | | | | | | | |
| 4 | Dimension | Within the specified dimensions | Using calipers | | | | | | | | | | | | | | | | |
| 5 | Dielectric Strength | No defects or abnormalities | No failure should be observed when 300%* of the rated voltage is applied between the terminations for 1 to 5 seconds, provided the charge/discharge current is less than 50mA. *GQM187, GQM219(250V), GQM22: 250% of the rated voltage | | | | | | | | | | | | | | | | |
| 6 | Insulation Resistance | More than 10,000MΩ | The insulation resistance should be measured with a DC voltage not exceeding the rated voltage at 25°C and 75%RH max. and within 2 minutes of charging, provided the charge/discharge current is less than 50mA. | | | | | | | | | | | | | | | | |
| 7 | Capacitance | Within the specified tolerance | The capacitance/Q should be measured at 25°C at the frequency and voltage shown in the table. | | | | | | | | | | | | | | | | |
| 8 | Q | 30pF and over: $Q \geq 1400$ 30pF and below: $Q \geq 800 + 20C$ C: Nominal Capacitance (pF) | | | | | | | | | | | | | | | | | |
| 9 | Capacitance Temperature Characteristics | Temperature Coefficient | Within the specified tolerance (Table A) | | | | | | | | | | | | | | | | |
| | | Capacitance Drift | Within $\pm 0.2\%$ or $\pm 0.05\text{pF}$ (whichever is larger) | | | | | | | | | | | | | | | | |
| | | | <p>The capacitance change should be measured after 5 min. at each specified temp. stage.</p> <p>The temperature coefficient is determined using the capacitance measured in step 3 as a reference.</p> <p>When cycling the temperature sequentially from steps 1 through 5 the capacitance should be within the specified tolerance for the temperature coefficient and capacitance change as in Table A. The capacitance drift is calculated by dividing the differences between the maximum and minimum measured values in the steps 1, 3 and 5 by the capacitance value in step 3.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Reference Temp. ± 2</td> </tr> <tr> <td>2</td> <td>-55± 3</td> </tr> <tr> <td>3</td> <td>Reference Temp. ± 2</td> </tr> <tr> <td>4</td> <td>125± 3</td> </tr> <tr> <td>5</td> <td>Reference Temp. ± 2</td> </tr> </tbody> </table> | Step | Temperature (°C) | 1 | Reference Temp. ± 2 | 2 | -55 ± 3 | 3 | Reference Temp. ± 2 | 4 | 125 ± 3 | 5 | Reference Temp. ± 2 | | | | |
| Step | Temperature (°C) | | | | | | | | | | | | | | | | | | |
| 1 | Reference Temp. ± 2 | | | | | | | | | | | | | | | | | | |
| 2 | -55 ± 3 | | | | | | | | | | | | | | | | | | |
| 3 | Reference Temp. ± 2 | | | | | | | | | | | | | | | | | | |
| 4 | 125 ± 3 | | | | | | | | | | | | | | | | | | |
| 5 | Reference Temp. ± 2 | | | | | | | | | | | | | | | | | | |
| 10 | Adhesive Strength of Termination | No removal of the terminations or other defect should occur. | <p>Solder the capacitor to the test jig (glass epoxy board) shown in Fig. 1 using a eutectic solder. Then apply 10N* force in parallel with the test jig for 10\pm1 sec.</p> <p>The soldering should be done either with an iron or using the reflow method and should be conducted with care so that the soldering is uniform and free of defects such as heat shock.</p> <p style="text-align: right;">*5N (GQM188)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Type</th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>GQM18</td> <td>1.0</td> <td>3.0</td> <td>1.2</td> </tr> <tr> <td>GQM21</td> <td>1.2</td> <td>4.0</td> <td>1.65</td> </tr> <tr> <td>GQM22</td> <td>2.2</td> <td>5.0</td> <td>2.9</td> </tr> </tbody> </table> <p style="text-align: right;">(in mm)</p> | Type | a | b | c | GQM18 | 1.0 | 3.0 | 1.2 | GQM21 | 1.2 | 4.0 | 1.65 | GQM22 | 2.2 | 5.0 | 2.9 |
| | | Type | | a | b | c | | | | | | | | | | | | | |
| GQM18 | 1.0 | 3.0 | 1.2 | | | | | | | | | | | | | | | | |
| GQM21 | 1.2 | 4.0 | 1.65 | | | | | | | | | | | | | | | | |
| GQM22 | 2.2 | 5.0 | 2.9 | | | | | | | | | | | | | | | | |
|  | | | Fig. 1 | | | | | | | | | | | | | | | | |
| 11 | Vibration Resistance | Appearance | No defects or abnormalities | | | | | | | | | | | | | | | | |
| | | Capacitance | Within the specified tolerance | | | | | | | | | | | | | | | | |
| | | Q | <p>30pF and over: $Q \geq 1400$ 30pF and below: $Q \geq 800 + 20C$ C: Nominal Capacitance (pF)</p> <p>Solder the capacitor to the test jig (glass epoxy board) in the same manner and under the same conditions as (10). The capacitor should be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 55Hz. The frequency range, from 10 to 55Hz and return to 10Hz, should be traversed in approximately 1 minute. This motion should be applied for a period of 2 hours in each of 3 mutually perpendicular directions (total of 6 hours).</p> | | | | | | | | | | | | | | | | |

Continued on the following page.

For General GRM Series
 Array GNM Series
 Low ESL LL□ Series
 High-Q GJM Series
 High Frequency GQM Series
 Monolithic Microchip GMA Series
 For Bonding GMD Series
 Product Information

GQM Series Specifications and Test Methods

Continued from the preceding page.

| No. | Item | Specifications | Test Method | | | | | | | | | | | | | | | | |
|-------|------------------------------|---|---|---|---|---|-------|-----|-----|-----|-------|-----|-----|------|-------|-----|-----|-----|---|
| 12 | Appearance | No defects or abnormalities. | Solder the capacitor on the test jig (glass epoxy board) shown in Fig. 2 using a eutectic solder. Then apply a force in the direction shown in Fig. 3. The soldering should be done by the reflow method and should be conducted with care so that the soldering is uniform and free of defects such as heat shock. | | | | | | | | | | | | | | | | |
| | Capacitance Change | Within $\pm 5\%$ or $\pm 0.5\text{pF}$ (whichever is larger) | | | | | | | | | | | | | | | | | |
| | Deflection |  <table border="1" style="margin: 10px auto; text-align: center;"> <thead> <tr> <th>Type</th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>GQM18</td> <td>1.0</td> <td>3.0</td> <td>1.2</td> </tr> <tr> <td>GQM21</td> <td>1.2</td> <td>4.0</td> <td>1.65</td> </tr> <tr> <td>GQM22</td> <td>2.2</td> <td>5.0</td> <td>2.9</td> </tr> </tbody> </table> <p style="text-align: center;">(in mm)</p> | Type | a | b | c | GQM18 | 1.0 | 3.0 | 1.2 | GQM21 | 1.2 | 4.0 | 1.65 | GQM22 | 2.2 | 5.0 | 2.9 |  |
| Type | a | b | c | | | | | | | | | | | | | | | | |
| GQM18 | 1.0 | 3.0 | 1.2 | | | | | | | | | | | | | | | | |
| GQM21 | 1.2 | 4.0 | 1.65 | | | | | | | | | | | | | | | | |
| GQM22 | 2.2 | 5.0 | 2.9 | | | | | | | | | | | | | | | | |
| 13 | Solderability of Termination | 75% of the terminations are to be soldered evenly and continuously. | Immerse the capacitor in a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight proportion). Preheat at 80 to 120°C for 10 to 30 seconds. After preheating, immerse in eutectic solder solution for 2 ± 0.5 seconds at $230\pm 5^\circ\text{C}$ or Sn-3.0Ag-0.5Cu solder solution for 2 ± 0.5 seconds at $245\pm 5^\circ\text{C}$. | | | | | | | | | | | | | | | | |
| 14 | Resistance to Soldering Heat | The measured and observed characteristics should satisfy the specifications in the following table. | Preheat the capacitor at 120 to 150°C for 1 minute. Immerse the capacitor in a eutectic solder or Sn-3.0Ag-0.5Cu solder solution at $270\pm 5^\circ\text{C}$ for 10 ± 0.5 seconds. Let sit at room temperature for 24 ± 2 hours, then measure. | | | | | | | | | | | | | | | | |
| | | Appearance | | No defects or abnormalities. | | | | | | | | | | | | | | | |
| | | Capacitance Change | | Within $\pm 2.5\%$ or $\pm 0.25\text{pF}$ (whichever is larger) | | | | | | | | | | | | | | | |
| | | Q | | 30pF and over: $Q\geq 1400$ 30pF and below: $Q\geq 800+20C$ C: Nominal Capacitance (pF) | | | | | | | | | | | | | | | |
| | | I.R. | | More than 10,000MΩ | | | | | | | | | | | | | | | |
| | Dielectric Strength | No defects. | | | | | | | | | | | | | | | | | |
| 15 | Temperature Cycle | The measured and observed characteristics should satisfy the specifications in the following table. | Fix the capacitor to the supporting jig in the same manner and under the same conditions as (10). Perform the five cycles according to the four heat treatments listed in the following table. Let sit for 24 ± 2 hours at room temperature, then measure. | | | | | | | | | | | | | | | | |
| | | Appearance | | No defects or abnormalities. | | | | | | | | | | | | | | | |
| | | Capacitance Change | | Within $\pm 2.5\%$ or $\pm 0.25\text{pF}$ (whichever is larger) | | | | | | | | | | | | | | | |
| | | Q | | 30pF and over: $Q\geq 1400$ 30pF and below: $Q\geq 800+20C$ C: Nominal Capacitance (pF) | | | | | | | | | | | | | | | |
| | | I.R. | | More than 10,000MΩ | | | | | | | | | | | | | | | |
| | Dielectric Strength | No defects. | | | | | | | | | | | | | | | | | |
| 16 | Humidity Steady State | The measured and observed characteristics should satisfy the specifications in the following table. | Set the capacitor at $40\pm 2^\circ\text{C}$ and in 90 to 95% humidity for 500 ± 12 hours. Remove and set for 24 ± 2 hours at room temperature, then measure. | | | | | | | | | | | | | | | | |
| | | Appearance | | No defects or abnormalities. | | | | | | | | | | | | | | | |
| | | Capacitance Change | | Within $\pm 5\%$ or $\pm 0.5\text{pF}$ (whichever is larger) | | | | | | | | | | | | | | | |
| | | Q | | 30pF and over: $Q\geq 350$ 10pF and over, 30pF and below: $Q\geq 275+5C/2$ 10pF and below: $Q\geq 200+10C$ C: Nominal Capacitance (pF) | | | | | | | | | | | | | | | |
| | | I.R. | | More than 1,000MΩ | | | | | | | | | | | | | | | |

Continued on the following page.

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GOM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information

GQM Series Specifications and Test Methods

Continued from the preceding page.

| No. | Item | Specifications | Test Method | |
|-----|-----------------------|---|--|--|
| 17 | Humidity Load | The measured and observed characteristics should satisfy the specifications in the following table. | Apply the rated voltage at 40±2°C and 90 to 95% humidity for 500±12 hours. Remove and let sit for 24±2 hours at room temperature then measure. The charge/discharge current is less than 50mA. | |
| | | Appearance | | No defects or abnormalities. |
| | | Capacitance Change | | Within ±7.5% or ±0.75pF (whichever is larger) |
| | | Q | | 30pF and over: $Q \geq 200$ 30pF and below: $Q \geq 100 + 10C/3$ C: Nominal Capacitance (pF) |
| | I.R. | More than 500MΩ | | |
| 18 | High Temperature Load | The measured and observed characteristics should satisfy the specifications in the following table. | Apply 200%* of the rated voltage for 1000±12 hours at the maximum operating temperature ±3°C. Set for 24±2 hours at room temperature, then measure. The charge/discharge current is less than 50mA. *GQM22: 150% of the rated voltage | |
| | | Appearance | | No defects or abnormalities. |
| | | Capacitance Change | | Within ±3% or ±0.3pF (whichever is larger) |
| | | Q | | 30pF and over: $Q \geq 350$ 10pF and over, 30pF and below: $Q \geq 275 + 5C/2$ 10pF and below: $Q \geq 200 + 10C$ C: Nominal Capacitance (pF) |
| | I.R. | More than 1,000MΩ | | |

Table A

| Char. | Nominal Values (ppm/°C) *1 | Capacitance Change from 25°C (%) | | | | | |
|-------|----------------------------|----------------------------------|-------|-------|-------|-------|-------|
| | | -55°C | | -30°C | | -10°C | |
| | | Max. | Min. | Max. | Min. | Max. | Min. |
| 5C | 0±30 | 0.58 | -0.24 | 0.40 | -0.17 | 0.25 | -0.11 |

*1: Nominal values denote the temperature coefficient within a range of 25 to 125°C.

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GOM Series

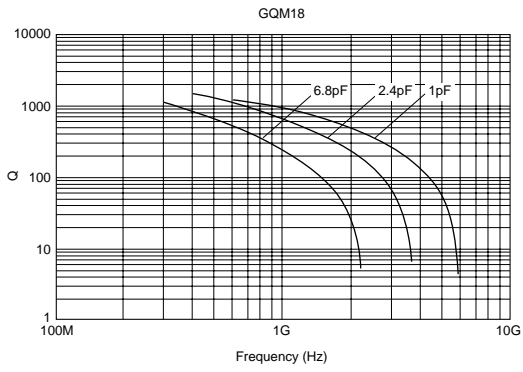
Monolithic Microchip GMA Series

For Bonding GMD Series

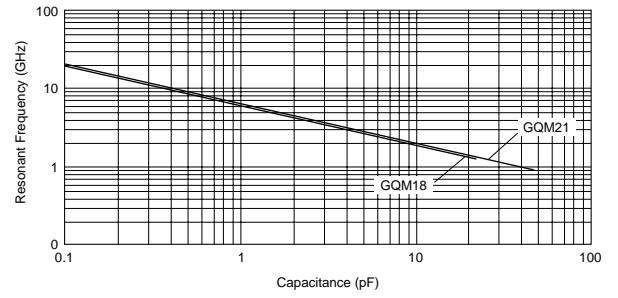
Product Information

GQM Series Data

■ Q - Frequency Characteristics



■ Resonant Frequency - Capacitance



For General
GRM Series

Array
GMM Series

Low ESL
LL□ Series

High-Q
GJM Series

High Frequency
GOM Series

Monolithic Microchip
GMA Series

For Bonding
GMD Series

Product Information