

Part Numbering

[Part Number] GRM188B11H102KA01D

| | | | | | | | | |
|-----------------|-----------------------|---------------|-----------------------------|----------------|-----------------|-----------------------|-------------------------------|---------------|
| GRM ❶ | 18 ❷ | 8 ❸ | B1 ❹ | 1H ❺ | 102 ❻ | K ❼ | A01 ❽ | D ❾ |
| Series | Chip Dimensions (L×W) | Dimension (T) | Temperature Characteristics | Rated Voltage | Capacitance | Capacitance Tolerance | Individual Specification Code | Packaging |

❶ Series

| Code | Series |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EVA | Safety Standard Certified Resin Molding SMD Type Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| GA2 | Based on the Electrical Appliance and Material Safety Law of Japan Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| GA3 | Safety Standard Certified Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| GC3 | High Effective Capacitance & High Ripple Current Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| GCD | MLSC Design Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| GCE | Soft Termination MLSC Design Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| GCG | AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| GCH | Chip Multilayer Ceramic Capacitors for Implanted Medical Equipment or Medical Equipment [GHTF D] (Non Life Support Circuit) |
| GCJ | Soft Termination Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| GCM | Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| GCQ | High Q Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) & Automotive (Infotainment/Confort) |
| GGD | Water Repellent MLSC Design Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| GGM | Water Repellent Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| GJ4 | Low Distortion Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| GJM | High Q Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment (<=100Vdc) |
| GMA | Wire Bonding Mount Multilayer Microchip Capacitors for Consumer Electronics & Industrial Equipment |
| GMD | Wire Bonding/AuSn Soldering Mount Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| GQM | High Q and High Power Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment (>100Vdc) |
| GR3 | High Effective Capacitance & High Ripple Current Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| GR4 | Chip Multilayer Ceramic Capacitors for Ethernet LAN and Primary-secondary Coupling of DC-DC Converters for Consumer Electronics & Industrial Equipment |
| | Chip Multilayer Ceramic Capacitors for Splitter Circuit of G-Fast, xDSL for Consumer Electronics & Industrial Equipment |
| GR7 | Chip Multilayer Ceramic Capacitors for Camera Flash circuit only of Consumer Electronics & Industrial Equipment |
| GRJ | Chip Multilayer Ceramic Capacitors with Soft Termination for Consumer Electronics & Industrial Equipment |
| GRM | Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| | Chip Multilayer Ceramic Capacitors for LCD Backlight Inverter Circuit only |
| GRT | AEC-Q200 Compliant Chip Multilayer Ceramic Capacitors for Automotive (Infotainment/Confort) & Industrial Equipment |
| GXT | AEC-Q200 Compliant Water Repellent Chip Multilayer Ceramic Capacitors for Automotive (Infotainment/Confort) |
| KC3 | High Effective Capacitance & High Allowable Ripple Current Metal Terminal Type Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| KC9 | Metal Terminal Type Multilayer Ceramic Capacitors for Automotive Powertrain/Safety Equipment (Export-controlled product) |
| KCA | Safety Standard Certified Metal Terminal Type Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| KCM | Metal Terminal Type Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| KR3 | High Effective Capacitance & High Allowable Ripple Current Metal Terminal Type Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| KR9 | Metal Terminal Type Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment (Export-controlled product) |
| KRM | Metal Terminal Type Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| KRT | AEC-Q200 Compliant Metal Terminal Type Multilayer Ceramic Capacitors for Automotive (Infotainment/Confort) & Industrial Equipment |
| LLA | 8 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| LLC | LW Reversed Low ESL Chip Multilayer Ceramic Capacitors for Automotive (Powertrain/Safety) |
| LLF | 4 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| LLG | 4 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Automotive Powertrain/Safety Equipment |
| LLL | LW Reversed Low ESL Chip Multilayer Ceramic Capacitors for Consumer Electronics & Industrial Equipment |
| ZRA | Low Acoustic Noise Chip Multilayer Ceramic Capacitors on Interposer Board for Consumer Electronics & Industrial Equipment |
| ZRB | Low Acoustic Noise Chip Multilayer Ceramic Capacitors on Interposer Board for Consumer Electronics & Industrial Equipment |

❷ Chip Dimensions (L×W)

| Code | Dimensions (L×W) | EIA |
|-----------|-----------------------|--------|
| 01 | 0.25×0.125mm | 008004 |
| 02 | 0.4×0.2mm | 01005 |
| 0D | 0.38×0.38mm | 015015 |
| 0Y | 0.6×0.6mm | 0202 |
| MD | 0.5×0.25mm | 015008 |
| 03 | 0.6×0.3mm | 0201 |
| 05 | 0.5×0.5mm | 0202 |
| 08 | 0.8×0.8mm | 0303 |
| 1U | 0.6×1.0mm | 02404 |
| 15 | 1.0×0.5mm | 0402 |
| 18 | 1.6×0.8mm | 0603 |
| JN | 1.8×1.0mm | 0704 |
| 21 | 2.0×1.25mm | 0805 |
| | 2.4×1.65mm (ZRA Only) | - |
| 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 |
| 86 | 8.0×6.0mm | - |

As for KCA and EVA series, it represents the dimensions of the product body that does not include the metal terminal.

❸ Dimension (T)

| Except KR□/KC□/EVA | | KR□/KC□/EVA Only | |
|--------------------|----------------------------------|------------------|---------------|
| Code | Dimension (T) | Code | Dimension (T) |
| 1 | 0.125mm | E | 1.8mm |
| 2 | 0.2mm | F | 1.9mm |
| 3 | 0.3mm | K | 2.7mm |
| 4 | 0.4mm | L | 2.8mm |
| 5 | 0.5mm | R | 3.6mm |
| 6 | 0.6mm | Q | 3.7mm |
| 7 | 0.7mm | T | 4.8mm |
| 8 | 0.8mm | V | 6.2mm |
| 9 | 0.85mm | W | 6.4mm |
| A | 1.0mm | | |
| B | 1.25mm | | |
| C | 1.6mm | | |
| D | 2.0mm | | |
| E | 2.5mm | | |
| K | 0.08mm | | |
| M | 1.15mm | | |
| N | 1.35mm | | |
| Q | 1.5mm | | |
| S | 0.16mm | | |
| T | 0.18mm | | |
| X | Depends on individual standards. | | |
| Y | 0.135mm | | |

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|------------------------|-----------------------|----------------------|-----------------------------|-----------------------|------------------------|-----------------------|-------------------------------|----------------------|
| GRM ① | 18 ② | 8 ③ | B1 ④ | 1H ⑤ | 102 ⑥ | K ⑦ | A01 ⑧ | D ⑨ |
| Series | Chip Dimensions (L×W) | Dimension (T) | Temperature Characteristics | Rated Voltage | Capacitance | Capacitance Tolerance | Individual Specification Code | Packaging |

Continued from the preceding page. ↓

④ Temperature Characteristics

| Temperature Characteristic Codes | | | Temperature Characteristics | | | Operating Temperature Range | Capacitance Change Each Temperature (%) | | | | | |
|----------------------------------|-----------------|-----------------------|-----------------------------|-----------------------------------------------|------------------------|-----------------------------|-----------------------------------------|-------|-------|-------|------|-------|
| Code | Public STD Code | Reference Temperature | Temperature Range | Capacitance Change or Temperature Coefficient | -55°C | | *4 | | -10°C | | | |
| | | | | | Max. | | Min. | Max. | Min. | Max. | Min. | |
| 0C | CHA | *2 | 20°C | 20 to 150°C | 0±60ppm/°C | -55 to 150°C | 0.82 | -0.45 | 0.49 | -0.27 | 0.33 | -0.18 |
| 1X | SL | JIS | 20°C | 20 to 85°C | +350 to -1000ppm/°C | -55 to 125°C | - | - | - | - | - | - |
| 2C | CH | JIS | 20°C | 20 to 125°C | 0±60ppm/°C | -55 to 125°C | 0.82 | -0.45 | 0.49 | -0.27 | 0.33 | -0.18 |
| 3C | CJ | JIS | 20°C | 20 to 125°C | 0±120ppm/°C | -55 to 125°C | 1.37 | -0.9 | 0.82 | -0.54 | 0.55 | -0.36 |
| 3U | UJ | JIS | 20°C | 20 to 85°C | -750±120ppm/°C | -25 to 85°C | - | - | 4.94 | 2.84 | 3.29 | 1.89 |
| 4C | CK | JIS | 20°C | 20 to 125°C | 0±250ppm/°C | -55 to 125°C | 2.56 | -1.88 | 1.54 | -1.13 | 1.02 | -0.75 |
| 5C | COG | EIA | 25°C | 25 to 125°C | 0±30ppm/°C | -55 to 125°C | 0.58 | -0.24 | 0.4 | -0.17 | 0.25 | -0.11 |
| 5G | X8G | *2 | 25°C | 25 to 150°C | 0±30ppm/°C | -55 to 150°C | 0.58 | -0.24 | 0.4 | -0.17 | 0.25 | -0.11 |
| 7U | U2J | EIA | 25°C | 25 to 125°C *3 | -750±120ppm/°C | -55 to 125°C | 8.78 | 5.04 | 6.04 | 3.47 | 3.84 | 2.21 |
| 9E | ZLM | *2 | 20°C | -55 to -40°C | -4700+1000/-2500ppm/°C | -55 to 125°C | - | - | - | - | - | - |
| | | | | -40 to 20°C | -5350±750ppm/°C | | - | - | - | - | - | |
| | | | | 20 to 85°C | -4700±500ppm/°C | | - | - | - | - | - | |
| | | | | 85 to 125°C | -4700+2000/-1000ppm/°C | | - | - | - | - | - | |
| B1 | B *1 | 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 | - | - | - | - | - | - |
| C6 | X5S | EIA | 25°C | -55 to 85°C | ±22% | -55 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 | - | - | - | - | - | - |
| D6 | X5T | EIA | 25°C | -55 to 85°C | +22%, -33% | -55 to 85°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 | - | - | - | - | - | - |
| L8 | X8L | *2 | 25°C | -55 to 150°C | +15%, -40% | -55 to 150°C | - | - | - | - | - | - |
| M8 | X8M | *2 | 25°C | -55 to 150°C | +15%, -50% | -55 to 150°C | - | - | - | - | - | - |
| N8 | X8N | *2 | 25°C | -55 to 150°C | +15%, -60% | -55 to 150°C | - | - | - | - | - | - |
| R1 | R *1 | 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 | - | - | - | - | - | - |
| R8 | R *1 | *2 | 20°C | -25 to 85°C | ±15% | -25 to 85°C | - | - | - | - | - | - |
| R9 | X8R | EIA | 25°C | -55 to 150°C | ±15% | -55 to 150°C | - | - | - | - | - | - |
| W0 | X7T | EIA | 25°C | -55 to 125°C | +22%, -33% | -55 to 125°C | - | - | - | - | - | - |
| Z7 | X7R | *2 | 25°C | -55 to 125°C | ±15% *5 | -55 to 125°C | - | - | - | - | - | - |

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

*2 Murata Temperature Characteristic Code.

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

*4 -25°C (Reference Temperature 20°C) / -30°C (Reference Temperature 25°C)

*5 Range of capacitance change rate with 50% rated voltage applied (See detailed specifications sheet).

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| | | | | | | | | |
|-----------------|--------------------------|---------------|--------------------------------|----------------|-----------------|--------------------------|----------------------------------|---------------|
| GRM ① | 18 ② | 8 ③ | B1 ④ | 1H ⑤ | 102 ⑥ | K ⑦ | A01 ⑧ | D ⑨ |
| Series | Chip Dimensions (L×W) | Dimension (T) | Temperature Characteristics | Rated Voltage | Capacitance | Capacitance Tolerance | Individual Specification Code | Packaging |

Continued from the preceding page. ↓

⑤Rated Voltage

| Code | | Rated Voltage |
|------------------|----------------------------|---------------|
| Standard Product | Voltage Derated Product *6 | |
| 0D | - | 2Vdc |
| 0E | EA | 2.5Vdc |
| 0G | EB | 4Vdc |
| 0J | EC | 6.3Vdc |
| 1A | ED | 10Vdc |
| 1C | EE | 16Vdc |
| 1E | EF | 25Vdc |
| 1H | EH | 50Vdc |
| 1J | - | 63Vdc |
| 1K | - | 80Vdc |
| 2A | EL | 100Vdc |
| 2D | - | 200Vdc |
| 2E | - | 250Vdc |
| 2W | LP | 450Vdc |
| 2H | LU | 500Vdc |
| 2J | LQ/LV | 630Vdc |
| 3A | LF/LW | 1kVdc |
| 3B | LG/LX | 1.25kVdc |
| 3D | - | 2kVdc |
| 3F | - | 3.15kVdc |
| BB | - | 350Vdc |
| E2 | - | 250Vac |
| YA | EG | 35Vdc |

*6 This product has the voltage and temperature derated conditions.

Please refer to detailed specifications sheet for details.

| Code+⑧Individual Specification Code | | Rated Voltage |
|-------------------------------------|--------------------------------|--------------------------------------------|
| Code | ⑧Individual Specification Code | |
| GB | - | X2 : 250Vac |
| GD | - | 250Vac |
| GF | - | X1 : 250Vac/1000Vdc Y2 : 250Vac/1000Vdc |
| MF | - | X1 : 250Vac/1000Vdc Y2 : 250Vac/1000Vdc |
| TF | A** | X1 : 305Vac/1500Vdc |
| | B** | Y2 : 305Vac/1500Vdc |
| | C** | X1 : 500Vac/1500Vdc |
| | D** | Y2 : 500Vac/1500Vdc |

⑥Capacitance

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 letter "R." In this case, all figures are significant digits. expressed by the capital if any alphabet, other than "R", is included, this indicates the specific part number is a non-standard part.

Ex.)

| Code | Capacitance |
|------|-------------|
| R50 | 0.50pF |
| 1R0 | 1.0pF |
| 100 | 10pF |
| 103 | 10000pF |

⑦Capacitance Tolerance

| Code | Capacitance Tolerance |
|------|----------------------------------|
| B | ±0.1pF |
| C | ±0.25pF |
| D | ±0.5pF (Less than 10pF) |
| | ±0.5% (10pF and over) |
| F | ±1% |
| G | ±2% |
| J | ±5% |
| K | ±10% |
| M | ±20% |
| R | Depends on individual standards. |
| W | ±0.05pF |

⑧Individual Specification Code

Expressed by three figures.

⑨Packaging

| Code | Packaging |
|-------|------------------------|
| L | ø180mm Embossed Taping |
| D/E/W | ø180mm Paper Taping |
| K | ø330mm Embossed Taping |
| J/F | ø330mm Paper Taping |
| T | Bulk Tray |

Please contact us if you find any part number not provided in this table.