Part Numbering

【Part Number】GRM188B11H102KA01D

GRM	18	8	B1	1H	102	K	A01	D
❶	❷	❸	❹	❺	❻	❼	❽	❾

muRata
INNOVATOR IN ELECTRONICS

❶Series

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 (Infortainment/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
GRT	AEC-Q200 Compliant Chip Multilayer Ceramic Capacitors for Automotive (Infortainment/Confort) & Industrial Equipment
GXT	AEC-Q200 Compliant Water Repellent Chip Multilayer Ceramic Capacitors for Automotive (Infortainment/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/Comfort) & Industrial Equipment

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muRata INNOVATOR IN ELECTRONICS

❶Series

Code	Series
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

❷Chip 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.

❸Dimension (T)

Except KR□/KC□/EVA	
Code	Dimension (T)
1	0.125mm
2	0.2mm
3	0.3mm
4	0.4mm
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
K	0.08mm
M	1.15mm
Q	1.5mm
S	0.16mm
T	0.18mm
X	Depends on individual standards.
Y	0.135mm

KR□/KC□/EVA Only	
Code	Dimension (T)
E	1.8mm
F	1.9mm
H	2.4mm
K	2.7mm
L	2.8mm
R	3.6mm
Q	3.7mm
T	4.8mm
V	6.2mm
W	6.4mm

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❹Temperature Characteristics

Code	Public STD Code		Temperature Characteristics			Operating Temperature Range	Capacitance Change Each Temperature (%)					
			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	C0G	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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❺Rated 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	H** L**	X1 : 250Vac/1000Vdc Y2 : 250Vac/1000Vdc
	U**	X1 : 500Vac/1000Vdc Y2 : 500Vac/1000Vdc
TF	A** B**	X1 : 305Vac/1500Vdc Y2 : 305Vac/1500Vdc
	C** D**	X1 : 500Vac/1500Vdc Y2 : 500Vac/1500Vdc

❼Capacitance 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

❽Individual Specification Code

Expressed by three figures.

❾Packaging

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

❻Capacitance

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