

● Part Numbering

Chip Monolithic Ceramic Capacitors

(Part Number)

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

① Product ID

② Series

Product ID	Code	Series
GR	M	Tin Plated Layer
	4	Only for Information Devices / Tip & Ring
ER	F	High Frequency and high Power Type
	H	High Frequency and High Power Type (Ribbon Terminal)
	A	High Frequency Type
	D	High Frequency Type (Ribbon Terminal)
GQ	M	High Frequency for Flow/Reflow Soldering
GM	A	Monolithic Microchip
GN	M	Capacitor Array
LL	L	Low ESL Wide Width Type
GJ	M	High Frequency Low Loss Type Tin Plated Type
	6	High Frequency Low Loss Type
GA	2	for AC250V (r.m.s.)
	3	Safety Standard Recognized Type
GC	P	Automotive Soldering Electrode
	M	Automotive Tin Plated Layer

③ Dimension (L×W)

Code	Dimension (L×W)	EIA
03	0.6×0.3 mm	0201
05	0.5×0.5 mm	0202
08	0.8×0.8 mm	0303
11	1.25×1.0 mm	0504
15	1.0×0.5 mm	0402
18	1.6×0.8 mm	0603
1D	1.4×1.4 mm	
1X	Depends on individual standards.	
21	2.0×1.25 mm	0805
22	2.8×2.8 mm	1111
31	3.2×1.6 mm	1206
32	3.2×2.5 mm	1210
3X	Depends on individual standards.	
42	4.5×2.0 mm	1808
43	4.5×3.2 mm	1812
52	5.7×2.8 mm	2211
55	5.7×5.0 mm	2220

④ Dimension (T)

Code	Dimension (T)
2	2-elements (Array Type)
3	0.3 mm
4	4-elements (Array Type)
5	0.5 mm
6	0.6 mm
7	0.7 mm
8	0.8 mm
9	0.85 mm
A	1.0 mm
B	1.25 mm
C	1.6 mm
D	2.0 mm
E	2.5 mm
F	3.2 mm
M	1.15 mm
N	1.35 mm
R	1.8 mm
S	2.8 mm
Q	1.5 mm
X	Depends on individual standards.

With the array type GNM series, "Dimension(T)" indicates the number of elements.

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⑤ Temperature Characteristics

Code	Temperature Characteristics	Temperature Range	Capacitance Change or Temperature Coefficient	Operating Temperature Range
1X	SL	20 to 85°C	+350 to -1000ppm/°C	-55 to 125°C
2C	CH	-55 to 125°C	0±60ppm/°C	-55 to 125°C
2P	PH	-25 to 85°C	-150±60ppm/°C	-25 to 85°C
2R	RH	-25 to 85°C	-220±60ppm/°C	-25 to 85°C
2S	SH	-25 to 85°C	-330±60ppm/°C	-25 to 85°C
2T	TH	-25 to 85°C	-470±60ppm/°C	-25 to 85°C
3C	CJ	-55 to 125°C	0±120ppm/°C	-55 to 125°C
3P	PJ	-25 to 85°C	-150±120ppm/°C	-25 to 85°C
3R	RJ	-25 to 85°C	-220±120ppm/°C	-25 to 85°C
3S	SJ	-25 to 85°C	-330±120ppm/°C	-25 to 85°C
3T	TJ	-25 to 85°C	-470±120ppm/°C	-25 to 85°C
3U	UJ	-25 to 85°C	-750±120ppm/°C	-25 to 85°C
4C	CK	-55 to 125°C	0±250ppm/°C	-55 to 125°C
5C	C0G	-55 to 125°C	0±30ppm/°C	-55 to 125°C
6C	C0H/CH *1	-55 to 125°C	0±60ppm/°C	-55 to 125°C
6P	P2H	-55 to 85°C	-150±60ppm/°C	-55 to 125°C
6R	R2H	-55 to 85°C	-220±60ppm/°C	-55 to 125°C
6S	S2H	-55 to 85°C	-330±60ppm/°C	-55 to 125°C
6T	T2H	-55 to 85°C	-470±60ppm/°C	-55 to 125°C
7C	CJ *1	-55 to 125°C	0±120ppm/°C	-55 to 125°C
7U	U2J	-55 to 85°C	-750±120ppm/°C	-55 to 125°C
8C	CK *1	-55 to 125°C	0±250ppm/°C	-55 to 125°C
B1	B *2	-25 to 85°C	±10%	-25 to 85°C
B3	B	-25 to 85°C	±10%	-25 to 85°C
E4	Z5U	10 to 85°C	+22, -56%	10 to 85°C
F1	F *2	-25 to 85°C	+30, -80%	-25 to 85°C
F5	Y5V	-30 to 85°C	+22, -82%	-30 to 85°C
R1	R *2	-55 to 125°C	±15%	-55 to 125°C
R3	R	-55 to 125°C	±15%	-55 to 125°C
R6	X5R	-55 to 85°C	±15%	-55 to 85°C
R7	X7R	-55 to 125°C	±15%	-55 to 125°C
C8	X6S	-55 to 105°C	±22%	-55 to 105°C
9E	ZLM	-25 to 20°C	-4700+100/-2500ppm/°C	-25 to 85°C
		20 to 85°C	-4700+500/-1000ppm/°C	

*1 ER series only.

*2 Add 50% of the rated voltage.

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⑥ Rated Voltage

Code	Rated Voltage
0G	DC4V
0J	DC6.3V
1A	DC10V
1C	DC16V
1E	DC25V
1H	DC50V
2A	DC100V
2D	DC200V
2E	DC250V
YD	DC300V
2H	DC500V
2J	DC630V
3A	DC1kV
3D	DC2kV
3F	DC3.15kV
E2	AC250V
GB	X2; AC250V (Safety Standard Recognized Type GB)
GC	X1, Y2; AC250V (Safety Standard Recognized Type GC)
GD	Y3; AC250V (Safety Standard Recognized Type GD)
GF	Y2; AC250V (Safety Standard Recognized Type GF)

⑦ Capacitance

Expressed by three figures. The unit is pico-farad (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

⑧ Capacitance Tolerance

Code	Capacitance Tolerance	TC	Series	Capacitance Step
B	±0.1pF	CΔ	GJM	≤5pF E24 Series, 1pF
C	±0.25pF	CΔ-SL	GRM/ERF/ERH/ERA/ERD/GQM	≤5pF * 1pF
		CΔ	GJM	<10pF E24 Series, 1pF
D	±0.5pF	CΔ-SL	GRM	6.0 to 9.0pF * 1pF
		CΔ	ERF/ERH/ERA/ERD/GQM/GJM	5.1 to 9.1pF E24 Series
G	±2%	CΔ	GJM	≥10pF E12 Series
		CΔ	GQM	≥10pF E24 Series
J	±5%	CΔ-SL	GRM/GA3	≥10pF E12 Series
		CΔ	ERF/ERH/ERA/ERD/GQM/GJM	≥10pF E24 Series
K	±10%	B,R,X7R,X5R,ZLM	GRM/GA3	E6 Series
			GR4	E12 Series
M	±20%	Z5U	GRM	E3 Series
		B,R,X7R	GMA/LLL	E6 Series
		X7R	GA2	E3 Series
Z	+80%, -20%	F,Y5V	GRM	E3 Series
R			Depends on individual standards.	

* E24 series is also available.

⑨ Individual Specification Code

Code	Series	Individual Specification	Temperature Characteristics Type *4	Inner Electrode	Undercoat Metal of Outer Electrode
A01	GRM *1	Standard Type	TC	Base Metal	Base Metal
	GRM *1/LLL/GNM		HiK		
A11	GRM *1	Special Dimension Type (Tolerances of LXWXT are ±0.15mm)	HiK	Base Metal	Base Metal
A12	GRM *1	Special Characteristics (Applied Voltage is X1.25 of Rated Voltage at High Temperature Load Test)	HiK	Base Metal	Base Metal
A35/A39	GRM *1	Special Dimension Type	HiK	Base Metal	Base Metal

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Code	Series	Individual Specification	Temperature Characteristics Type *4	Inner Electrode	Undercoat Metal of Outer Electrode
A61/A88/A92/A93	GRM *1	Special Characteristics (Under special control)	HiK	Base Metal	Base Metal
B01	GJM/GQM	Standard Type	TC	Base Metal (Cu)	Base Metal
C01	GRM *1	Standard Type	HiK	Base Metal	Precious Metal
C11	GRM *1	Special Dimension Type (Tolerances of LXW are ±0.2mm, others)	HiK	Base Metal	Precious Metal
C12	GRM *1	Special Dimension Type (Length is 3.2±0.2, Width is 1.6±0.2mm, Thickness is 1.2 ±0.1mm)	HiK	Base Metal	Precious Metal
D01	ERA/ERD/ERF/ERH	Standard Type (Non-coated type for ERH series)	TC	Precious Metal	Precious Metal
	GRM *1/GNM		TC		
	GRM *1/GMA/LLL/GNM		HiK		
D02	ERH	Standard Type (Coated with Resin)	TC	Precious Metal	Precious Metal
DB4	GJM	Special Dimension Type (Thickness is 0.25±0.05mm)	TC	Precious Metal	Precious Metal
E01	GRM *1	Standard Type (Thin Layer Large Capacitance Type)	HiK	Base Metal	Base Metal
E19/E34	GRM *1	Special Characteristics (Under Special Control)	HiK	Base Metal	Base Metal
E20	GRM *1	Special Dimension Type	HiK	Base Metal	Base Metal
E39	GRM *1	Special Dimension Type	HiK	Base Metal	Base Metal
V01	GRM *2	Standard Type (New Ceramic Material)	TC	Precious Metal	Precious Metal
W01	GRM *3/GR4/GA2/GA3	Tolerance of Thickness is +0/-0.3mm	HiK	Base Metal	Base Metal
	GRM *3		TC		
W02	GA3	Tolerance of Thickness is ±0.2mm	HiK	Base Metal	Base Metal
W03	GRM *3	Tolerance of Thickness is ±0.2mm	HiK	Base Metal	Base Metal
W07	GRM *3	Tolerance of Thickness is ±0.1mm	HiK	Base Metal	Base Metal
Y01	GRM *3	Tolerance of Thickness is +0/-0.3mm	TC	Precious Metal	Precious Metal
	GRM *3		HiK		
Y02	GA3	Tolerance of Thickness is ±0.3mm	HiK	Precious Metal	Precious Metal
	GRM *3/GA3		TC		
Y06	GA3	Thickness is 2.7±0.3mm	HiK	Precious Metal	Precious Metal
Y21	GRM *2	Standard Type	TC	Precious Metal	Precious Metal
Z01	GRM *1	Standard Type (New Ceramic Material)	TC	Precious Metal	Precious Metal

*1 Apply to rated voltage 100V and under. *2 Apply to rated voltage 200/500V. *3 Apply to rated voltage 250V, 630V to 3.15kV.

*4 "TC" means Temperature Compensating Type and "HiK" means High Dielectric Type.

⑩ Packaging

Code	Packaging
L	ø178mm Plastic Taping
D	ø178mm Paper Taping
K	ø330mm Plastic Taping
J	ø330mm Paper Taping
E	ø178mm Special Packaging
F	ø330mm Special Packaging
B	Bulk
C	Bulk Case
T	Bulk Tray