

## ● Part Numbering

### Chip Monolithic Ceramic Capacitors

(Part Number)

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

#### ① Product ID

#### ② Series

Product ID	Code	Series
<b>GR</b>	<b>M</b>	Tin Plated Layer
	<b>4</b>	Only for Information Devices / Tip & Ring
	<b>7</b>	Only for Camera Flash Circuit
<b>ER</b>	<b>B</b>	High Frequency Type
<b>GQ</b>	<b>M</b>	High Frequency for Flow/Reflow Soldering
<b>GM</b>	<b>A</b>	Monolithic Microchip
<b>GN</b>	<b>M</b>	Capacitor Array
<b>LL</b>	<b>L</b>	Low ESL Wide Width Type
	<b>A</b>	Eight-termination Low ESL Type
	<b>M</b>	Ten-termination Low ESL Type
<b>GJ</b>	<b>M</b>	High Frequency Low Loss Type Tin Plated Type
<b>GA</b>	<b>2</b>	for AC250V (r.m.s.)
	<b>3</b>	Safety Standard Recognized Type


#### ③ Dimension (L×W)

Code	Dimension (L×W)	EIA
<b>02</b>	0.4×0.2mm	01005
<b>03</b>	0.6×0.3mm	0201
<b>05</b>	0.5×0.5mm	0202
<b>08</b>	0.8×0.8mm	0303
<b>11</b>	1.25×1.0mm	0504
<b>15</b>	1.0×0.5mm	0402
<b>18</b>	1.6×0.8mm	0603
<b>1D</b>	1.4×1.4mm	
<b>1X</b>	Depends on individual standards.	
<b>21</b>	2.0×1.25mm	0805
<b>22</b>	2.8×2.8mm	1111
<b>31</b>	3.2×1.6mm	1206
<b>32</b>	3.2×2.5mm	1210
<b>3X</b>	Depends on individual standards.	
<b>42</b>	4.5×2.0mm	1808
<b>43</b>	4.5×3.2mm	1812
<b>52</b>	5.7×2.8mm	2211
<b>55</b>	5.7×5.0mm	2220

#### ④ Dimension (T)

Code	Dimension (T)
<b>2</b>	0.2mm
<b>2</b>	2-elements (Array Type)
<b>3</b>	0.3mm
<b>4</b>	4-elements (Array Type)
<b>5</b>	0.5mm
<b>6</b>	0.6mm
<b>7</b>	0.7mm
<b>8</b>	0.8mm
<b>9</b>	0.85mm
<b>A</b>	1.0mm
<b>B</b>	1.25mm
<b>C</b>	1.6mm
<b>D</b>	2.0mm
<b>E</b>	2.5mm
<b>F</b>	3.2mm
<b>M</b>	1.15mm
<b>N</b>	1.35mm
<b>R</b>	1.8mm
<b>S</b>	2.8mm
<b>Q</b>	1.5mm
<b>X</b>	Depends on individual standards.

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

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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 85°C	-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
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	EIA	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
9E	ZLM	*3	20°C	-25 to 20°C	-4700+100/-2500ppm/°C	-25 to 85°C
				20 to 85°C	-4700+500/-1000ppm/°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,\*4 Murata Temperature Characteristic Code.

\*4 Apply DC350V bias.

\*5 No DC bias.

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● 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.
<b>1X</b>	-	-	-	-	-	-
<b>2C</b>	0.82	-0.45	0.49	-0.27	0.33	-0.18
<b>2P</b>	-	-	1.32	0.41	0.88	0.27
<b>2R</b>	-	-	1.70	0.72	1.13	0.48
<b>2S</b>	-	-	2.30	1.22	1.54	0.81
<b>2T</b>	-	-	3.07	1.85	2.05	1.23
<b>3C</b>	1.37	-0.90	0.82	-0.54	0.55	-0.36
<b>3P</b>	-	-	1.65	0.14	1.10	0.09
<b>3R</b>	-	-	2.03	0.45	1.35	0.30
<b>3S</b>	-	-	2.63	0.95	1.76	0.63
<b>3T</b>	-	-	3.40	1.58	2.27	1.05
<b>3U</b>	-	-	4.94	2.84	3.29	1.89
<b>4C</b>	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.
<b>5C/5G</b>	0.58	-0.24	0.40	-0.17	0.25	-0.11
<b>6C</b>	0.87	-0.48	0.59	-0.33	0.38	-0.21
<b>6P</b>	2.33	0.72	1.61	0.50	1.02	0.32
<b>6R</b>	3.02	1.28	2.08	0.88	1.32	0.56
<b>6S</b>	4.09	2.16	2.81	1.49	1.79	0.95
<b>6T</b>	5.46	3.28	3.75	2.26	2.39	1.44
<b>7U</b>	8.78	5.04	6.04	3.47	3.84	2.21


⑥ Rated Voltage

Code	Rated Voltage
<b>0G</b>	DC4V
<b>0J</b>	DC6.3V
<b>1A</b>	DC10V
<b>1C</b>	DC16V
<b>1E</b>	DC25V
<b>1H</b>	DC50V
<b>2A</b>	DC100V
<b>2D</b>	DC200V
<b>2E</b>	DC250V
<b>YD</b>	DC300V
<b>2H</b>	DC500V
<b>2J</b>	DC630V
<b>3A</b>	DC1kV
<b>3D</b>	DC2kV
<b>3F</b>	DC3.15kV
<b>BB</b>	DC350V (for Camera Flash Circuit)
<b>E2</b>	AC250V
<b>GB</b>	X2; AC250V (Safety Standard Recognized Type GB)
<b>GC</b>	X1/Y2; AC250V (Safety Standard Recognized Type GC)
<b>GD</b>	Y3; AC250V (Safety Standard Recognized Type GD)
<b>GF</b>	Y2, X1/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
<b>R50</b>	0.5pF
<b>1R0</b>	1.0pF
<b>100</b>	10pF
<b>103</b>	10000pF

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⑧ Capacitance Tolerance

Code	Capacitance Tolerance	TC	Series	Capacitance Step	
<b>B</b>	±0.1pF	CΔ	<b>GRM/GJM</b>	≤5pF	E24 Series, 1pF
<b>C</b>	±0.25pF	CΔ-SL	<b>GRM/ERB/GQM</b>	≤5pF	* 1pF
		CΔ	<b>GJM</b>	<10pF	E24 Series, 1pF
<b>D</b>	±0.5pF	CΔ-SL	<b>GRM</b>	6.0 to 9.0pF	* 1pF
		CΔ	<b>ERB/GQM/GJM</b>	5.1 to 9.1pF	E24 Series
<b>F</b>	±1%	CΔ	<b>GRM03/15, GJM03/15</b>	5.0 to 9.9pF	0.1pF
<b>G</b>	±2%	CΔ	<b>GJM</b>	≥10pF	E12 Series
		CΔ	<b>GQM</b>	≥10pF	E24 Series
		CΔ	<b>GRM03/15, GJM03/15</b>	2.0 to 9.9pF	0.1pF
<b>J</b>	±5%	CΔ-SL	<b>GRM/GA3</b>	≥10pF	E12 Series
		CΔ	<b>ERB/GQM/GJM</b>	≥10pF	E24 Series
		CΔ	<b>GRM03/15, GJM03/15</b>	1.0 to 4.9pF	0.1pF
<b>K</b>	±10%	B, R, X7R, X5R, ZLM	<b>GRM/GR7/GA3</b>	E6 Series	
			<b>GR4</b>	E12 Series	
		CΔ	<b>GRM03/15, GJM03/15</b>	0.2 to 1.9pF	0.1pF
<b>M</b>	±20%	Z5U	<b>GRM</b>	E3 Series	
		B, R, X7R, X7S	<b>GRM/GMA/LLL/LLA/LLM</b>	E6 Series	
		X7R	<b>GA2</b>	E3 Series	
		CΔ	<b>GRM03/15, GJM03/15</b>	0.1 to 0.9pF	0.1pF
<b>Z</b>	+80%, -20%	F, Y5V	<b>GRM</b>	E3 Series	
<b>R</b>			Depends on individual standards.		

\* E24 series is also available.

⑨ Individual Specification Code

Expressed by three figures.

⑩ Packaging

Code	Packaging
<b>L</b>	ø178mm Embossed Taping
<b>D</b>	ø178mm Paper Taping
<b>K</b>	ø330mm Embossed Taping
<b>J</b>	ø330mm Paper Taping
<b>E</b>	ø178mm Special Packaging
<b>F</b>	ø330mm Special Packaging
<b>B</b>	Bulk
<b>C</b>	Bulk Case
<b>T</b>	Bulk Tray