

## ● 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
<b>GR</b>	<b>J</b>	Soft Termination Type
	<b>M</b>	Tin Plated Layer
	<b>3</b>	Large Capacitance and High Allowable Ripple Current
	<b>4</b>	Only for Information Devices
	<b>7</b>	Only for Camera Flash Circuit
<b>GQ</b>	<b>M</b>	High Frequency for Flow/Reflow Soldering
<b>GM</b>	<b>A</b>	Monolithic Microchip
	<b>D</b>	For Bonding
<b>GN</b>	<b>M</b>	Capacitor Array
<b>LL</b>	<b>L</b>	Low ESL Type
	<b>R</b>	Controlled ESR Low ESL Type
	<b>A</b>	8-termination Low ESL Type
	<b>M</b>	10-termination Low ESL Type
<b>GJ</b>	<b>M</b>	High Frequency Low Loss Type
	<b>4</b>	Low Distortion Type
	<b>8</b>	Low Acoustic Type
<b>GA</b>	<b>2</b>	For AC250V (r.m.s.)
	<b>3</b>	Safety Standard Certified Type
<b>GW</b>	<b>M</b>	For Decoupling

#### ③ Dimensions (L×W)

Code	Dimensions (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>0D</b>	0.38×0.38mm	015015
<b>0M</b>	0.9×0.6mm	0302
<b>15</b>	1.0×0.5mm	0402
<b>18</b>	1.6×0.8mm	0603
<b>1M</b>	1.37×1.0mm	0504
<b>1U</b>	0.6×1.0mm	02404
<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>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) (Except GNM)

Code	Dimension (T)
<b>2</b>	0.2mm
<b>3</b>	0.3mm
<b>4</b>	0.4mm
<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>Q</b>	1.5mm
<b>R</b>	1.8mm
<b>S</b>	2.8mm
<b>X</b>	Depends on individual standards.

#### ④ Elements (GNM Only)

Code	Elements
<b>2</b>	2-elements
<b>4</b>	4-elements

Continued on the following page.

Continued from the preceding page.

⑤ 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		-25°C		-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
1C	CG	JIS	20°C	20 to 125°C	0±30ppm/°C	-55 to 125°C	0.54	-0.23	0.33	-0.14	0.22	-0.09
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
2P	PH	JIS	20°C	20 to 85°C	-150±60ppm/°C	-25 to 85°C	-	-	1.32	0.41	0.88	0.27
2R	RH	JIS	20°C	20 to 85°C	-220±60ppm/°C	-25 to 85°C	-	-	1.7	0.72	1.13	0.48
2S	SH	JIS	20°C	20 to 85°C	-330±60ppm/°C	-25 to 85°C	-	-	2.3	1.22	1.54	0.81
2T	TH	JIS	20°C	20 to 85°C	-470±60ppm/°C	-25 to 85°C	-	-	3.07	1.85	2.05	1.23
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
3P	PJ	JIS	20°C	20 to 85°C	-150±120ppm/°C	-25 to 85°C	-	-	1.65	0.14	1.1	0.09
3R	RJ	JIS	20°C	20 to 85°C	-220±120ppm/°C	-25 to 85°C	-	-	2.03	0.45	1.35	0.3
3S	SJ	JIS	20°C	20 to 85°C	-330±120ppm/°C	-25 to 85°C	-	-	2.63	0.95	1.76	0.63
3T	TJ	JIS	20°C	20 to 85°C	-470±120ppm/°C	-25 to 85°C	-	-	3.4	1.58	2.27	1.05
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
4P	PK	JIS	20°C	20 to 85°C	-150±250ppm/°C	-25 to 85°C	-	-	2.36	-0.45	1.57	-0.3
4R	RK	JIS	20°C	20 to 85°C	-220±250ppm/°C	-25 to 85°C	-	-	2.74	-0.14	1.83	-0.09
4S	SK	JIS	20°C	20 to 85°C	-330±250ppm/°C	-25 to 85°C	-	-	3.35	0.36	2.23	0.24
4T	TK	JIS	20°C	20 to 85°C	-470±250ppm/°C	-25 to 85°C	-	-	4.12	0.99	2.74	0.66
4U	UK	JIS	20°C	20 to 85°C	-750±250ppm/°C	-25 to 85°C	-	-	5.65	2.25	3.77	1.5
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
6C	C0H	EIA	25°C	25 to 125°C	0±60ppm/°C	-55 to 125°C	0.87	-0.48	0.59	-0.33	0.38	-0.21
6P	P2H	EIA	25°C	25 to 85°C	-150±60ppm/°C	-55 to 125°C	2.33	0.72	1.61	0.5	1.02	0.32
6R	R2H	EIA	25°C	25 to 85°C	-220±60ppm/°C	-55 to 125°C	3.02	1.28	2.08	0.88	1.32	0.56
6S	S2H	EIA	25°C	25 to 85°C	-330±60ppm/°C	-55 to 125°C	4.09	2.16	2.81	1.49	1.79	0.95
6T	T2H	EIA	25°C	25 to 85°C	-470±60ppm/°C	-55 to 125°C	5.46	3.28	3.75	2.26	2.39	1.44
7U	U2J	EIA	25°C	25 to 125°C *5	-750±120ppm/°C	-55 to 125°C	8.78	5.04	6.04	3.47	3.84	2.21
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	-	-	-	-	-	-
C3	C	JIS	20°C	-25 to 85°C	±20%	-25 to 125°C	-	-	-	-	-	-
				85 to 125°C	+15%, -30%		-	-	-	-	-	-
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	-	-	-	-	-	-
D3	D	JIS	20°C	-25 to 125°C	+20%, -30%	-25 to 85°C	-	-	-	-	-	-
D6	X5T	EIA	25°C	-55 to 125°C	+22%, -33%	-55 to 125°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	-	-	-	-	-	-
E1	E (1/2Ur)	JIS	20°C	-25 to 85°C	+20%, -55%	-25 to 85°C	-	-	-	-	-	-
E4	Z5U	EIA	25°C	10 to 85°C	+22%, -56%	10 to 85°C	-	-	-	-	-	-
E7	X7U	EIA	25°C	-55 to 125°C	+22%, -56%	-55 to 125°C	-	-	-	-	-	-
F1	F *1	JIS	20°C	-25 to 85°C	+30%, -80%	-25 to 85°C	-	-	-	-	-	-
F4	Z5V	EIA	25°C	10 to 85°C	+22%, -82%	-20 to 85°C	-	-	-	-	-	-
F5	Y5V	EIA	25°C	-30 to 85°C	+22%, -82%	-30 to 85°C	-	-	-	-	-	-
J1	JA	*2	20°C	-25 to 105°C	-20% max.	-25 to 105°C	-	-	-	-	-	-
L8	X8L	*2	25°C	-55 to 150°C	+15%, -40%	-55 to 150°C	-	-	-	-	-	-

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

\*2 Murata Temperature Characteristic Code.

\*5 Rated Voltage 100Vdc max: 25 to 85°C

Continued on the following page. ↗

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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		-25°C		-10°C			
					Max.		Min.	Max.	Min.	Max.	Min.	
R1	R *1	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	-	-	-	-	-	-
R8	R *1	JIS	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	-	*2	25°C	-55 to 125°C	±10% *3	-55 to 125°C	-	-	-	-	-	-
					+22%, -33% *4		-	-	-	-	-	-

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

\*2 Murata Temperature Characteristic Code.

\*3 Apply DC350V bias.

\*4 No DC bias.

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
2W	DC450V
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.

If any alphabet, other than "R", is included, this indicates the specific part number is a non-standard part.

Ex.)

Code	Capacitance
R50	0.5pF
1R0	1.0pF
100	10pF
103	10000pF

⑧ Capacitance Tolerance

Code	Capacitance Tolerance
B	±0.1pF
C	±0.25pF
D	±0.5pF (10pF and below)
	±0.5% (10pF and over)
F	±1%
G	±2%
J	±5%
K	±10%
M	±20%
N	±30%
R	Depends on individual standards.
W	±0.05pF
X	Depends on individual standards.
Y	Depends on individual standards.
Z	+80/-20%

⑨ Individual Specification Code (Except LLR)

Expressed by three figures.

⑩ ESR (LLR Only)

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

⑪ 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

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