

## GRM155-0402-Sample-Kit

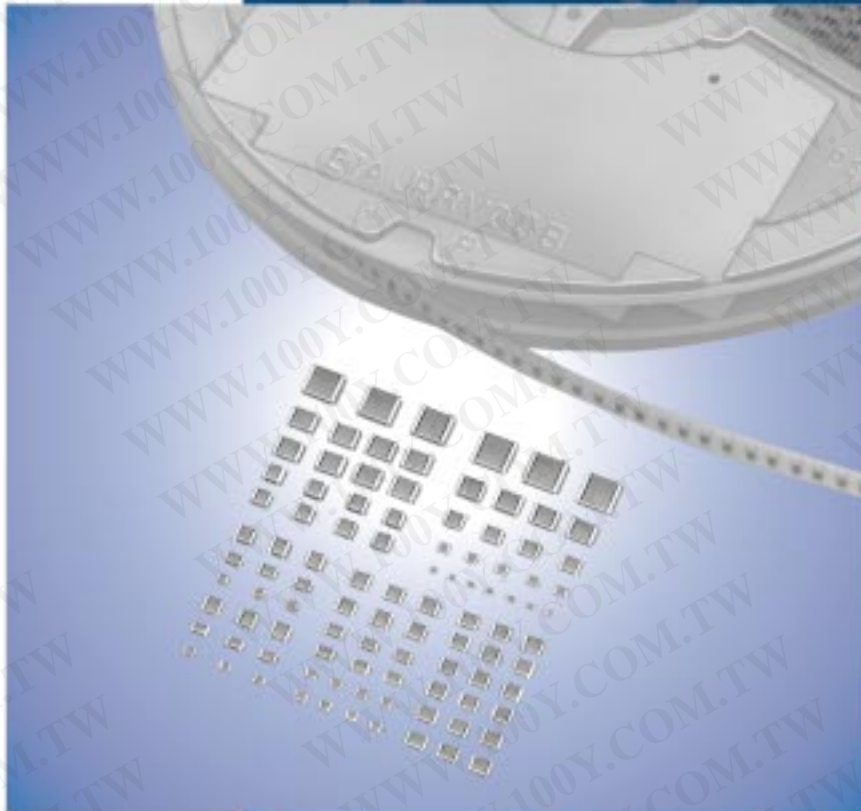
概述:Murata GRM155 系列共 80 種型號, 每種 50 顆, 一共 4000 顆。

0402 貼片電容樣品本 詳細清單

序號	物料描述	型號
1	日本 muRata C0402, 0.5pF±0.1pF 50V COG	GRM1555C1HR50BZ01D
2	日本 muRata C0402, 0.75pF±0.25pF 50V COG	GRM1555C1HR75CZ01D
3	日本 muRata C0402, 1pF±0.25pF 50V COG	GRM1555C1H1R0CZ01D
4	日本 muRata C0402, 1.2pF±0.25pF 50V COG	GRM1555C1H1R2CZ01D
5	日本 muRata C0402, 1.3pF±0.25pF 50V COG	GRM1555C1H1R3CZ01D
6	日本 muRata C0402, 1.5pF±0.25pF 50V COG	GRM1555C1H1R5CZ01D
7	日本 muRata C0402, 1.6pF±0.25pF 50V COG	GRM1555C1H1R6CZ01D
8	日本 muRata C0402, 1.8pF±0.25pF 50V COG	GRM1555C1H1R8CZ01D
9	日本 muRata C0402, 2pF±0.25pF 50V COG	GRM1555C1H2R0CZ01D
10	日本 muRata C0402, 2.2pF±0.25pF 50V COG	GRM1555C1H2R2CZ01D
11	日本 muRata C0402, 2.4pF±0.25pF 50V COG	GRM1555C1H2R4CZ01D
12	日本 muRata C0402, 2.5pF±0.25pF 50V COG	GRM1555C1H2R5CZ01D
13	日本 muRata C0402, 2.7pF±0.25pF 50V COG	GRM1555C1H2R7CZ01D
14	日本 muRata C0402, 3pF±0.25pF 50V COG	GRM1555C1H3R0CZ01D
15	日本 muRata C0402, 3.3pF±0.25pF 50V COG	GRM1555C1H3R3CZ01D
16	日本 muRata C0402, 3.6pF±0.25pF 50V COG	GRM1555C1H3R6CZ01D
17	日本 muRata C0402, 3.9pF±0.25pF 50V COG	GRM1555C1H3R9CZ01D
18	日本 muRata C0402, 4.3pF±0.25pF 50V COG	GRM1555C1H4R3CZ01D
19	日本 muRata C0402, 4.7pF±0.25pF 50V COG	GRM1555C1H4R7CZ01D
20	日本 muRata C0402, 5pF±0.25pF 50V COG	GRM1555C1H5R0CZ01D
21	日本 muRata C0402, 6pF±0.25pF 50V COG	GRM1555C1H6R0CZ01D
22	日本 muRata C0402, 6.2pF±0.5pF 50V COG	GRM1555C1H6R2DZ01D
23	日本 muRata C0402, 6.8pF±0.25pF 50V COG	GRM1555C1H6R8CZ01D
24	日本 muRata C0402, 7pF±0.25pF 50V COG	GRM1555C1H7R0CZ01D
25	日本 muRata C0402, 7.5pF±0.5pF 50V COG	GRM1555C1H7R5DZ01D
26	日本 muRata C0402, 8pF±0.25pF 50V COG	GRM1555C1H8R0CZ01D
27	日本 muRata C0402, 8.2pF±0.5pF 50V COG	GRM1555C1H8R2DZ01D
28	日本 muRata C0402, 9pF±0.25pF 50V COG	GRM1555C1H9R0CZ01D
29	日本 muRata C0402, 10pF±5% 50V COG	GRM1555C1H100JZ01D
30	日本 muRata C0402, 11pF±5% 50V COG	GRM1555C1H110JA01D
31	日本 muRata C0402, 12pF±5% 50V COG	GRM1555C1H120JZ01D
32	日本 muRata C0402, 15pF±5% 50V COG	GRM1555C1H150JZ01D
33	日本 muRata C0402, 16pF±5% 50V COG	GRM1555C1H160JA01D
34	日本 muRata C0402, 18pF±5% 50V COG	GRM1555C1H180JZ01D
35	日本 muRata C0402, 20pF±5% 50V COG	GRM1555C1H200JZ01D
36	日本 muRata C0402, 22pF±5% 50V COG	GRM1555C1H220JZ01D
37	日本 muRata C0402, 24pF±5% 50V COG	GRM1555C1H240JZ01D

38	日本 muRata C0402, 27pF ±5% 50V COG	GRM1555C1H270JZ01D
39	日本 muRata C0402, 30pF ±5% 50V COG	GRM1555C1H300JZ01D
40	日本 muRata C0402, 33pF ±5% 50V COG	GRM1555C1H330JZ01D
41	日本 muRata C0402, 36pF ±5% 50V COG	GRM1555C1H360JZ01D
42	日本 muRata C0402, 39pF ±5% 50V COG	GRM1555C1H390JZ01D
43	日本 muRata C0402, 43pF ±5% 50V COG	GRM1555C1H430JZ01D
44	日本 muRata C0402, 47pF ±5% 50V COG	GRM1555C1H470JZ01D
45	日本 muRata C0402, 51pF ±5% 50V COG	GRM1555C1H510JZ01D
46	日本 muRata C0402, 56pF ±5% 50V COG	GRM1555C1H560JZ01D
47	日本 muRata C0402, 62pF ±5% 50V COG	GRM1555C1H620JA01D
48	日本 muRata C0402, 68pF ±5% 50V COG	GRM1555C1H680JZ01D
49	日本 muRata C0402, 82pF ±5% 50V COG	GRM1555C1H820JZ01D
50	日本 muRata C0402, 100pF ±5% 50V COG	GRM1555C1H101JZ01D
51	日本 muRata C0402, 110pF ±5% 50V COG	GRM1555C1H111JA01D
52	日本 muRata C0402, 120pF ±5% 50V COG	GRM1555C1H121JA01D
53	日本 muRata C0402, 150pF ±5% 50V COG	GRM1555C1H151JA01D
54	日本 muRata C0402, 180pF ±5% 50V COG	GRM1555C1H181JA01D
55	日本 muRata C0402, 200pF ±5% 50V COG	GRM1555C1H201JA01D
56	日本 muRata C0402, 220pF ±5% 50V COG	GRM1555C1H221JA01D
57	日本 muRata C0402, 330pF ±10% 50V X7R	GRM155R71H331KA01D
58	日本 muRata C0402, 470pF ±10% 50V X7R	GRM155R71H471KA01D
59	日本 muRata C0402, 680pF ±10% 50V X7R	GRM155R71H681KA01D
60	日本 muRata C0402, 820pF ±10% 50V X7R	GRM155R71H821KA01D
61	日本 muRata C0402, 1nF ±10% 50V X7R	GRM155R71H102KA01D
62	日本 muRata C0402, 1.5nF ±5% 50V X7R	GRM155R71H152JA01D
63	日本 muRata C0402, 2.2nF ±10% 50V X7R	GRM155R71H222KA01D
64	日本 muRata C0402, 3.3nF ±10% 50V X7R	GRM155R71H332KA01D
65	日本 muRata C0402, 4.7nF ±10% 50V X7R	GRM155R71H472KA01D
66	日本 muRata C0402, 6.8nF ±10% 50V X7R	GRM155R71H682KA88D
67	日本 muRata C0402, 8.2nF ±10% 50V X7R	GRM155R71H822KA88D
68	日本 muRata C0402, 10nF ±10% 50V X7R	GRM155R71H103KA88D
69	日本 muRata C0402, 15nF ±10% 25V X7R	GRM155R71E153KA61D
70	日本 muRata C0402, 22nF ±10% 25V X7R	GRM155R71E223KA61D
71	日本 muRata C0402, 33nF ±10% 16V X7R	GRM155R71C333KA01D
72	日本 muRata C0402, 47nF ±10% 16V X7R	GRM155R71C473KA01D
73	日本 muRata C0402, 68nF ±10% 16V X7R	GRM155R71C683KA88D
74	日本 muRata C0402, 82nF ±10% 16V X7R	GRM155R71C823KA88D
75	日本 muRata C0402, 100nF ±10% 16V X7R	GRM155R71C104KA88D
76	日本 muRata C0402, 220nF ±10% 10V X5R	GRM155R61A224KE19D
77	日本 muRata C0402, 470nF ±10% 10V X5R	GRM155R61A474KE15D
78	日本 muRata C0402, 680nF ±10% 10V X5R	GRM155R61A684KE15D
79	日本 muRata C0402, 820nF ±10% 10V X5R	GRM155R61A824KE15D
80	日本 muRata C0402, 1uF ±10% 10V X5R	GRM155R61A105KE15D

# Chip Monolithic Ceramic Capacitors



**muRata**

*Innovator  
in Electronics*

Murata  
Manufacturing Co., Ltd.

Cat.No.C02E-16

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### for EU RoHS Compliant

- All the products in this catalog comply with EU RoHS.
- EU RoHS is "the European Directive 2002/95/EC on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment".
- For more details, please refer to our website 'Murata's Approach for EU RoHS' (<http://www.murata.com/info/rohs.html>).

# Chip Monolithic Ceramic Capacitors (Medium Voltage)

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## ● 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>D</b>
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>4</b>	Only for Information Devices / Tip & Ring
	<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>GA</b>	<b>2</b>	For AC250V (r.m.s.)
	<b>3</b>	Safety Standard Certified Type

#### 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>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>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. 

Please check the MURATA home page (<http://www.murata.com/>) if you cannot find the part number in the catalog.

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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	C0G *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	C0H *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 125°C *6	-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
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
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	*3	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
W0	-	-	25°C	-55 to 125°C	±10% *4 +22, -33% *5	-55 to 125°C

\*1 Please refer to table for Capacitance Change under reference temperature.


\*2 Capacitance change is specified with 50% rated voltage applied.

\*3 Murata Temperature Characteristic Code.

\*4 Apply DC350V bias.

\*5 No DC bias.

\*6 Rated Voltage 100Vdc max : 25 to 85°C

Continued on the following page. 

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


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
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.

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

Continued on the following page. 

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Continued from the preceding page.

⑧ Capacitance Tolerance

Code	Capacitance Tolerance	TC	Series	Capacitance Step	
<b>W</b>	±0.05pF	CΔ	<b>GRM/GJM</b>	≤9.9pF	0.1pF
			<b>GRM/GJM</b>	≤9.9pF	0.1pF
<b>B</b>	±0.1pF	CΔ	<b>GQM</b>	≤1pF	0.1pF
				1.1 to 9.9pF	1pF Step and E24 Series
<b>C</b>	±0.25pF	CΔ	<b>GRM/GJM</b>	≤9.9pF	0.1pF
		except CΔ	<b>GRM</b>	≤5pF	* 1pF
		CΔ	<b>GQM</b>	≤1pF	0.1pF
<b>D</b>	±0.5pF	CΔ	<b>GRM/GJM</b>	5.1 to 9.9pF	0.1pF
		except CΔ	<b>GRM</b>	5.1 to 9.9pF	* 1pF
		CΔ	<b>GQM</b>	5.1 to 9.9pF	1pF Step and E24 Series
<b>G</b>	±2%	CΔ	<b>GJM</b>	≥10pF	E12 Series
		CΔ	<b>GQM</b>	≥10pF	E24 Series
<b>J</b>	±5%	CΔ, SL, U2J	<b>GRM/GA3</b>	≥10pF	E12 Series
		CΔ	<b>GQM/GJM</b>	≥10pF	E24 Series
<b>K</b>	±10%	B, R, X7R, X5R, ZLM	<b>GRJ/GRM/GR7/GA3</b>	E6 Series	
		C0G	<b>GNM</b>	E6 Series	
		B, R, X7R, X5R, ZLM	<b>GR4, GMD</b>	E12 Series	
<b>M</b>	±20%	B, R, X7R, X7S	<b>GRM/GMA</b>	E6 Series	
		X5R, X7R, X7S	<b>GNM</b>	E3 Series	
		X7R	<b>GA2</b>	E3 Series	
		X5R, X7R, X7S, X6S	<b>LLL/LLR/LLA/LLM</b>	E3 Series	
<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 (Except LLR)

Expressed by three figures.

⑨ ESR (LLR Only)

Code	ESR
<b>E01</b>	100mΩ
<b>E03</b>	220mΩ
<b>E05</b>	470mΩ
<b>E07</b>	1000mΩ

⑩ Packaging

Code	Packaging
<b>L</b>	ø180mm Embossed Taping
<b>D</b>	ø180mm Paper Taping
<b>E</b>	ø180mm Paper Taping (LLL15)
<b>K</b>	ø330mm Embossed Taping
<b>J</b>	ø330mm Paper Taping
<b>F</b>	ø330mm Paper Taping (LLL15)
<b>B</b>	Bulk
<b>C</b>	Bulk Case
<b>T</b>	Bulk Tray

Please check the MURATA home page (<http://www.murata.com/>) if you cannot find the part number in the catalog.

## Selection Guide For Chip Monolithic Ceramic Capacitors

Function	Type	Series
Decoupling, Smoothing	High Capacitance	GRM (X5R, X7R, Y5V etc.) 68pF-100μF
	Array (2 or 4 Elements)	GNM 10pF-2.2μF
Frequency Control/Tuning, Impedance Matching	Class 1 TC's	GRM (C0G) 0.1pF-0.1μF
		GRM (U2J etc.)
High Speed Decoupling	Low Inductance (Reverse Geometry)	LLL 2200pF-10μF
	Low Inductance (Controlled ESR)	LLR 1.0μF
	Low Inductance (Multi-Termination)	LLA/LLM (From 1GHz) 0.01μF-4.7μF
High Frequency	Low ESR, Ultra Small	GJM (500MHz to 10GHz) 0.1pF-33pF
	Lowest ESR	GQM (500MHz to 10GHz) 0.1pF-100pF
Optical Communications	Wire-Die-Bonding	GMA 100pF-0.47μF GMD 100pF-1μF
Medium Voltage High Frequency Snubber	250V/630V/1kV/2kV/3.15kV Low Dissipation	GRM (C0G, U2J) 10pF-10000pF
Medium Voltage LCD Backlight Inverter	3.15kV Low Dissipation	GRM (C0G) 5pF-47pF
Medium Voltage Decoupling, Smoothing	250V/630V/1kV High Capacitance	GRM (X7R) 220pF-1μF
	250V/630V/1kV Soft Termination Type	GRJ (X7R) 470pF-1μF
Medium Voltage Only for Camera Flash Circuit	350V High Capacitance	GR7 10000pF-47000pF
Medium Voltage Only for Information Devices	2kV High Capacitance	GR4 100pF-10000pF
	Safety Standard Certified	Type GD 10pF-4700pF Type GF 10pF-4700pF
AC Lines Noise Removal	Safety Standard Certified	Type GC 100pF-330pF Type GF 470pF-4700pF Type GB 10000pF-56000pF
	AC250V which meets Japanese Law	GA2 470pF-0.1μF
Automotive (Powertrain, Safety Equipment)	High Capacitance	GCM (X7R etc.) 100pF-47μF
	Class 1 TC's	GCM (C0G etc.) 1.0pF-56000pF
Medium Voltage for Automotive (Powertrain, Safety Equipment)	250V/630V Low Dissipation	GCM (U2J) 10pF-10000pF
	250V/630V Soft Termination Type	GCJ (X7R) 1000pF-0.47μF

Applications?

# Chip Monolithic Ceramic Capacitors

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For General  
GRM Series

Array  
GNM Series

Low ESL  
LLL Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

# Chip Monolithic Ceramic Capacitors



## For General Purpose GRM Series

### ■ Features

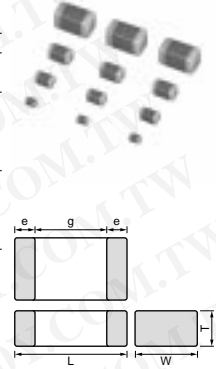
1. Higher resistance of solder-leaching due to the Ni-barriered termination, applicable for reflow-soldering, and flow-soldering (GRM18/21/31 type only).
2. The GRM series is a lead free product.
3. Smaller size and higher capacitance value.
4. High reliability and no polarity.
5. Excellent pulse response and noise reduction due to the low impedance at high frequency.
6. The GRM series is available in paper or embossed tape and reel packaging for automatic placement. Bulk case packaging is also available for GRM15/18/21(T=0.6,1.25).
7. TA replacement.

### ■ Applications

General electronic equipment

Part Number	Dimensions (mm)				
	L	W	T	e	g min.
GRM022	0.4±0.02	0.2±0.02	0.2±0.02	0.07 to 0.14	0.13
GRM033	0.6±0.03	0.3±0.03	0.3±0.03	0.1 to 0.2	0.2
GRM15X	1.0±0.05	0.5±0.05	0.25±0.05	0.1 to 0.3	0.4
GRM153			0.3±0.03		
GRM155	1.6±0.1	0.8±0.1	0.5±0.05	0.15 to 0.35	0.3
GRM185			0.8±0.1		
GRM188*	2.0±0.1	1.25±0.1	0.6±0.1	0.2 to 0.7	0.7
GRM216			0.85±0.1		
GRM219			1.0±0/-0.2		
GRM21A			1.25±0.1		
GRM21B	3.2±0.15	1.6±0.15	0.6±0.1	0.3 to 0.8	1.5
GRM316			0.85±0.1		
GRM319	3.2±0.2	1.6±0.2	1.15±0.1	0.3 min.	1.0
GRM31M			1.6±0.2		
GRM31C	3.2±0.3	2.5±0.2	0.85±0.15/-0.05	0.3 min.	1.0
GRM329			1.0±0/-0.2		
GRM32A			1.15±0.1		
GRM32M			1.35±0.15		
GRM32N			1.6±0.2		
GRM32C			1.8±0.2		
GRM32R	2.0±0.2				
GRM32D	2.5±0.2				
GRM32E					

\* Bulk Case: 1.6±0.07(L)×0.8±0.07(W)×0.8±0.07(T)  
The figures indicate typical specification.



For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series


Product Information

## Capacitance Table

### Temperature Compensating Type C0G(5C),U2J(7U) Characteristics

6		ex.6: T Dimension [mm]																					
TC	LxW [mm]	C0G(5C)						U2J(7U)															
		0.4x0.2 (02) <01005>		0.6x0.3 (03) (15) <0201> <0402>		1.0x0.5 (18) (15) <0603>		1.6x0.8 (18) <0603>		2.0x1.25 (21) <0805>		3.2x1.6 (31) <1206>		0.6x0.3 (03) <0201>		1.0x0.5 (15) <0402>		1.6x0.8 (18) <0603>		2.0x1.25 (21) <0805>		3.2x1.6 (31) <1206>	
Rated Voltage [Vdc]		16 (1C)	10 (1A)	6.3 (0J)	50 (1H)	50 (1H)	100 (1E)	50 (1H)	100 (1E)	50 (1H)	100 (1E)	50 (1H)	50 (1H)	25 (1E)	50 (1H)	10 (1A)	50 (1H)	10 (1A)	50 (1H)	10 (1A)	50 (1H)	10 (1A)	50 (1H)
Capacitance																							
0.1pF(R10)					3	3, 5																	
0.2pF(R20)	2				3	3, 5																	
0.3pF(R30)	2				3	3, 5																	
0.4pF(R40)	2				3	3, 5																	
0.5pF(R50)	2				3	3, 5																	
0.6pF(R60)	2				3	3, 5																	
0.7pF(R70)	2				3	3, 5																	
0.8pF(R80)	2				3	3, 5																	
0.9pF(R90)	2				3	3, 5																	
1.0pF(1R0)	2				3	3, 5							3		5								
1.1pF(1R1)	2				3	3, 5																	
1.2pF(1R2)	2				3	3, 5																	
1.3pF(1R3)	2				3	3, 5																	
1.4pF(1R4)	2				3	3, 5																	
1.5pF(1R5)	2				3	3, 5																	
1.6pF(1R6)	2				3	3, 5																	
1.7pF(1R7)	2				3	3, 5																	
1.8pF(1R8)	2				3	3, 5																	
1.9pF(1R9)	2				3	3, 5																	
2.0pF(2R0)	2				3	3, 5							3		5								
2.1pF(2R1)	2				3	3, 5																	
2.2pF(2R2)	2				3	3, 5																	
2.3pF(2R3)	2				3	3, 5																	
2.4pF(2R4)	2				3	3, 5																	
2.5pF(2R5)	2				3	3, 5																	
2.6pF(2R6)	2				3	3, 5																	
2.7pF(2R7)	2				3	3, 5																	
2.8pF(2R8)	2				3	3, 5																	
2.9pF(2R9)	2				3	3, 5																	
3.0pF(3R0)	2				3	3, 5							3		5								
3.1pF(3R1)	2				3	3, 5																	
3.2pF(3R2)	2				3	3, 5																	
3.3pF(3R3)	2				3	3, 5																	
3.4pF(3R4)	2				3	3, 5																	
3.5pF(3R5)	2				3	3, 5																	
3.6pF(3R6)	2				3	3, 5																	
3.7pF(3R7)	2				3	3, 5																	
3.8pF(3R8)	2				3	3, 5																	
3.9pF(3R9)	2				3	3, 5																	
4.0pF(4R0)	2				3	3, 5							3		5								
4.1pF(4R1)	2				3	3, 5																	
4.2pF(4R2)	2				3	3, 5																	
4.3pF(4R3)	2				3	3, 5																	
4.4pF(4R4)	2				3	3, 5																	
4.5pF(4R5)	2				3	3, 5																	
4.6pF(4R6)	2				3	3, 5																	
4.7pF(4R7)	2				3	3, 5																	
4.8pF(4R8)	2				3	3, 5																	
4.9pF(4R9)	2				3	3, 5																	

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

Continued on the following page. 

# Capacitance Table

Continued from the preceding page.

**6** ex.6: T Dimension [mm]

TC	C0G(5C)										U2J(7U)										
	0.4x0.2 (02) <01005>			0.6x0.3 (03) (15) <0201>		1.0x0.5 (15) <0402>		1.6x0.8 (18) <0603>		2.0x1.25 (21) <0805>		3.2x1.6 (31) <1206>		0.6x0.3 (03) <0201>		1.0x0.5 (15) <0402>		1.6x0.8 (18) <0603>		2.0x1.25 (21) <0805>	
LxW [mm]	16 (1C)	10 (1A)	6.3 (0J)	50 (1H)	50 (1H)	100 (1E)	50 (1H)	100 (1E)	50 (1H)	100 (1E)	50 (1H)	50 (1H)	25 (1E)	50 (1H)	10 (1A)	50 (1H)	10 (1A)	50 (1H)	10 (1A)	50 (1H)	50 (1H)
Rated Voltage [Vdc]				50	50	100	50	100	50	100	50	50	25	50	10	50	10	50	10	50	50
Capacitance				3	3, 5								3	5							
5.0pF(5R0)	2			3	3, 5								3	5							
5.1pF(5R1)	2			3	3, 5																
5.2pF(5R2)	2			3	3, 5																
5.3pF(5R3)	2			3	3, 5																
5.4pF(5R4)	2			3	3, 5																
5.5pF(5R5)	2			3	3, 5																
5.6pF(5R6)	2			3	3, 5																
5.7pF(5R7)	2			3	3, 5																
5.8pF(5R8)	2			3	3, 5																
5.9pF(5R9)	2			3	3, 5																
6.0pF(6R0)	2			3	3, 5								3	5							
6.1pF(6R1)	2			3	3, 5																
6.2pF(6R2)	2			3	3, 5																
6.3pF(6R3)	2			3	3, 5																
6.4pF(6R4)	2			3	3, 5																
6.5pF(6R5)	2			3	3, 5																
6.6pF(6R6)	2			3	3, 5																
6.7pF(6R7)	2			3	3, 5																
6.8pF(6R8)	2			3	3, 5																
6.9pF(6R9)	2			3	3, 5																
7.0pF(7R0)	2			3	3, 5								3	5							
7.1pF(7R1)	2			3	3, 5																
7.2pF(7R2)	2			3	3, 5																
7.3pF(7R3)	2			3	3, 5																
7.4pF(7R4)	2			3	3, 5																
7.5pF(7R5)	2			3	3, 5																
7.6pF(7R6)	2			3	3, 5																
7.7pF(7R7)	2			3	3, 5																
7.8pF(7R8)	2			3	3, 5																
7.9pF(7R9)	2			3	3, 5																
8.0pF(8R0)	2			3	3, 5								3	5							
8.1pF(8R1)	2			3	3, 5																
8.2pF(8R2)	2			3	3, 5																
8.3pF(8R3)	2			3	3, 5																
8.4pF(8R4)	2			3	3, 5																
8.5pF(8R5)	2			3	3, 5																
8.6pF(8R6)	2			3	3, 5																
8.7pF(8R7)	2			3	3, 5																
8.8pF(8R8)	2			3	3, 5																
8.9pF(8R9)	2			3	3, 5																
9.0pF(9R0)	2			3	3, 5								3	5							
9.1pF(9R1)	2			3	3, 5																
9.2pF(9R2)	2			3	3, 5																
9.3pF(9R3)	2			3	3, 5																
9.4pF(9R4)	2			3	3, 5																
9.5pF(9R5)	2			3	3, 5																
9.6pF(9R6)	2			3	3, 5																
9.7pF(9R7)	2			3	3, 5																
9.8pF(9R8)	2			3	3, 5																
9.9pF(9R9)	2			3	3, 5																

The part number code is shown in ( ) and Unit is shown in [ ]. <->: EIA [inch] Code

Continued on the following page.

# Capacitance Table

Continued from the preceding page.

6		ex.6: T Dimension [mm]																					
TC	LxW [mm]	C0G(5C)										U2J(7U)											
		0.4x0.2 (02) <01005>			0.6x0.3 (03) <0201>		1.0x0.5 (15) <0402>		1.6x0.8 (18) <0603>		2.0x1.25 (21) <0805>		3.2x1.6 (31) <1206>		0.6x0.3 (03) <0201>		1.0x0.5 (15) <0402>		1.6x0.8 (18) <0603>		2.0x1.25 (21) <0805>		3.2x1.6 (31) <1206>
Rated Voltage [Vdc]	Capacitance	16 (1C)	10 (1A)	6.3 (0J)	50 (1H)	50 (1H)	100 (1E)	50 (1H)	100 (1E)	50 (1H)	100 (1E)	50 (1H)	50 (1H)	25 (1E)	50 (1H)	10 (1A)	50 (1H)	10 (1A)	50 (1H)	10 (1A)	50 (1H)	10 (1A)	50 (1H)
10pF(100)	2				3	3,5	8	8						3		5							
12pF(120)	2				3	3,5	8	8						3		5							
15pF(150)	2				3	3,5	8	8						3		5							
18pF(180)	2				3	3,5	8	8						3		5							
22pF(220)	2				3	3,5	8	8						3		5							
27pF(270)	2				3	3,5	8	8						3		5							
33pF(330)	2				3	3,5	8	8						3		5							
39pF(390)	2				3	3,5	8	8						3		5							
47pF(470)	2				3	3,5	8	8						3		5							
56pF(560)		2	2		3	3,5	8	8						3		5							
68pF(680)		2	2		3	3,5	8	8						3		5							
82pF(820)		2	2		3	3,5	8	8						3		5							
100pF(101)		2	2		3	3,5	8	8	6					3		5							
120pF(121)					3,5	8	8	6								5							
150pF(151)					3,5	8	8	6								5							
180pF(181)					3,5	8	8	6								5							
220pF(221)					3,5	8	8	6															
270pF(271)					3,5	8	8	6															
330pF(331)					3,5	8	8	6															
390pF(391)					3,5	8	8	6															
470pF(471)					3,5	8	8	6															
560pF(561)					3,5	8	8	6															
680pF(681)					3,5	8	8	6															
820pF(821)					5	8	8	6															
1000pF(102)					5	8	8	6									8						
1200pF(122)					8	8	6	6								5	8						
1500pF(152)					8	8	6	6								5	8						
1800pF(182)					8	6	6	9								5	8						
2200pF(222)					8	6	6	9								5	5,8						
2700pF(272)					8	6	6	9								5	5,8						
3300pF(332)					8	6	6	9								5	5,8						
3900pF(392)					8			6	9							5	5,8						
4700pF(472)								6	9	9						5	5,8						
5600pF(562)								9	9	9							8	5					
6800pF(682)								9	9	9							8	5					
8200pF(822)								9	9	9							8	5					
10000pF(103)								9	9	9							8	5	6				
12000pF(123)								9	9	9								8	6				
15000pF(153)								9	9	9								8	6				
18000pF(183)								B	9	9								8	6				
22000pF(223)								B	9	9								8	9				
27000pF(273)										9									9				
33000pF(333)										9									A				
39000pF(393)										9									B				
47000pF(473)										M									B				
56000pF(563)										M											9	9	
68000pF(683)										C											B	M	
82000pF(823)										C											B	M	
0.1μF(104)										C											B	M	

The part number code is shown in ( ) and Unit is shown in [ ]. <->: EIA [inch] Code

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GOM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information

## Capacitance Table

### Temperature Compensating Type P2H(6P),R2H(6R),S2H(6S),T2H(6T) Characteristics

6		ex.6: T Dimension [mm]							
TC	LxW [mm]	P2H (6P)		R2H (6R)		S2H (6S)		T2H (6T)	
		1.0x0.5 (15) <0402>	0.6x0.3 (03) <0201>	1.0x0.5 (15) <0402>	0.6x0.3 (03) <0201>	1.0x0.5 (15) <0402>	0.6x0.3 (03) <0201>	1.0x0.5 (15) <0402>	0.6x0.3 (03) <0201>
Rated Voltage [Vdc]		50 (1H)	25 (1E)	50 (1H)	25 (1E)	50 (1H)	25 (1E)	50 (1H)	25 (1E)
Capacitance									
1.0pF(1R0)		5	3	5	3	5	3	5	5
2.0pF(2R0)		5	3	5	3	5	3	5	5
3.0pF(3R0)		5	3	5	3	5	3	5	5
4.0pF(4R0)		5	3	5	3	5	3	5	5
5.0pF(5R0)		5	3	5	3	5	3	5	5
6.0pF(6R0)		5	3	5	3	5	3	5	5
7.0pF(7R0)		5	3	5	3	5	3	5	5
8.0pF(8R0)		5	3	5	3	5	3	5	5
9.0pF(9R0)		5	3	5	3	5	3	5	5
10pF(100)		5	3	5	3	5	3	5	5
12pF(120)		5	3	5	3	5	3	5	5
15pF(150)		5	3	5	3	5	3	5	5
18pF(180)		5	3	5	3	5	3	5	5
22pF(220)		5	3	5	3	5	3	5	5
27pF(270)		5	3	5	3	5	3	5	5
33pF(330)			3	5	3	5	3	5	5
39pF(390)			3		3	5	3	5	5
47pF(470)			3		3		3	5	5
56pF(560)			3		3		3	5	5
68pF(680)			3		3		3	5	5
82pF(820)			3		3		3	5	5
100pF(101)			3		3		3	5	5

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GOM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information



# Capacitance Table

Continued from the preceding page.

## High Dielectric Constant Type X7R(R7)/X7S(C7)/X7T(D7)/X7U(E7) Characteristics

5		ex.5: T Dimension [mm]																
LxW [mm]	Rated Voltage [Vdc]	0.4x0.2 (02) <01005>			0.6x0.3 (03) <0201>			1.0x0.5 (15) <0402>					1.6x0.8 (18) <0603>					
		10 (1A)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	100 (2A)	50 (1H)	25 (1E)	16 (1C)	10 (1A)	100 (2A)	50 (1H)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)
68pF(680)	2																	
100pF(101)	2	3	3															
150pF(151)	2	3	3															
220pF(221)	2	3	3			5	X, 5				8	8						
330pF(331)	2	3	3			5	X, 5				8	8						
470pF(471)	2	3	3			5	X, 5				8	8						
680pF(681)		3	3			5	X, 5				8	8						
1000pF(102)		3	3			5	X, 5				8	8						
1500pF(152)		3	3			5	X, 5				8	8						
2200pF(222)			3	3		5	5	X			8	8	8					
3300pF(332)			3	3		5	5		X		8	8	8					
4700pF(472)				3	3	5	5	5	X		8	8	8					
6800pF(682)				3	3		5	5	X		8	8	8					
10000pF(103)					3	3		5	5	X		8	8	8				
15000pF(153)							5	5	5			8	8					
22000pF(223)							5	5	5			8	8					
33000pF(333)								5	5			8	8					
47000pF(473)								5	5			8	8					
68000pF(683)									5	5		8	8					
0.10μF(104)									5	5	8	8	8					
0.15μF(154)									5			8	8					
0.22μF(224)									5			8	8					
0.33μF(334)													8	8				
0.47μF(474)													8	8	8			
0.68μF(684)													8	8				
1.0μF(105)													8	8	5, 8			
2.2μF(225)														8	8	8		

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

Continued on the following page.

For General GRM Series

Array GNM Series

Low ESL LL Series

High-Q GJM Series

High Frequency GOM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information

## Capacitance Table

Continued from the preceding page.

LxW [mm]	2.0x1.25 (21) <0805>							3.2x1.6 (31) <1206>							3.2x2.5 (32) <1210>							
	100 (2A)	50 (1H)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)	100 (2A)	50 (1H)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)	100 (2A)	50 (1H)	35 (YA)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)
Rated Voltage [Vdc]																						
Capacitance																						
6800pF(682)	9																					
10000pF(103)	B																					
15000pF(153)	B																					
22000pF(223)	B																					
33000pF(333)	B	9																				
47000pF(473)	B	B																				
68000pF(683)		B	9																			
0.10μF(104)		B	B																			
0.15μF(154)		B	B																			
0.22μF(224)	A	B	B																			
0.33μF(334)	A	9	B																			
0.47μF(474)	B	B	9																			
0.68μF(684)			9	9																		
1.0μF(105)		B	9, B	B																		
2.2μF(225)			B	B	B																	
4.7μF(475)				B	B																	
10μF(106)					B	B																
22μF(226)						B																
47μF(476)							B															
100μF(107)								B														

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

# These Part Numbers have individual testing conditions on Durability of GRM Series Specifications and Test Methods (2). Please refer to P60.

### High Dielectric Constant Type X6S(C8)/X6T(D8) Characteristics

5 ex.5: T Dimension [mm]

LxW [mm]	0.6x0.3 (03) <0201>		1.0x0.5 (15) <0402>		
	6.3 (0J)	4 (0G)	25 (1E)	6.3 (0J)	4 (0G)
Rated Voltage [Vdc]					
Capacitance					
15000pF(153)	3	3			
22000pF(223)	3	3			
33000pF(333)	3	3			
47000pF(473)	3	3			
68000pF(683)			5		
0.10μF(104)			5		
0.15μF(154)				5	5
0.22μF(224)				5	5
0.33μF(334)				5	5
0.47μF(474)				5	5
0.68μF(684)				5#	5

LxW [mm]	1.6x0.8 (18) <0603>					2.0x1.25 (21) <0805>					3.2x1.6 (31) <1206>					3.2x2.5 (32) <1210>			
	25 (1E)	10 (1A)	6.3 (0J)	4 (0G)	2.5 (0E)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)	25 (1E)	10 (1A)	6.3 (0J)	4 (0G)
Rated Voltage [Vdc]																			
Capacitance																			
1.0μF(105)	8	5	5																
2.2μF(225)		8	8																
4.7μF(475)				8		B	B	9	9										
10μF(106)				8#	8					B	9, B	C	M	9	9				
22μF(226)									B#	B				C	C			E	N
47μF(476)														C	C			E	E
100μF(107)														C				E	E

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

# These Part Numbers have individual testing conditions on Durability of GRM Series Specifications and Test Methods (2). Please refer to P60.

# Capacitance Table

Continued from the preceding page.

## High Dielectric Constant Type X5R(R6) Characteristics

5 ex.5: T Dimension [mm] : Please refer to X7R(R7) etc. Characteristics.

LxW [mm]	0.4x0.2 (02) <01005>		0.6x0.3 (03) <0201>				1.0x0.5 (15) <0402>						1.6x0.8 (18) <0603>							
	Rated Voltage [Vdc]	10 (1A)	6.3 (0J)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	100 (2A)	50 (1H)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	100 (2A)	50 (1H)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)
68pF(680)	2																			
100pF(101)	2																			
150pF(151)	2																			
220pF(221)	2																			
330pF(331)	2																			
470pF(471)	2																			
680pF(681)	2	2																		
1000pF(102)	2	2						5							8					
1500pF(152)	2	2				3														
2200pF(222)	2	2				3			5						8					
3300pF(332)	2	2				3														
4700pF(472)	2	2				3			5						8					
6800pF(682)	2	2				3														
10000pF(103)	2	2				3	3								8					
15000pF(153)							3													
22000pF(223)							3			5					8					
33000pF(333)							3			5	5									
47000pF(473)							3			5	5									
68000pF(683)									5	5	5									
0.10μF(104)									5	5	5				8					
0.15μF(154)										5	5									
0.22μF(224)										5	5			8	8					
0.33μF(334)										5	5									
0.47μF(474)										5	5			8	8					
0.68μF(684)										5	5					8				
1.0μF(105)										5				8	5, 8	5				
2.2μF(225)															8	8				
4.7μF(475)																		8		
10μF(106)																		8	8	
22μF(226)																			8	

The part number code is shown in ( ) and Unit is shown in [ ]. <->: EIA [inch] Code

Continued on the following page. ↗

For General GRM Series

Array GNM Series

Low ESL LL Series

High-Q GJM Series

High Frequency GOM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information

## Capacitance Table

Continued from the preceding page.

LxW [mm]	2.0x1.25 (21) <0805>								3.2x1.6 (31) <1206>								3.2x2.5 (32) <1210>								
	100 (2A)	50 (1H)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)		100 (2A)	50 (1H)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)		100 (2A)	50 (1H)	35 (YA)	25 (1E)	16 (1C)	10 (1A)	6.3 (0J)	4 (0G)	
Rated Voltage [Vdc]																									
Capacitance																									
6800pF(682)																									
10000pF(103)																									
15000pF(153)																									
22000pF(223)																									
33000pF(333)																									
47000pF(473)																									
68000pF(683)																									
0.10μF(104)																									
0.15μF(154)																									
0.22μF(224)																									
0.33μF(334)																									
0.47μF(474)																									
0.68μF(684)																									
1.0μF(105)			6	6, B																					
2.2μF(225)			9, B	9, B	B																				
4.7μF(475)			B	9, B	9, B	B																			
10μF(106)				B	9, B	9, B																			
22μF(226)						B	9																		
47μF(476)								C	C	C															
100μF(107)										C	C														

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		0.4x0.2(02)<01005>	0.6x0.3(03)<0201>	1.0x0.5(15)<0402>
Rated Volt. [Vdc]		16(1C)	50(1H)	50(1H)
Capacitance	Tolerance	Part Number		
0.1pF(R10)	±0.05pF(W)		GRM0335C1HR10WD01D	GRM1555C1HR10WA01D
	±0.1pF(B)		GRM0335C1HR10BD01D	GRM1555C1HR10BA01D
0.2pF(R20)	±0.05pF(W)	GRM0225C1CR20WD05L	GRM0335C1HR20WD01D	GRM1555C1HR20WA01D
	±0.1pF(B)	GRM0225C1CR20BD05L	GRM0335C1HR20BD01D	GRM1555C1HR20BA01D
0.3pF(R30)	±0.05pF(W)	GRM0225C1CR30WD05L	GRM0335C1HR30WD01D	GRM1555C1HR30WA01D
	±0.1pF(B)	GRM0225C1CR30BD05L	GRM0335C1HR30BD01D	GRM1555C1HR30BA01D
0.4pF(R40)	±0.05pF(W)	GRM0225C1CR40WD05L	GRM0335C1HR40WD01D	GRM1555C1HR40WA01D
	±0.1pF(B)	GRM0225C1CR40BD05L	GRM0335C1HR40BD01D	GRM1555C1HR40BA01D
0.5pF(R50)	±0.05pF(W)	GRM0225C1CR50WD05L	GRM0335C1HR50WD01D	GRM1555C1HR50WA01D
	±0.1pF(B)	GRM0225C1CR50BD05L	GRM0335C1HR50BD01D	GRM1555C1HR50BA01D
0.6pF(R60)	±0.05pF(W)	GRM0225C1CR60WD05L	GRM0335C1HR60WD01D	GRM1555C1HR60WA01D
	±0.1pF(B)	GRM0225C1CR60BD05L	GRM0335C1HR60BD01D	GRM1555C1HR60BA01D
0.7pF(R70)	±0.05pF(W)	GRM0225C1CR70WD05L	GRM0335C1HR70WD01D	GRM1555C1HR70WA01D
	±0.1pF(B)	GRM0225C1CR70BD05L	GRM0335C1HR70BD01D	GRM1555C1HR70BA01D
0.8pF(R80)	±0.05pF(W)	GRM0225C1CR80WD05L	GRM0335C1HR80WD01D	GRM1555C1HR80WA01D
	±0.1pF(B)	GRM0225C1CR80BD05L	GRM0335C1HR80BD01D	GRM1555C1HR80BA01D
0.9pF(R90)	±0.05pF(W)	GRM0225C1CR90WD05L	GRM0335C1HR90WD01D	GRM1555C1HR90WA01D
	±0.1pF(B)	GRM0225C1CR90BD05L	GRM0335C1HR90BD01D	GRM1555C1HR90BA01D
1.0pF(1R0)	±0.05pF(W)	GRM0225C1C1R0WD05L	GRM0335C1H1R0WD01D	GRM1555C1H1R0WA01D
	±0.1pF(B)	GRM0225C1C1R0BD05L	GRM0335C1H1R0BD01D	GRM1555C1H1R0BA01D
	±0.25pF(C)	GRM0225C1C1R0CD05L	GRM0335C1H1R0CD01D	GRM1555C1H1R0CA01D
1.1pF(1R1)	±0.05pF(W)	GRM0225C1C1R1WD05L	GRM0335C1H1R1WD01D	GRM1555C1H1R1WA01D
	±0.1pF(B)	GRM0225C1C1R1BD05L	GRM0335C1H1R1BD01D	GRM1555C1H1R1BA01D
	±0.25pF(C)	GRM0225C1C1R1CD05L	GRM0335C1H1R1CD01D	GRM1555C1H1R1CA01D
1.2pF(1R2)	±0.05pF(W)	GRM0225C1C1R2WD05L	GRM0335C1H1R2WD01D	GRM1555C1H1R2WA01D
	±0.1pF(B)	GRM0225C1C1R2BD05L	GRM0335C1H1R2BD01D	GRM1555C1H1R2BA01D
	±0.25pF(C)	GRM0225C1C1R2CD05L	GRM0335C1H1R2CD01D	GRM1555C1H1R2CA01D
1.3pF(1R3)	±0.05pF(W)	GRM0225C1C1R3WD05L	GRM0335C1H1R3WD01D	GRM1555C1H1R3WA01D
	±0.1pF(B)	GRM0225C1C1R3BD05L	GRM0335C1H1R3BD01D	GRM1555C1H1R3BA01D
	±0.25pF(C)	GRM0225C1C1R3CD05L	GRM0335C1H1R3CD01D	GRM1555C1H1R3CA01D
1.4pF(1R4)	±0.05pF(W)	GRM0225C1C1R4WD05L	GRM0335C1H1R4WD01D	GRM1555C1H1R4WA01D
	±0.1pF(B)	GRM0225C1C1R4BD05L	GRM0335C1H1R4BD01D	GRM1555C1H1R4BA01D
	±0.25pF(C)	GRM0225C1C1R4CD05L	GRM0335C1H1R4CD01D	GRM1555C1H1R4CA01D
1.5pF(1R5)	±0.05pF(W)	GRM0225C1C1R5WD05L	GRM0335C1H1R5WD01D	GRM1555C1H1R5WA01D
	±0.1pF(B)	GRM0225C1C1R5BD05L	GRM0335C1H1R5BD01D	GRM1555C1H1R5BA01D
	±0.25pF(C)	GRM0225C1C1R5CD05L	GRM0335C1H1R5CD01D	GRM1555C1H1R5CA01D
1.6pF(1R6)	±0.05pF(W)	GRM0225C1C1R6WD05L	GRM0335C1H1R6WD01D	GRM1555C1H1R6WA01D
	±0.1pF(B)	GRM0225C1C1R6BD05L	GRM0335C1H1R6BD01D	GRM1555C1H1R6BA01D
	±0.25pF(C)	GRM0225C1C1R6CD05L	GRM0335C1H1R6CD01D	GRM1555C1H1R6CA01D
1.7pF(1R7)	±0.05pF(W)	GRM0225C1C1R7WD05L	GRM0335C1H1R7WD01D	GRM1555C1H1R7WA01D
	±0.1pF(B)	GRM0225C1C1R7BD05L	GRM0335C1H1R7BD01D	GRM1555C1H1R7BA01D
	±0.25pF(C)	GRM0225C1C1R7CD05L	GRM0335C1H1R7CD01D	GRM1555C1H1R7CA01D
1.8pF(1R8)	±0.05pF(W)	GRM0225C1C1R8WD05L	GRM0335C1H1R8WD01D	GRM1555C1H1R8WA01D
	±0.1pF(B)	GRM0225C1C1R8BD05L	GRM0335C1H1R8BD01D	GRM1555C1H1R8BA01D
	±0.25pF(C)	GRM0225C1C1R8CD05L	GRM0335C1H1R8CD01D	GRM1555C1H1R8CA01D
1.9pF(1R9)	±0.05pF(W)	GRM0225C1C1R9WD05L	GRM0335C1H1R9WD01D	GRM1555C1H1R9WA01D
	±0.1pF(B)	GRM0225C1C1R9BD05L	GRM0335C1H1R9BD01D	GRM1555C1H1R9BA01D
	±0.25pF(C)	GRM0225C1C1R9CD05L	GRM0335C1H1R9CD01D	GRM1555C1H1R9CA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

- (Part Number) **GR** **M** **02** **2** **5C** **1C** **R20** **W** **D05** **L**
- ① Product ID
  - ② Series
  - ③ Dimensions (LxW)
  - ④ Dimension (T)
  - ⑤ Temperature Characteristics
  - ⑥ Rated Voltage
  - ⑦ Capacitance
  - ⑧ Capacitance Tolerance
  - ⑨ Individual Specification Code
  - ⑩ Packaging\*

Packaging Code in Part Number shows STD 180mm Reel Taping.

\*GRM022: D is applicable.

For General GRM Series  
Array GNM Series  
Low ESL LL□ Series  
High-Q GJM Series  
High Frequency GQM Series  
Monolithic Microchip GMA Series  
For Bonding GMD Series  
Product Information

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		0.4x0.2(02)<01005>	0.6x0.3(03)<0201>	1.0x0.5(15)<0402>
Rated Volt. [Vdc]		16(1C)	50(1H)	50(1H)
Capacitance	Tolerance	Part Number		
2.0pF(2R0)	±0.05pF(W)	GRM0225C1C2R0WD05L	GRM0335C1H2R0WD01D	GRM1555C1H2R0WA01D
	±0.1pF(B)	GRM0225C1C2R0BD05L	GRM0335C1H2R0BD01D	GRM1555C1H2R0BA01D
	±0.25pF(C)	GRM0225C1C2R0CD05L	GRM0335C1H2R0CD01D	GRM1555C1H2R0CA01D
2.1pF(2R1)	±0.05pF(W)	GRM0225C1C2R1WD05L	GRM0335C1H2R1WD01D	GRM1555C1H2R1WA01D
	±0.1pF(B)	GRM0225C1C2R1BD05L	GRM0335C1H2R1BD01D	GRM1555C1H2R1BA01D
	±0.25pF(C)	GRM0225C1C2R1CD05L	GRM0335C1H2R1CD01D	GRM1555C1H2R1CA01D
2.2pF(2R2)	±0.05pF(W)	GRM0225C1C2R2WD05L	GRM0335C1H2R2WD01D	GRM1555C1H2R2WA01D
	±0.1pF(B)	GRM0225C1C2R2BD05L	GRM0335C1H2R2BD01D	GRM1555C1H2R2BA01D
	±0.25pF(C)	GRM0225C1C2R2CD05L	GRM0335C1H2R2CD01D	GRM1555C1H2R2CA01D
2.3pF(2R3)	±0.05pF(W)	GRM0225C1C2R3WD05L	GRM0335C1H2R3WD01D	GRM1555C1H2R3WA01D
	±0.1pF(B)	GRM0225C1C2R3BD05L	GRM0335C1H2R3BD01D	GRM1555C1H2R3BA01D
	±0.25pF(C)	GRM0225C1C2R3CD05L	GRM0335C1H2R3CD01D	GRM1555C1H2R3CA01D
2.4pF(2R4)	±0.05pF(W)	GRM0225C1C2R4WD05L	GRM0335C1H2R4WD01D	GRM1555C1H2R4WA01D
	±0.1pF(B)	GRM0225C1C2R4BD05L	GRM0335C1H2R4BD01D	GRM1555C1H2R4BA01D
	±0.25pF(C)	GRM0225C1C2R4CD05L	GRM0335C1H2R4CD01D	GRM1555C1H2R4CA01D
2.5pF(2R5)	±0.05pF(W)	GRM0225C1C2R5WD05L	GRM0335C1H2R5WD01D	GRM1555C1H2R5WA01D
	±0.1pF(B)	GRM0225C1C2R5BD05L	GRM0335C1H2R5BD01D	GRM1555C1H2R5BA01D
	±0.25pF(C)	GRM0225C1C2R5CD05L	GRM0335C1H2R5CD01D	GRM1555C1H2R5CA01D
2.6pF(2R6)	±0.05pF(W)	GRM0225C1C2R6WD05L	GRM0335C1H2R6WD01D	GRM1555C1H2R6WA01D
	±0.1pF(B)	GRM0225C1C2R6BD05L	GRM0335C1H2R6BD01D	GRM1555C1H2R6BA01D
	±0.25pF(C)	GRM0225C1C2R6CD05L	GRM0335C1H2R6CD01D	GRM1555C1H2R6CA01D
2.7pF(2R7)	±0.05pF(W)	GRM0225C1C2R7WD05L	GRM0335C1H2R7WD01D	GRM1555C1H2R7WA01D
	±0.1pF(B)	GRM0225C1C2R7BD05L	GRM0335C1H2R7BD01D	GRM1555C1H2R7BA01D
	±0.25pF(C)	GRM0225C1C2R7CD05L	GRM0335C1H2R7CD01D	GRM1555C1H2R7CA01D
2.8pF(2R8)	±0.05pF(W)	GRM0225C1C2R8WD05L	GRM0335C1H2R8WD01D	GRM1555C1H2R8WA01D
	±0.1pF(B)	GRM0225C1C2R8BD05L	GRM0335C1H2R8BD01D	GRM1555C1H2R8BA01D
	±0.25pF(C)	GRM0225C1C2R8CD05L	GRM0335C1H2R8CD01D	GRM1555C1H2R8CA01D
2.9pF(2R9)	±0.05pF(W)	GRM0225C1C2R9WD05L	GRM0335C1H2R9WD01D	GRM1555C1H2R9WA01D
	±0.1pF(B)	GRM0225C1C2R9BD05L	GRM0335C1H2R9BD01D	GRM1555C1H2R9BA01D
	±0.25pF(C)	GRM0225C1C2R9CD05L	GRM0335C1H2R9CD01D	GRM1555C1H2R9CA01D
3.0pF(3R0)	±0.05pF(W)	GRM0225C1C3R0WD05L	GRM0335C1H3R0WD01D	GRM1555C1H3R0WA01D
	±0.1pF(B)	GRM0225C1C3R0BD05L	GRM0335C1H3R0BD01D	GRM1555C1H3R0BA01D
	±0.25pF(C)	GRM0225C1C3R0CD05L	GRM0335C1H3R0CD01D	GRM1555C1H3R0CA01D
3.1pF(3R1)	±0.05pF(W)	GRM0225C1C3R1WD05L	GRM0335C1H3R1WD01D	GRM1555C1H3R1WA01D
	±0.1pF(B)	GRM0225C1C3R1BD05L	GRM0335C1H3R1BD01D	GRM1555C1H3R1BA01D
	±0.25pF(C)	GRM0225C1C3R1CD05L	GRM0335C1H3R1CD01D	GRM1555C1H3R1CA01D
3.2pF(3R2)	±0.05pF(W)	GRM0225C1C3R2WD05L	GRM0335C1H3R2WD01D	GRM1555C1H3R2WA01D
	±0.1pF(B)	GRM0225C1C3R2BD05L	GRM0335C1H3R2BD01D	GRM1555C1H3R2BA01D
	±0.25pF(C)	GRM0225C1C3R2CD05L	GRM0335C1H3R2CD01D	GRM1555C1H3R2CA01D
3.3pF(3R3)	±0.05pF(W)	GRM0225C1C3R3WD05L	GRM0335C1H3R3WD01D	GRM1555C1H3R3WA01D
	±0.1pF(B)	GRM0225C1C3R3BD05L	GRM0335C1H3R3BD01D	GRM1555C1H3R3BA01D
	±0.25pF(C)	GRM0225C1C3R3CD05L	GRM0335C1H3R3CD01D	GRM1555C1H3R3CA01D
3.4pF(3R4)	±0.05pF(W)	GRM0225C1C3R4WD05L	GRM0335C1H3R4WD01D	GRM1555C1H3R4WA01D
	±0.1pF(B)	GRM0225C1C3R4BD05L	GRM0335C1H3R4BD01D	GRM1555C1H3R4BA01D
	±0.25pF(C)	GRM0225C1C3R4CD05L	GRM0335C1H3R4CD01D	GRM1555C1H3R4CA01D
3.5pF(3R5)	±0.05pF(W)	GRM0225C1C3R5WD05L	GRM0335C1H3R5WD01D	GRM1555C1H3R5WA01D
	±0.1pF(B)	GRM0225C1C3R5BD05L	GRM0335C1H3R5BD01D	GRM1555C1H3R5BA01D
	±0.25pF(C)	GRM0225C1C3R5CD05L	GRM0335C1H3R5CD01D	GRM1555C1H3R5CA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

- (Part Number) GR M 02 2 5C 1C 2R0 W D05 L    ①Product ID    ②Series    ③Dimensions (LxW)    ④Dimension (T)
- ⑤Temperature Characteristics    ⑥Rated Voltage    ⑦Capacitance
- ⑧Capacitance Tolerance    ⑨Individual Specification Code    ⑩Packaging\*

Packaging Code in Part Number shows STD 180mm Reel Taping.

\*GRM022: D is applicable.

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		0.4x0.2(02)<01005>	0.6x0.3(03)<0201>	1.0x0.5(15)<0402>
Rated Volt. [Vdc]		16(1C)	50(1H)	50(1H)
Capacitance	Tolerance	Part Number		
3.6pF(3R6)	±0.05pF(W)	GRM0225C1C3R6WD05L	GRM0335C1H3R6WD01D	GRM1555C1H3R6WA01D
	±0.1pF(B)	GRM0225C1C3R6BD05L	GRM0335C1H3R6BD01D	GRM1555C1H3R6BA01D
	±0.25pF(C)	GRM0225C1C3R6CD05L	GRM0335C1H3R6CD01D	GRM1555C1H3R6CA01D
3.7pF(3R7)	±0.05pF(W)	GRM0225C1C3R7WD05L	GRM0335C1H3R7WD01D	GRM1555C1H3R7WA01D
	±0.1pF(B)	GRM0225C1C3R7BD05L	GRM0335C1H3R7BD01D	GRM1555C1H3R7BA01D
	±0.25pF(C)	GRM0225C1C3R7CD05L	GRM0335C1H3R7CD01D	GRM1555C1H3R7CA01D
3.8pF(3R8)	±0.05pF(W)	GRM0225C1C3R8WD05L	GRM0335C1H3R8WD01D	GRM1555C1H3R8WA01D
	±0.1pF(B)	GRM0225C1C3R8BD05L	GRM0335C1H3R8BD01D	GRM1555C1H3R8BA01D
	±0.25pF(C)	GRM0225C1C3R8CD05L	GRM0335C1H3R8CD01D	GRM1555C1H3R8CA01D
3.9pF(3R9)	±0.05pF(W)	GRM0225C1C3R9WD05L	GRM0335C1H3R9WD01D	GRM1555C1H3R9WA01D
	±0.1pF(B)	GRM0225C1C3R9BD05L	GRM0335C1H3R9BD01D	GRM1555C1H3R9BA01D
	±0.25pF(C)	GRM0225C1C3R9CD05L	GRM0335C1H3R9CD01D	GRM1555C1H3R9CA01D
4.0pF(4R0)	±0.05pF(W)	GRM0225C1C4R0WD05L	GRM0335C1H4R0WD01D	GRM1555C1H4R0WA01D
	±0.1pF(B)	GRM0225C1C4R0BD05L	GRM0335C1H4R0BD01D	GRM1555C1H4R0BA01D
	±0.25pF(C)	GRM0225C1C4R0CD05L	GRM0335C1H4R0CD01D	GRM1555C1H4R0CA01D
4.1pF(4R1)	±0.05pF(W)	GRM0225C1C4R1WD05L	GRM0335C1H4R1WD01D	GRM1555C1H4R1WA01D
	±0.1pF(B)	GRM0225C1C4R1BD05L	GRM0335C1H4R1BD01D	GRM1555C1H4R1BA01D
	±0.25pF(C)	GRM0225C1C4R1CD05L	GRM0335C1H4R1CD01D	GRM1555C1H4R1CA01D
4.2pF(4R2)	±0.05pF(W)	GRM0225C1C4R2WD05L	GRM0335C1H4R2WD01D	GRM1555C1H4R2WA01D
	±0.1pF(B)	GRM0225C1C4R2BD05L	GRM0335C1H4R2BD01D	GRM1555C1H4R2BA01D
	±0.25pF(C)	GRM0225C1C4R2CD05L	GRM0335C1H4R2CD01D	GRM1555C1H4R2CA01D
4.3pF(4R3)	±0.05pF(W)	GRM0225C1C4R3WD05L	GRM0335C1H4R3WD01D	GRM1555C1H4R3WA01D
	±0.1pF(B)	GRM0225C1C4R3BD05L	GRM0335C1H4R3BD01D	GRM1555C1H4R3BA01D
	±0.25pF(C)	GRM0225C1C4R3CD05L	GRM0335C1H4R3CD01D	GRM1555C1H4R3CA01D
4.4pF(4R4)	±0.05pF(W)	GRM0225C1C4R4WD05L	GRM0335C1H4R4WD01D	GRM1555C1H4R4WA01D
	±0.1pF(B)	GRM0225C1C4R4BD05L	GRM0335C1H4R4BD01D	GRM1555C1H4R4BA01D
	±0.25pF(C)	GRM0225C1C4R4CD05L	GRM0335C1H4R4CD01D	GRM1555C1H4R4CA01D
4.5pF(4R5)	±0.05pF(W)	GRM0225C1C4R5WD05L	GRM0335C1H4R5WD01D	GRM1555C1H4R5WA01D
	±0.1pF(B)	GRM0225C1C4R5BD05L	GRM0335C1H4R5BD01D	GRM1555C1H4R5BA01D
	±0.25pF(C)	GRM0225C1C4R5CD05L	GRM0335C1H4R5CD01D	GRM1555C1H4R5CA01D
4.6pF(4R6)	±0.05pF(W)	GRM0225C1C4R6WD05L	GRM0335C1H4R6WD01D	GRM1555C1H4R6WA01D
	±0.1pF(B)	GRM0225C1C4R6BD05L	GRM0335C1H4R6BD01D	GRM1555C1H4R6BA01D
	±0.25pF(C)	GRM0225C1C4R6CD05L	GRM0335C1H4R6CD01D	GRM1555C1H4R6CA01D
4.7pF(4R7)	±0.05pF(W)	GRM0225C1C4R7WD05L	GRM0335C1H4R7WD01D	GRM1555C1H4R7WA01D
	±0.1pF(B)	GRM0225C1C4R7BD05L	GRM0335C1H4R7BD01D	GRM1555C1H4R7BA01D
	±0.25pF(C)	GRM0225C1C4R7CD05L	GRM0335C1H4R7CD01D	GRM1555C1H4R7CA01D
4.8pF(4R8)	±0.05pF(W)	GRM0225C1C4R8WD05L	GRM0335C1H4R8WD01D	GRM1555C1H4R8WA01D
	±0.1pF(B)	GRM0225C1C4R8BD05L	GRM0335C1H4R8BD01D	GRM1555C1H4R8BA01D
	±0.25pF(C)	GRM0225C1C4R8CD05L	GRM0335C1H4R8CD01D	GRM1555C1H4R8CA01D
4.9pF(4R9)	±0.05pF(W)	GRM0225C1C4R9WD05L	GRM0335C1H4R9WD01D	GRM1555C1H4R9WA01D
	±0.1pF(B)	GRM0225C1C4R9BD05L	GRM0335C1H4R9BD01D	GRM1555C1H4R9BA01D
	±0.25pF(C)	GRM0225C1C4R9CD05L	GRM0335C1H4R9CD01D	GRM1555C1H4R9CA01D
5.0pF(5R0)	±0.05pF(W)	GRM0225C1C5R0WD05L	GRM0335C1H5R0WD01D	GRM1555C1H5R0WA01D
	±0.1pF(B)	GRM0225C1C5R0BD05L	GRM0335C1H5R0BD01D	GRM1555C1H5R0BA01D
	±0.25pF(C)	GRM0225C1C5R0CD05L	GRM0335C1H5R0CD01D	GRM1555C1H5R0CA01D
5.1pF(5R1)	±0.05pF(W)	GRM0225C1C5R1WD05L	GRM0335C1H5R1WD01D	GRM1555C1H5R1WA01D
	±0.1pF(B)	GRM0225C1C5R1BD05L	GRM0335C1H5R1BD01D	GRM1555C1H5R1BA01D
	±0.25pF(C)	GRM0225C1C5R1CD05L	GRM0335C1H5R1CD01D	GRM1555C1H5R1CA01D
	±0.5pF(D)	GRM0225C1C5R1DD05L	GRM0335C1H5R1DD01D	GRM1555C1H5R1DA01D

The part number code is shown in ( ) and Unit is shown in [ ]. <>: EIA [inch] Code

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		0.4x0.2(02)<01005>	0.6x0.3(03)<0201>	1.0x0.5(15)<0402>
Rated Volt. [Vdc]		16(1C)	50(1H)	50(1H)
Capacitance	Tolerance	Part Number		
5.2pF(5R2)	±0.05pF(W)	GRM0225C1C5R2WD05L	GRM0335C1H5R2WD01D	GRM1555C1H5R2WA01D
	±0.1pF(B)	GRM0225C1C5R2BD05L	GRM0335C1H5R2BD01D	GRM1555C1H5R2BA01D
	±0.25pF(C)	GRM0225C1C5R2CD05L	GRM0335C1H5R2CD01D	GRM1555C1H5R2CA01D
	±0.5pF(D)	GRM0225C1C5R2DD05L	GRM0335C1H5R2DD01D	GRM1555C1H5R2DA01D
5.3pF(5R3)	±0.05pF(W)	GRM0225C1C5R3WD05L	GRM0335C1H5R3WD01D	GRM1555C1H5R3WA01D
	±0.1pF(B)	GRM0225C1C5R3BD05L	GRM0335C1H5R3BD01D	GRM1555C1H5R3BA01D
	±0.25pF(C)	GRM0225C1C5R3CD05L	GRM0335C1H5R3CD01D	GRM1555C1H5R3CA01D
	±0.5pF(D)	GRM0225C1C5R3DD05L	GRM0335C1H5R3DD01D	GRM1555C1H5R3DA01D
5.4pF(5R4)	±0.05pF(W)	GRM0225C1C5R4WD05L	GRM0335C1H5R4WD01D	GRM1555C1H5R4WA01D
	±0.1pF(B)	GRM0225C1C5R4BD05L	GRM0335C1H5R4BD01D	GRM1555C1H5R4BA01D
	±0.25pF(C)	GRM0225C1C5R4CD05L	GRM0335C1H5R4CD01D	GRM1555C1H5R4CA01D
	±0.5pF(D)	GRM0225C1C5R4DD05L	GRM0335C1H5R4DD01D	GRM1555C1H5R4DA01D
5.5pF(5R5)	±0.05pF(W)	GRM0225C1C5R5WD05L	GRM0335C1H5R5WD01D	GRM1555C1H5R5WA01D
	±0.1pF(B)	GRM0225C1C5R5BD05L	GRM0335C1H5R5BD01D	GRM1555C1H5R5BA01D
	±0.25pF(C)	GRM0225C1C5R5CD05L	GRM0335C1H5R5CD01D	GRM1555C1H5R5CA01D
	±0.5pF(D)	GRM0225C1C5R5DD05L	GRM0335C1H5R5DD01D	GRM1555C1H5R5DA01D
5.6pF(5R6)	±0.05pF(W)	GRM0225C1C5R6WD05L	GRM0335C1H5R6WD01D	GRM1555C1H5R6WA01D
	±0.1pF(B)	GRM0225C1C5R6BD05L	GRM0335C1H5R6BD01D	GRM1555C1H5R6BA01D
	±0.25pF(C)	GRM0225C1C5R6CD05L	GRM0335C1H5R6CD01D	GRM1555C1H5R6CA01D
	±0.5pF(D)	GRM0225C1C5R6DD05L	GRM0335C1H5R6DD01D	GRM1555C1H5R6DA01D
5.7pF(5R7)	±0.05pF(W)	GRM0225C1C5R7WD05L	GRM0335C1H5R7WD01D	GRM1555C1H5R7WA01D
	±0.1pF(B)	GRM0225C1C5R7BD05L	GRM0335C1H5R7BD01D	GRM1555C1H5R7BA01D
	±0.25pF(C)	GRM0225C1C5R7CD05L	GRM0335C1H5R7CD01D	GRM1555C1H5R7CA01D
	±0.5pF(D)	GRM0225C1C5R7DD05L	GRM0335C1H5R7DD01D	GRM1555C1H5R7DA01D
5.8pF(5R8)	±0.05pF(W)	GRM0225C1C5R8WD05L	GRM0335C1H5R8WD01D	GRM1555C1H5R8WA01D
	±0.1pF(B)	GRM0225C1C5R8BD05L	GRM0335C1H5R8BD01D	GRM1555C1H5R8BA01D
	±0.25pF(C)	GRM0225C1C5R8CD05L	GRM0335C1H5R8CD01D	GRM1555C1H5R8CA01D
	±0.5pF(D)	GRM0225C1C5R8DD05L	GRM0335C1H5R8DD01D	GRM1555C1H5R8DA01D
5.9pF(5R9)	±0.05pF(W)	GRM0225C1C5R9WD05L	GRM0335C1H5R9WD01D	GRM1555C1H5R9WA01D
	±0.1pF(B)	GRM0225C1C5R9BD05L	GRM0335C1H5R9BD01D	GRM1555C1H5R9BA01D
	±0.25pF(C)	GRM0225C1C5R9CD05L	GRM0335C1H5R9CD01D	GRM1555C1H5R9CA01D
	±0.5pF(D)	GRM0225C1C5R9DD05L	GRM0335C1H5R9DD01D	GRM1555C1H5R9DA01D
6.0pF(6R0)	±0.05pF(W)	GRM0225C1C6R0WD05L	GRM0335C1H6R0WD01D	GRM1555C1H6R0WA01D
	±0.1pF(B)	GRM0225C1C6R0BD05L	GRM0335C1H6R0BD01D	GRM1555C1H6R0BA01D
	±0.25pF(C)	GRM0225C1C6R0CD05L	GRM0335C1H6R0CD01D	GRM1555C1H6R0CA01D
	±0.5pF(D)	GRM0225C1C6R0DD05L	GRM0335C1H6R0DD01D	GRM1555C1H6R0DA01D
6.1pF(6R1)	±0.05pF(W)	GRM0225C1C6R1WD05L	GRM0335C1H6R1WD01D	GRM1555C1H6R1WA01D
	±0.1pF(B)	GRM0225C1C6R1BD05L	GRM0335C1H6R1BD01D	GRM1555C1H6R1BA01D
	±0.25pF(C)	GRM0225C1C6R1CD05L	GRM0335C1H6R1CD01D	GRM1555C1H6R1CA01D
	±0.5pF(D)	GRM0225C1C6R1DD05L	GRM0335C1H6R1DD01D	GRM1555C1H6R1DA01D
6.2pF(6R2)	±0.05pF(W)	GRM0225C1C6R2WD05L	GRM0335C1H6R2WD01D	GRM1555C1H6R2WA01D
	±0.1pF(B)	GRM0225C1C6R2BD05L	GRM0335C1H6R2BD01D	GRM1555C1H6R2BA01D
	±0.25pF(C)	GRM0225C1C6R2CD05L	GRM0335C1H6R2CD01D	GRM1555C1H6R2CA01D
	±0.5pF(D)	GRM0225C1C6R2DD05L	GRM0335C1H6R2DD01D	GRM1555C1H6R2DA01D
6.3pF(6R3)	±0.05pF(W)	GRM0225C1C6R3WD05L	GRM0335C1H6R3WD01D	GRM1555C1H6R3WA01D
	±0.1pF(B)	GRM0225C1C6R3BD05L	GRM0335C1H6R3BD01D	GRM1555C1H6R3BA01D
	±0.25pF(C)	GRM0225C1C6R3CD05L	GRM0335C1H6R3CD01D	GRM1555C1H6R3CA01D
	±0.5pF(D)	GRM0225C1C6R3DD05L	GRM0335C1H6R3DD01D	GRM1555C1H6R3DA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

- |               |           |          |           |          |           |           |            |          |            |          |  |
|---------------|-----------|----------|-----------|----------|-----------|-----------|------------|----------|------------|----------|--|
| (Part Number) | <b>GR</b> | <b>M</b> | <b>02</b> | <b>2</b> | <b>5C</b> | <b>1C</b> | <b>5R2</b> | <b>W</b> | <b>D05</b> | <b>L</b> |  |
|               | ①         | ②        | ③         | ④        | ⑤         | ⑥         | ⑦          | ⑧        | ⑨          | ⑩        |  |
- ① Product ID      ② Series      ③ Dimensions (LxW)      ④ Dimension (T)
  - ⑤ Temperature Characteristics      ⑥ Rated Voltage      ⑦ Capacitance
  - ⑧ Capacitance Tolerance      ⑨ Individual Specification Code      ⑩ Packaging\*

Packaging Code in Part Number shows STD 180mm Reel Taping.

\*GRM022: D is applicable.



## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		0.4x0.2(02)<01005>	0.6x0.3(03)<0201>	1.0x0.5(15)<0402>
Rated Volt. [Vdc]		16(1C)	50(1H)	50(1H)
Capacitance	Tolerance	Part Number		
6.4pF(6R4)	±0.05pF(W)	GRM0225C1C6R4WD05L	GRM0335C1H6R4WD01D	GRM1555C1H6R4WA01D
	±0.1pF(B)	GRM0225C1C6R4BD05L	GRM0335C1H6R4BD01D	GRM1555C1H6R4BA01D
	±0.25pF(C)	GRM0225C1C6R4CD05L	GRM0335C1H6R4CD01D	GRM1555C1H6R4CA01D
	±0.5pF(D)	GRM0225C1C6R4DD05L	GRM0335C1H6R4DD01D	GRM1555C1H6R4DA01D
6.5pF(6R5)	±0.05pF(W)	GRM0225C1C6R5WD05L	GRM0335C1H6R5WD01D	GRM1555C1H6R5WA01D
	±0.1pF(B)	GRM0225C1C6R5BD05L	GRM0335C1H6R5BD01D	GRM1555C1H6R5BA01D
	±0.25pF(C)	GRM0225C1C6R5CD05L	GRM0335C1H6R5CD01D	GRM1555C1H6R5CA01D
	±0.5pF(D)	GRM0225C1C6R5DD05L	GRM0335C1H6R5DD01D	GRM1555C1H6R5DA01D
6.6pF(6R6)	±0.05pF(W)	GRM0225C1C6R6WD05L	GRM0335C1H6R6WD01D	GRM1555C1H6R6WA01D
	±0.1pF(B)	GRM0225C1C6R6BD05L	GRM0335C1H6R6BD01D	GRM1555C1H6R6BA01D
	±0.25pF(C)	GRM0225C1C6R6CD05L	GRM0335C1H6R6CD01D	GRM1555C1H6R6CA01D
	±0.5pF(D)	GRM0225C1C6R6DD05L	GRM0335C1H6R6DD01D	GRM1555C1H6R6DA01D
6.7pF(6R7)	±0.05pF(W)	GRM0225C1C6R7WD05L	GRM0335C1H6R7WD01D	GRM1555C1H6R7WA01D
	±0.1pF(B)	GRM0225C1C6R7BD05L	GRM0335C1H6R7BD01D	GRM1555C1H6R7BA01D
	±0.25pF(C)	GRM0225C1C6R7CD05L	GRM0335C1H6R7CD01D	GRM1555C1H6R7CA01D
	±0.5pF(D)	GRM0225C1C6R7DD05L	GRM0335C1H6R7DD01D	GRM1555C1H6R7DA01D
6.8pF(6R8)	±0.05pF(W)	GRM0225C1C6R8WD05L	GRM0335C1H6R8WD01D	GRM1555C1H6R8WA01D
	±0.1pF(B)	GRM0225C1C6R8BD05L	GRM0335C1H6R8BD01D	GRM1555C1H6R8BA01D
	±0.25pF(C)	GRM0225C1C6R8CD05L	GRM0335C1H6R8CD01D	GRM1555C1H6R8CA01D
	±0.5pF(D)	GRM0225C1C6R8DD05L	GRM0335C1H6R8DD01D	GRM1555C1H6R8DA01D
6.9pF(6R9)	±0.05pF(W)	GRM0225C1C6R9WD05L	GRM0335C1H6R9WD01D	GRM1555C1H6R9WA01D
	±0.1pF(B)	GRM0225C1C6R9BD05L	GRM0335C1H6R9BD01D	GRM1555C1H6R9BA01D
	±0.25pF(C)	GRM0225C1C6R9CD05L	GRM0335C1H6R9CD01D	GRM1555C1H6R9CA01D
	±0.5pF(D)	GRM0225C1C6R9DD05L	GRM0335C1H6R9DD01D	GRM1555C1H6R9DA01D
7.0pF(7R0)	±0.05pF(W)	GRM0225C1C7R0WD05L	GRM0335C1H7R0WD01D	GRM1555C1H7R0WA01D
	±0.1pF(B)	GRM0225C1C7R0BD05L	GRM0335C1H7R0BD01D	GRM1555C1H7R0BA01D
	±0.25pF(C)	GRM0225C1C7R0CD05L	GRM0335C1H7R0CD01D	GRM1555C1H7R0CA01D
	±0.5pF(D)	GRM0225C1C7R0DD05L	GRM0335C1H7R0DD01D	GRM1555C1H7R0DA01D
7.1pF(7R1)	±0.05pF(W)	GRM0225C1C7R1WD05L	GRM0335C1H7R1WD01D	GRM1555C1H7R1WA01D
	±0.1pF(B)	GRM0225C1C7R1BD05L	GRM0335C1H7R1BD01D	GRM1555C1H7R1BA01D
	±0.25pF(C)	GRM0225C1C7R1CD05L	GRM0335C1H7R1CD01D	GRM1555C1H7R1CA01D
	±0.5pF(D)	GRM0225C1C7R1DD05L	GRM0335C1H7R1DD01D	GRM1555C1H7R1DA01D
7.2pF(7R2)	±0.05pF(W)	GRM0225C1C7R2WD05L	GRM0335C1H7R2WD01D	GRM1555C1H7R2WA01D
	±0.1pF(B)	GRM0225C1C7R2BD05L	GRM0335C1H7R2BD01D	GRM1555C1H7R2BA01D
	±0.25pF(C)	GRM0225C1C7R2CD05L	GRM0335C1H7R2CD01D	GRM1555C1H7R2CA01D
	±0.5pF(D)	GRM0225C1C7R2DD05L	GRM0335C1H7R2DD01D	GRM1555C1H7R2DA01D
7.3pF(7R3)	±0.05pF(W)	GRM0225C1C7R3WD05L	GRM0335C1H7R3WD01D	GRM1555C1H7R3WA01D
	±0.1pF(B)	GRM0225C1C7R3BD05L	GRM0335C1H7R3BD01D	GRM1555C1H7R3BA01D
	±0.25pF(C)	GRM0225C1C7R3CD05L	GRM0335C1H7R3CD01D	GRM1555C1H7R3CA01D
	±0.5pF(D)	GRM0225C1C7R3DD05L	GRM0335C1H7R3DD01D	GRM1555C1H7R3DA01D
7.4pF(7R4)	±0.05pF(W)	GRM0225C1C7R4WD05L	GRM0335C1H7R4WD01D	GRM1555C1H7R4WA01D
	±0.1pF(B)	GRM0225C1C7R4BD05L	GRM0335C1H7R4BD01D	GRM1555C1H7R4BA01D
	±0.25pF(C)	GRM0225C1C7R4CD05L	GRM0335C1H7R4CD01D	GRM1555C1H7R4CA01D
	±0.5pF(D)	GRM0225C1C7R4DD05L	GRM0335C1H7R4DD01D	GRM1555C1H7R4DA01D
7.5pF(7R5)	±0.05pF(W)	GRM0225C1C7R5WD05L	GRM0335C1H7R5WD01D	GRM1555C1H7R5WA01D
	±0.1pF(B)	GRM0225C1C7R5BD05L	GRM0335C1H7R5BD01D	GRM1555C1H7R5BA01D
	±0.25pF(C)	GRM0225C1C7R5CD05L	GRM0335C1H7R5CD01D	GRM1555C1H7R5CA01D
	±0.5pF(D)	GRM0225C1C7R5DD05L	GRM0335C1H7R5DD01D	GRM1555C1H7R5DA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GQM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		0.4x0.2(02)<01005>	0.6x0.3(03)<0201>	1.0x0.5(15)<0402>
Rated Volt. [Vdc]		16(1C)	50(1H)	50(1H)
Capacitance	Tolerance	Part Number		
7.6pF(7R6)	±0.05pF(W)	GRM0225C1C7R6WD05L	GRM0335C1H7R6WD01D	GRM1555C1H7R6WA01D
	±0.1pF(B)	GRM0225C1C7R6BD05L	GRM0335C1H7R6BD01D	GRM1555C1H7R6BA01D
	±0.25pF(C)	GRM0225C1C7R6CD05L	GRM0335C1H7R6CD01D	GRM1555C1H7R6CA01D
	±0.5pF(D)	GRM0225C1C7R6DD05L	GRM0335C1H7R6DD01D	GRM1555C1H7R6DA01D
7.7pF(7R7)	±0.05pF(W)	GRM0225C1C7R7WD05L	GRM0335C1H7R7WD01D	GRM1555C1H7R7WA01D
	±0.1pF(B)	GRM0225C1C7R7BD05L	GRM0335C1H7R7BD01D	GRM1555C1H7R7BA01D
	±0.25pF(C)	GRM0225C1C7R7CD05L	GRM0335C1H7R7CD01D	GRM1555C1H7R7CA01D
	±0.5pF(D)	GRM0225C1C7R7DD05L	GRM0335C1H7R7DD01D	GRM1555C1H7R7DA01D
7.8pF(7R8)	±0.05pF(W)	GRM0225C1C7R8WD05L	GRM0335C1H7R8WD01D	GRM1555C1H7R8WA01D
	±0.1pF(B)	GRM0225C1C7R8BD05L	GRM0335C1H7R8BD01D	GRM1555C1H7R8BA01D
	±0.25pF(C)	GRM0225C1C7R8CD05L	GRM0335C1H7R8CD01D	GRM1555C1H7R8CA01D
	±0.5pF(D)	GRM0225C1C7R8DD05L	GRM0335C1H7R8DD01D	GRM1555C1H7R8DA01D
7.9pF(7R9)	±0.05pF(W)	GRM0225C1C7R9WD05L	GRM0335C1H7R9WD01D	GRM1555C1H7R9WA01D
	±0.1pF(B)	GRM0225C1C7R9BD05L	GRM0335C1H7R9BD01D	GRM1555C1H7R9BA01D
	±0.25pF(C)	GRM0225C1C7R9CD05L	GRM0335C1H7R9CD01D	GRM1555C1H7R9CA01D
	±0.5pF(D)	GRM0225C1C7R9DD05L	GRM0335C1H7R9DD01D	GRM1555C1H7R9DA01D
8.0pF(8R0)	±0.05pF(W)	GRM0225C1C8R0WD05L	GRM0335C1H8R0WD01D	GRM1555C1H8R0WA01D
	±0.1pF(B)	GRM0225C1C8R0BD05L	GRM0335C1H8R0BD01D	GRM1555C1H8R0BA01D
	±0.25pF(C)	GRM0225C1C8R0CD05L	GRM0335C1H8R0CD01D	GRM1555C1H8R0CA01D
	±0.5pF(D)	GRM0225C1C8R0DD05L	GRM0335C1H8R0DD01D	GRM1555C1H8R0DA01D
8.1pF(8R1)	±0.05pF(W)	GRM0225C1C8R1WD05L	GRM0335C1H8R1WD01D	GRM1555C1H8R1WA01D
	±0.1pF(B)	GRM0225C1C8R1BD05L	GRM0335C1H8R1BD01D	GRM1555C1H8R1BA01D
	±0.25pF(C)	GRM0225C1C8R1CD05L	GRM0335C1H8R1CD01D	GRM1555C1H8R1CA01D
	±0.5pF(D)	GRM0225C1C8R1DD05L	GRM0335C1H8R1DD01D	GRM1555C1H8R1DA01D
8.2pF(8R2)	±0.05pF(W)	GRM0225C1C8R2WD05L	GRM0335C1H8R2WD01D	GRM1555C1H8R2WA01D
	±0.1pF(B)	GRM0225C1C8R2BD05L	GRM0335C1H8R2BD01D	GRM1555C1H8R2BA01D
	±0.25pF(C)	GRM0225C1C8R2CD05L	GRM0335C1H8R2CD01D	GRM1555C1H8R2CA01D
	±0.5pF(D)	GRM0225C1C8R2DD05L	GRM0335C1H8R2DD01D	GRM1555C1H8R2DA01D
8.3pF(8R3)	±0.05pF(W)	GRM0225C1C8R3WD05L	GRM0335C1H8R3WD01D	GRM1555C1H8R3WA01D
	±0.1pF(B)	GRM0225C1C8R3BD05L	GRM0335C1H8R3BD01D	GRM1555C1H8R3BA01D
	±0.25pF(C)	GRM0225C1C8R3CD05L	GRM0335C1H8R3CD01D	GRM1555C1H8R3CA01D
	±0.5pF(D)	GRM0225C1C8R3DD05L	GRM0335C1H8R3DD01D	GRM1555C1H8R3DA01D
8.4pF(8R4)	±0.05pF(W)	GRM0225C1C8R4WD05L	GRM0335C1H8R4WD01D	GRM1555C1H8R4WA01D
	±0.1pF(B)	GRM0225C1C8R4BD05L	GRM0335C1H8R4BD01D	GRM1555C1H8R4BA01D
	±0.25pF(C)	GRM0225C1C8R4CD05L	GRM0335C1H8R4CD01D	GRM1555C1H8R4CA01D
	±0.5pF(D)	GRM0225C1C8R4DD05L	GRM0335C1H8R4DD01D	GRM1555C1H8R4DA01D
8.5pF(8R5)	±0.05pF(W)	GRM0225C1C8R5WD05L	GRM0335C1H8R5WD01D	GRM1555C1H8R5WA01D
	±0.1pF(B)	GRM0225C1C8R5BD05L	GRM0335C1H8R5BD01D	GRM1555C1H8R5BA01D
	±0.25pF(C)	GRM0225C1C8R5CD05L	GRM0335C1H8R5CD01D	GRM1555C1H8R5CA01D
	±0.5pF(D)	GRM0225C1C8R5DD05L	GRM0335C1H8R5DD01D	GRM1555C1H8R5DA01D
8.6pF(8R6)	±0.05pF(W)	GRM0225C1C8R6WD05L	GRM0335C1H8R6WD01D	GRM1555C1H8R6WA01D
	±0.1pF(B)	GRM0225C1C8R6BD05L	GRM0335C1H8R6BD01D	GRM1555C1H8R6BA01D
	±0.25pF(C)	GRM0225C1C8R6CD05L	GRM0335C1H8R6CD01D	GRM1555C1H8R6CA01D
	±0.5pF(D)	GRM0225C1C8R6DD05L	GRM0335C1H8R6DD01D	GRM1555C1H8R6DA01D
8.7pF(8R7)	±0.05pF(W)	GRM0225C1C8R7WD05L	GRM0335C1H8R7WD01D	GRM1555C1H8R7WA01D
	±0.1pF(B)	GRM0225C1C8R7BD05L	GRM0335C1H8R7BD01D	GRM1555C1H8R7BA01D
	±0.25pF(C)	GRM0225C1C8R7CD05L	GRM0335C1H8R7CD01D	GRM1555C1H8R7CA01D
	±0.5pF(D)	GRM0225C1C8R7DD05L	GRM0335C1H8R7DD01D	GRM1555C1H8R7DA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

- (Part Number) **GR** **M** **02** **2** **5C** **1C** **7R6** **W** **D05** **L**
- ① Product ID
  - ② Series
  - ③ Dimensions (LxW)
  - ④ Dimension (T)
  - ⑤ Temperature Characteristics
  - ⑥ Rated Voltage
  - ⑦ Capacitance
  - ⑧ Capacitance Tolerance
  - ⑨ Individual Specification Code
  - ⑩ Packaging\*

Packaging Code in Part Number shows STD 180mm Reel Taping.

\*GRM022: D is applicable.

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		0.4x0.2(02)<01005>	0.6x0.3(03)<0201>	1.0x0.5(15)<0402>
Rated Volt. [Vdc]		16(1C)	50(1H)	50(1H)
Capacitance	Tolerance	Part Number		
8.8pF(8R8)	±0.05pF(W)	GRM0225C1C8R8WD05L	GRM0335C1H8R8WD01D	GRM1555C1H8R8WA01D
	±0.1pF(B)	GRM0225C1C8R8BD05L	GRM0335C1H8R8BD01D	GRM1555C1H8R8BA01D
	±0.25pF(C)	GRM0225C1C8R8CD05L	GRM0335C1H8R8CD01D	GRM1555C1H8R8CA01D
	±0.5pF(D)	GRM0225C1C8R8DD05L	GRM0335C1H8R8DD01D	GRM1555C1H8R8DA01D
8.9pF(8R9)	±0.05pF(W)	GRM0225C1C8R9WD05L	GRM0335C1H8R9WD01D	GRM1555C1H8R9WA01D
	±0.1pF(B)	GRM0225C1C8R9BD05L	GRM0335C1H8R9BD01D	GRM1555C1H8R9BA01D
	±0.25pF(C)	GRM0225C1C8R9CD05L	GRM0335C1H8R9CD01D	GRM1555C1H8R9CA01D
	±0.5pF(D)	GRM0225C1C8R9DD05L	GRM0335C1H8R9DD01D	GRM1555C1H8R9DA01D
9.0pF(9R0)	±0.05pF(W)	GRM0225C1C9R0WD05L	GRM0335C1H9R0WD01D	GRM1555C1H9R0WA01D
	±0.1pF(B)	GRM0225C1C9R0BD05L	GRM0335C1H9R0BD01D	GRM1555C1H9R0BA01D
	±0.25pF(C)	GRM0225C1C9R0CD05L	GRM0335C1H9R0CD01D	GRM1555C1H9R0CA01D
	±0.5pF(D)	GRM0225C1C9R0DD05L	GRM0335C1H9R0DD01D	GRM1555C1H9R0DA01D
9.1pF(9R1)	±0.05pF(W)	GRM0225C1C9R1WD05L	GRM0335C1H9R1WD01D	GRM1555C1H9R1WA01D
	±0.1pF(B)	GRM0225C1C9R1BD05L	GRM0335C1H9R1BD01D	GRM1555C1H9R1BA01D
	±0.25pF(C)	GRM0225C1C9R1CD05L	GRM0335C1H9R1CD01D	GRM1555C1H9R1CA01D
	±0.5pF(D)	GRM0225C1C9R1DD05L	GRM0335C1H9R1DD01D	GRM1555C1H9R1DA01D
9.2pF(9R2)	±0.05pF(W)	GRM0225C1C9R2WD05L	GRM0335C1H9R2WD01D	GRM1555C1H9R2WA01D
	±0.1pF(B)	GRM0225C1C9R2BD05L	GRM0335C1H9R2BD01D	GRM1555C1H9R2BA01D
	±0.25pF(C)	GRM0225C1C9R2CD05L	GRM0335C1H9R2CD01D	GRM1555C1H9R2CA01D
	±0.5pF(D)	GRM0225C1C9R2DD05L	GRM0335C1H9R2DD01D	GRM1555C1H9R2DA01D
9.3pF(9R3)	±0.05pF(W)	GRM0225C1C9R3WD05L	GRM0335C1H9R3WD01D	GRM1555C1H9R3WA01D
	±0.1pF(B)	GRM0225C1C9R3BD05L	GRM0335C1H9R3BD01D	GRM1555C1H9R3BA01D
	±0.25pF(C)	GRM0225C1C9R3CD05L	GRM0335C1H9R3CD01D	GRM1555C1H9R3CA01D
	±0.5pF(D)	GRM0225C1C9R3DD05L	GRM0335C1H9R3DD01D	GRM1555C1H9R3DA01D
9.4pF(9R4)	±0.05pF(W)	GRM0225C1C9R4WD05L	GRM0335C1H9R4WD01D	GRM1555C1H9R4WA01D
	±0.1pF(B)	GRM0225C1C9R4BD05L	GRM0335C1H9R4BD01D	GRM1555C1H9R4BA01D
	±0.25pF(C)	GRM0225C1C9R4CD05L	GRM0335C1H9R4CD01D	GRM1555C1H9R4CA01D
	±0.5pF(D)	GRM0225C1C9R4DD05L	GRM0335C1H9R4DD01D	GRM1555C1H9R4DA01D
9.5pF(9R5)	±0.05pF(W)	GRM0225C1C9R5WD05L	GRM0335C1H9R5WD01D	GRM1555C1H9R5WA01D
	±0.1pF(B)	GRM0225C1C9R5BD05L	GRM0335C1H9R5BD01D	GRM1555C1H9R5BA01D
	±0.25pF(C)	GRM0225C1C9R5CD05L	GRM0335C1H9R5CD01D	GRM1555C1H9R5CA01D
	±0.5pF(D)	GRM0225C1C9R5DD05L	GRM0335C1H9R5DD01D	GRM1555C1H9R5DA01D
9.6pF(9R6)	±0.05pF(W)	GRM0225C1C9R6WD05L	GRM0335C1H9R6WD01D	GRM1555C1H9R6WA01D
	±0.1pF(B)	GRM0225C1C9R6BD05L	GRM0335C1H9R6BD01D	GRM1555C1H9R6BA01D
	±0.25pF(C)	GRM0225C1C9R6CD05L	GRM0335C1H9R6CD01D	GRM1555C1H9R6CA01D
	±0.5pF(D)	GRM0225C1C9R6DD05L	GRM0335C1H9R6DD01D	GRM1555C1H9R6DA01D
9.7pF(9R7)	±0.05pF(W)	GRM0225C1C9R7WD05L	GRM0335C1H9R7WD01D	GRM1555C1H9R7WA01D
	±0.1pF(B)	GRM0225C1C9R7BD05L	GRM0335C1H9R7BD01D	GRM1555C1H9R7BA01D
	±0.25pF(C)	GRM0225C1C9R7CD05L	GRM0335C1H9R7CD01D	GRM1555C1H9R7CA01D
	±0.5pF(D)	GRM0225C1C9R7DD05L	GRM0335C1H9R7DD01D	GRM1555C1H9R7DA01D
9.8pF(9R8)	±0.05pF(W)	GRM0225C1C9R8WD05L	GRM0335C1H9R8WD01D	GRM1555C1H9R8WA01D
	±0.1pF(B)	GRM0225C1C9R8BD05L	GRM0335C1H9R8BD01D	GRM1555C1H9R8BA01D
	±0.25pF(C)	GRM0225C1C9R8CD05L	GRM0335C1H9R8CD01D	GRM1555C1H9R8CA01D
	±0.5pF(D)	GRM0225C1C9R8DD05L	GRM0335C1H9R8DD01D	GRM1555C1H9R8DA01D
9.9pF(9R9)	±0.05pF(W)	GRM0225C1C9R9WD05L	GRM0335C1H9R9WD01D	GRM1555C1H9R9WA01D
	±0.1pF(B)	GRM0225C1C9R9BD05L	GRM0335C1H9R9BD01D	GRM1555C1H9R9BA01D
	±0.25pF(C)	GRM0225C1C9R9CD05L	GRM0335C1H9R9CD01D	GRM1555C1H9R9CA01D
	±0.5pF(D)	GRM0225C1C9R9DD05L	GRM0335C1H9R9DD01D	GRM1555C1H9R9DA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		0.4x0.2(02)<01005>			0.6x0.3(03)<0201>
Rated Volt. [Vdc]		16(1C)	10(1A)	6.3(0J)	50(1H)
Capacitance	Tolerance	Part Number			
10pF(100)	±2%(G)	GRM0225C1C100GD05L			GRM0335C1H100GD01D
	±5%(J)	GRM0225C1C100JD05L			GRM0335C1H100JD01D
12pF(120)	±2%(G)	GRM0225C1C120GD05L			GRM0335C1H120GD01D
	±5%(J)	GRM0225C1C120JD05L			GRM0335C1H120JD01D
15pF(150)	±2%(G)	GRM0225C1C150GD05L			GRM0335C1H150GD01D
	±5%(J)	GRM0225C1C150JD05L			GRM0335C1H150JD01D
18pF(180)	±2%(G)	GRM0225C1C180GD05L			GRM0335C1H180GD01D
	±5%(J)	GRM0225C1C180JD05L			GRM0335C1H180JD01D
22pF(220)	±2%(G)	GRM0225C1C220GD05L			GRM0335C1H220GD01D
	±5%(J)	GRM0225C1C220JD05L			GRM0335C1H220JD01D
27pF(270)	±2%(G)	GRM0225C1C270GD05L			GRM0335C1H270GD01D
	±5%(J)	GRM0225C1C270JD05L			GRM0335C1H270JD01D
33pF(330)	±2%(G)	GRM0225C1C330GD05L			GRM0335C1H330GD01D
	±5%(J)	GRM0225C1C330JD05L			GRM0335C1H330JD01D
39pF(390)	±2%(G)	GRM0225C1C390GD05L			GRM0335C1H390GD01D
	±5%(J)	GRM0225C1C390JD05L			GRM0335C1H390JD01D
47pF(470)	±2%(G)	GRM0225C1C470GD05L			GRM0335C1H470GD01D
	±5%(J)	GRM0225C1C470JD05L			GRM0335C1H470JD01D
56pF(560)	±2%(G)		GRM0225C1A560GD05L	GRM0225C0J560GD05L	GRM0335C1H560GD01D
	±5%(J)		GRM0225C1A560JD05L	GRM0225C0J560JD05L	GRM0335C1H560JD01D
68pF(680)	±2%(G)		GRM0225C1A680GD05L	GRM0225C0J680GD05L	GRM0335C1H680GD01D
	±5%(J)		GRM0225C1A680JD05L	GRM0225C0J680JD05L	GRM0335C1H680JD01D
82pF(820)	±2%(G)		GRM0225C1A820GD05L	GRM0225C0J820GD05L	GRM0335C1H820GD01D
	±5%(J)		GRM0225C1A820JD05L	GRM0225C0J820JD05L	GRM0335C1H820JD01D
100pF(101)	±2%(G)		GRM0225C1A101GD05L	GRM0225C0J101GD05L	GRM0335C1H101GD01D
	±5%(J)		GRM0225C1A101JD05L	GRM0225C0J101JD05L	GRM0335C1H101JD01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

- (Part Number) **GR** **M** **02** **2** **5C** **1C** **100** **G** **D05** **L**
- ① Product ID
  - ② Series
  - ③ Dimensions (LxW)
  - ④ Dimension (T)
  - ⑤ Temperature Characteristics
  - ⑥ Rated Voltage
  - ⑦ Capacitance
  - ⑧ Capacitance Tolerance
  - ⑨ Individual Specification Code
  - ⑩ Packaging\*

Packaging Code in Part Number shows STD 180mm Reel Taping.

\*GRM022: D is applicable.

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		1.0x0.5(15)<0402>
Rated Volt. [Vdc]		50(1H)
TC		C0G(5C)
Capacitance	Tolerance	Part Number
10pF(100)	±2%(G)	GRM1555C1H100GA01D
	±5%(J)	GRM1555C1H100JA01D
12pF(120)	±2%(G)	GRM1555C1H120GA01D
	±5%(J)	GRM1555C1H120JA01D
15pF(150)	±2%(G)	GRM1555C1H150GA01D
	±5%(J)	GRM1555C1H150JA01D
18pF(180)	±2%(G)	GRM1555C1H180GA01D
	±5%(J)	GRM1555C1H180JA01D
22pF(220)	±2%(G)	GRM1555C1H220GA01D
	±5%(J)	GRM1555C1H220JA01D
27pF(270)	±2%(G)	GRM1555C1H270GA01D
	±5%(J)	GRM1555C1H270JA01D
33pF(330)	±2%(G)	GRM1555C1H330GA01D
	±5%(J)	GRM1555C1H330JA01D
39pF(390)	±2%(G)	GRM1555C1H390GA01D
	±5%(J)	GRM1555C1H390JA01D
47pF(470)	±2%(G)	GRM1555C1H470GA01D
	±5%(J)	GRM1555C1H470JA01D
56pF(560)	±2%(G)	GRM1555C1H560GA01D
	±5%(J)	GRM1555C1H560JA01D
68pF(680)	±2%(G)	GRM1555C1H680GA01D
	±5%(J)	GRM1555C1H680JA01D
82pF(820)	±2%(G)	GRM1555C1H820GA01D
	±5%(J)	GRM1555C1H820JA01D
100pF(101)	±2%(G)	GRM1555C1H101GA01D
	±5%(J)	GRM1555C1H101JA01D
120pF(121)	±2%(G)	GRM1555C1H121GA01D
	±5%(J)	GRM1555C1H121JA01D
150pF(151)	±2%(G)	GRM1555C1H151GA01D
	±5%(J)	GRM1555C1H151JA01D
180pF(181)	±2%(G)	GRM1555C1H181GA01D
	±5%(J)	GRM1555C1H181JA01D
220pF(221)	±2%(G)	GRM1555C1H221GA01D
	±5%(J)	GRM1555C1H221JA01D
270pF(271)	±2%(G)	GRM1555C1H271GA01D
	±5%(J)	GRM1555C1H271JA01D
330pF(331)	±2%(G)	GRM1555C1H331GA01D
	±5%(J)	GRM1555C1H331JA01D
390pF(391)	±2%(G)	GRM1555C1H391GA01D
	±5%(J)	GRM1555C1H391JA01D
470pF(471)	±2%(G)	GRM1555C1H471GA01D
	±5%(J)	GRM1555C1H471JA01D
560pF(561)	±2%(G)	GRM1555C1H561GA01D
	±5%(J)	GRM1555C1H561JA01D
680pF(681)	±2%(G)	GRM1555C1H681GA01D
	±5%(J)	GRM1555C1H681JA01D
820pF(821)	±2%(G)	GRM1555C1H821GA01D
	±5%(J)	GRM1555C1H821JA01D
1000pF(102)	±2%(G)	GRM1555C1H102GA01D
	±5%(J)	GRM1555C1H102JA01D

The part number code is shown in ( ) and Unit is shown in [ ]. <->: EIA [inch] Code

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		1.6x0.8(18)<0603>	
Rated Volt. [Vdc]		100(2A)	50(1H)
Capacitance	Tolerance	Part Number	
10pF(100)	±5%(J)	GRM1885C2A100JA01D	GRM1885C1H100JA01D
12pF(120)	±5%(J)	GRM1885C2A120JA01D	GRM1885C1H120JA01D
15pF(150)	±5%(J)	GRM1885C2A150JA01D	GRM1885C1H150JA01D
18pF(180)	±5%(J)	GRM1885C2A180JA01D	GRM1885C1H180JA01D
22pF(220)	±5%(J)	GRM1885C2A220JA01D	GRM1885C1H220JA01D
27pF(270)	±5%(J)	GRM1885C2A270JA01D	GRM1885C1H270JA01D
33pF(330)	±5%(J)	GRM1885C2A330JA01D	GRM1885C1H330JA01D
39pF(390)	±5%(J)	GRM1885C2A390JA01D	GRM1885C1H390JA01D
47pF(470)	±5%(J)	GRM1885C2A470JA01D	GRM1885C1H470JA01D
56pF(560)	±5%(J)	GRM1885C2A560JA01D	GRM1885C1H560JA01D
68pF(680)	±5%(J)	GRM1885C2A680JA01D	GRM1885C1H680JA01D
82pF(820)	±5%(J)	GRM1885C2A820JA01D	GRM1885C1H820JA01D
100pF(101)	±5%(J)	GRM1885C2A101JA01D	GRM1885C1H101JA01D
120pF(121)	±5%(J)	GRM1885C2A121JA01D	GRM1885C1H121JA01D
150pF(151)	±5%(J)	GRM1885C2A151JA01D	GRM1885C1H151JA01D
180pF(181)	±5%(J)	GRM1885C2A181JA01D	GRM1885C1H181JA01D
220pF(221)	±5%(J)	GRM1885C2A221JA01D	GRM1885C1H221JA01D
270pF(271)	±5%(J)	GRM1885C2A271JA01D	GRM1885C1H271JA01D
330pF(331)	±5%(J)	GRM1885C2A331JA01D	GRM1885C1H331JA01D
390pF(391)	±5%(J)	GRM1885C2A391JA01D	GRM1885C1H391JA01D
470pF(471)	±5%(J)	GRM1885C2A471JA01D	GRM1885C1H471JA01D
560pF(561)	±5%(J)	GRM1885C2A561JA01D	GRM1885C1H561JA01D
680pF(681)	±5%(J)	GRM1885C2A681JA01D	GRM1885C1H681JA01D
820pF(821)	±5%(J)	GRM1885C2A821JA01D	GRM1885C1H821JA01D
1000pF(102)	±5%(J)	GRM1885C2A102JA01D	GRM1885C1H102JA01D
1200pF(122)	±5%(J)	GRM1885C2A122JA01D	GRM1885C1H122JA01D
1500pF(152)	±5%(J)	GRM1885C2A152JA01D	GRM1885C1H152JA01D
1800pF(182)	±5%(J)		GRM1885C1H182JA01D
2200pF(222)	±5%(J)		GRM1885C1H222JA01D
2700pF(272)	±5%(J)		GRM1885C1H272JA01D
3300pF(332)	±5%(J)		GRM1885C1H332JA01D
3900pF(392)	±5%(J)		GRM1885C1H392JA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

(Part Number) **GR** **M** **18** **8** **5C** **2A** **100** **J** **A01** **D**    ❶ Product ID    ❷ Series    ❸ Dimensions (LxW)    ❹ Dimension (T)  
                           ❸    ❹    ❺    ❻    ❼    ❽    ❾    ❿    ⓫    ⓬    ⓭    ⓮    ⓯    ⓰    ⓱    ⓲    ⓳    ⓴    ⓵    ⓶    ⓷    ⓸    ⓹    ⓺    ⓻    ⓼    ⓽    ⓾    ⓿    ⑩  
                           ❶    ❷    ❸    ❹    ❺    ❻    ❼    ❽    ❾    ❿    ⑩

Packaging Code in Part Number shows STD 180mm Reel Taping.

## Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		2.0x1.25(21)<0805>		3.2x1.6(31)<1206>	
Rated Volt. [Vdc]		100(2A)	50(1H)	100(2A)	50(1H)
Capacitance	Tolerance	Part Number			
100pF(101)	±5%(J)	GRM2165C2A101JA01D			
120pF(121)	±5%(J)	GRM2165C2A121JA01D			
150pF(151)	±5%(J)	GRM2165C2A151JA01D			
180pF(181)	±5%(J)	GRM2165C2A181JA01D			
220pF(221)	±5%(J)	GRM2165C2A221JA01D			
270pF(271)	±5%(J)	GRM2165C2A271JA01D			
330pF(331)	±5%(J)	GRM2165C2A331JA01D			
390pF(391)	±5%(J)	GRM2165C2A391JA01D			
470pF(471)	±5%(J)	GRM2165C2A471JA01D			
560pF(561)	±5%(J)	GRM2165C2A561JA01D			
680pF(681)	±5%(J)	GRM2165C2A681JA01D			
820pF(821)	±5%(J)	GRM2165C2A821JA01D			
1000pF(102)	±5%(J)	GRM2165C2A102JA01D			
1200pF(122)	±5%(J)	GRM2165C2A122JA01D	GRM2165C1H122JA01D		
1500pF(152)	±5%(J)	GRM2165C2A152JA01D	GRM2165C1H152JA01D		
1800pF(182)	±5%(J)	GRM2165C2A182JA01D	GRM2165C1H182JA01D	GRM3195C2A182JA01D	
2200pF(222)	±5%(J)	GRM2165C2A222JA01D	GRM2165C1H222JA01D	GRM3195C2A222JA01D	
2700pF(272)	±5%(J)	GRM2165C2A272JA01D	GRM2165C1H272JA01D	GRM3195C2A272JA01D	
3300pF(332)	±5%(J)	GRM2165C2A332JA01D	GRM2165C1H332JA01D	GRM3195C2A332JA01D	
3900pF(392)	±5%(J)		GRM2165C1H392JA01D	GRM3195C2A392JA01D	
4700pF(472)	±5%(J)		GRM2165C1H472JA01D	GRM3195C2A472JA01D	GRM3195C1H472JA01D
5600pF(562)	±5%(J)		GRM2195C1H562JA01D	GRM3195C2A562JA01D	GRM3195C1H562JA01D
6800pF(682)	±5%(J)		GRM2195C1H682JA01D	GRM3195C2A682JA01D	GRM3195C1H682JA01D
8200pF(822)	±5%(J)		GRM2195C1H822JA01D	GRM3195C2A822JA01D	GRM3195C1H822JA01D
10000pF(103)	±5%(J)		GRM2195C1H103JA01D	GRM3195C2A103JA01D	GRM3195C1H103JA01D
12000pF(123)	±5%(J)		GRM2195C1H123JA01D	GRM3195C2A123JA01D	GRM3195C1H123JA01D
15000pF(153)	±5%(J)		GRM2195C1H153JA01D	GRM3195C2A153JA01D	GRM3195C1H153JA01D
18000pF(183)	±5%(J)		GRM2195C1H183JA01L	GRM3195C2A183JA01D	GRM3195C1H183JA01D
22000pF(223)	±5%(J)		GRM2195C1H223JA01L	GRM3195C2A223JA01D	GRM3195C1H223JA01D
27000pF(273)	±5%(J)				GRM3195C1H273JA01D
33000pF(333)	±5%(J)				GRM3195C1H333JA01D
39000pF(393)	±5%(J)				GRM3195C1H393JA01D
47000pF(473)	±5%(J)				GRM31M5C1H473JA01L
56000pF(563)	±5%(J)				GRM31M5C1H563JA01L
68000pF(683)	±5%(J)				GRM31C5C1H683JA01L
82000pF(823)	±5%(J)				GRM31C5C1H823JA01L
100000pF(104)	±5%(J)				GRM31C5C1H104JA01L

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

For General GRM Series

Array GNM Series

Low ESL LL Series

High-Q GJM Series

High Frequency GQM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

Product Information

## Temperature Compensating Type C0G(5C) Characteristics-Low Profile

LxW [mm]		1.0x0.5(15)<402>	
Rated Volt. [Vdc]		50(1H)	
Capacitance	Tolerance	Part Number	
0.1pF(R10)	±0.1pF(B)	GRM1535C1HR10BDD5D	
0.2pF(R20)	±0.1pF(B)	GRM1535C1HR20BDD5D	
0.3pF(R30)	±0.1pF(B)	GRM1535C1HR30BDD5D	
0.4pF(R40)	±0.1pF(B)	GRM1535C1HR40BDD5D	
0.5pF(R50)	±0.1pF(B)	GRM1535C1HR50BDD5D	
0.6pF(R60)	±0.1pF(B)	GRM1535C1HR60BDD5D	
0.7pF(R70)	±0.1pF(B)	GRM1535C1HR70BDD5D	
0.8pF(R80)	±0.1pF(B)	GRM1535C1HR80BDD5D	
0.9pF(R90)	±0.1pF(B)	GRM1535C1HR90BDD5D	
1.0pF(1R0)	±0.25pF(C)	GRM1535C1H1R0CDD5D	
1.1pF(1R1)	±0.25pF(C)	GRM1535C1H1R1CDD5D	
1.2pF(1R2)	±0.25pF(C)	GRM1535C1H1R2CDD5D	
1.3pF(1R3)	±0.25pF(C)	GRM1535C1H1R3CDD5D	
1.4pF(1R4)	±0.25pF(C)	GRM1535C1H1R4CDD5D	
1.5pF(1R5)	±0.25pF(C)	GRM1535C1H1R5CDD5D	
1.6pF(1R6)	±0.25pF(C)	GRM1535C1H1R6CDD5D	
1.7pF(1R7)	±0.25pF(C)	GRM1535C1H1R7CDD5D	
1.8pF(1R8)	±0.25pF(C)	GRM1535C1H1R8CDD5D	
1.9pF(1R9)	±0.25pF(C)	GRM1535C1H1R9CDD5D	
2.0pF(2R0)	±0.25pF(C)	GRM1535C1H2R0CDD5D	
2.1pF(2R1)	±0.25pF(C)	GRM1535C1H2R1CDD5D	
2.2pF(2R2)	±0.25pF(C)	GRM1535C1H2R2CDD5D	
2.3pF(2R3)	±0.25pF(C)	GRM1535C1H2R3CDD5D	
2.4pF(2R4)	±0.25pF(C)	GRM1535C1H2R4CDD5D	
2.5pF(2R5)	±0.25pF(C)	GRM1535C1H2R5CDD5D	
2.6pF(2R6)	±0.25pF(C)	GRM1535C1H2R6CDD5D	
2.7pF(2R7)	±0.25pF(C)	GRM1535C1H2R7CDD5D	
2.8pF(2R8)	±0.25pF(C)	GRM1535C1H2R8CDD5D	
2.9pF(2R9)	±0.25pF(C)	GRM1535C1H2R9CDD5D	
3.0pF(3R0)	±0.25pF(C)	GRM1535C1H3R0CDD5D	
3.1pF(3R1)	±0.25pF(C)	GRM1535C1H3R1CDD5D	
3.2pF(3R2)	±0.25pF(C)	GRM1535C1H3R2CDD5D	
3.3pF(3R3)	±0.25pF(C)	GRM1535C1H3R3CDD5D	
3.4pF(3R4)	±0.25pF(C)	GRM1535C1H3R4CDD5D	
3.5pF(3R5)	±0.25pF(C)	GRM1535C1H3R5CDD5D	
3.6pF(3R6)	±0.25pF(C)	GRM1535C1H3R6CDD5D	
3.7pF(3R7)	±0.25pF(C)	GRM1535C1H3R7CDD5D	
3.8pF(3R8)	±0.25pF(C)	GRM1535C1H3R8CDD5D	
3.9pF(3R9)	±0.25pF(C)	GRM1535C1H3R9CDD5D	
4.0pF(4R0)	±0.25pF(C)	GRM1535C1H4R0CDD5D	
4.1pF(4R1)	±0.25pF(C)	GRM1535C1H4R1CDD5D	
4.2pF(4R2)	±0.25pF(C)	GRM1535C1H4R2CDD5D	
4.3pF(4R3)	±0.25pF(C)	GRM1535C1H4R3CDD5D	
4.4pF(4R4)	±0.25pF(C)	GRM1535C1H4R4CDD5D	
4.5pF(4R5)	±0.25pF(C)	GRM1535C1H4R5CDD5D	
4.6pF(4R6)	±0.25pF(C)	GRM1535C1H4R6CDD5D	
4.7pF(4R7)	±0.25pF(C)	GRM1535C1H4R7CDD5D	
4.8pF(4R8)	±0.25pF(C)	GRM1535C1H4R8CDD5D	

LxW [mm]		1.0x0.5(15)<402>	
Rated Volt. [Vdc]		50(1H)	
Capacitance	Tolerance	Part Number	
4.9pF(4R9)	±0.25pF(C)	GRM1535C1H4R9CDD5D	
5.0pF(5R0)	±0.25pF(C)	GRM1535C1H5R0CDD5D	
5.1pF(5R1)	±0.5pF(D)	GRM1535C1H5R1DDD5D	
5.2pF(5R2)	±0.5pF(D)	GRM1535C1H5R2DDD5D	
5.3pF(5R3)	±0.5pF(D)	GRM1535C1H5R3DDD5D	
5.4pF(5R4)	±0.5pF(D)	GRM1535C1H5R4DDD5D	
5.5pF(5R5)	±0.5pF(D)	GRM1535C1H5R5DDD5D	
5.6pF(5R6)	±0.5pF(D)	GRM1535C1H5R6DDD5D	
5.7pF(5R7)	±0.5pF(D)	GRM1535C1H5R7DDD5D	
5.8pF(5R8)	±0.5pF(D)	GRM1535C1H5R8DDD5D	
5.9pF(5R9)	±0.5pF(D)	GRM1535C1H5R9DDD5D	
6.0pF(6R0)	±0.5pF(D)	GRM1535C1H6R0DDD5D	
6.1pF(6R1)	±0.5pF(D)	GRM1535C1H6R1DDD5D	
6.2pF(6R2)	±0.5pF(D)	GRM1535C1H6R2DDD5D	
6.3pF(6R3)	±0.5pF(D)	GRM1535C1H6R3DDD5D	
6.4pF(6R4)	±0.5pF(D)	GRM1535C1H6R4DDD5D	
6.5pF(6R5)	±0.5pF(D)	GRM1535C1H6R5DDD5D	
6.6pF(6R6)	±0.5pF(D)	GRM1535C1H6R6DDD5D	
6.7pF(6R7)	±0.5pF(D)	GRM1535C1H6R7DDD5D	
6.8pF(6R8)	±0.5pF(D)	GRM1535C1H6R8DDD5D	
6.9pF(6R9)	±0.5pF(D)	GRM1535C1H6R9DDD5D	
7.0pF(7R0)	±0.5pF(D)	GRM1535C1H7R0DDD5D	
7.1pF(7R1)	±0.5pF(D)	GRM1535C1H7R1DDD5D	
7.2pF(7R2)	±0.5pF(D)	GRM1535C1H7R2DDD5D	
7.3pF(7R3)	±0.5pF(D)	GRM1535C1H7R3DDD5D	
7.4pF(7R4)	±0.5pF(D)	GRM1535C1H7R4DDD5D	
7.5pF(7R5)	±0.5pF(D)	GRM1535C1H7R5DDD5D	
7.6pF(7R6)	±0.5pF(D)	GRM1535C1H7R6DDD5D	
7.7pF(7R7)	±0.5pF(D)	GRM1535C1H7R7DDD5D	
7.8pF(7R8)	±0.5pF(D)	GRM1535C1H7R8DDD5D	
7.9pF(7R9)	±0.5pF(D)	GRM1535C1H7R9DDD5D	
8.0pF(8R0)	±0.5pF(D)	GRM1535C1H8R0DDD5D	
8.1pF(8R1)	±0.5pF(D)	GRM1535C1H8R1DDD5D	
8.2pF(8R2)	±0.5pF(D)	GRM1535C1H8R2DDD5D	
8.3pF(8R3)	±0.5pF(D)	GRM1535C1H8R3DDD5D	
8.4pF(8R4)	±0.5pF(D)	GRM1535C1H8R4DDD5D	
8.5pF(8R5)	±0.5pF(D)	GRM1535C1H8R5DDD5D	
8.6pF(8R6)	±0.5pF(D)	GRM1535C1H8R6DDD5D	
8.7pF(8R7)	±0.5pF(D)	GRM1535C1H8R7DDD5D	
8.8pF(8R8)	±0.5pF(D)	GRM1535C1H8R8DDD5D	
8.9pF(8R9)	±0.5pF(D)	GRM1535C1H8R9DDD5D	
9.0pF(9R0)	±0.5pF(D)	GRM1535C1H9R0DDD5D	
9.1pF(9R1)	±0.5pF(D)	GRM1535C1H9R1DDD5D	
9.2pF(9R2)	±0.5pF(D)	GRM1535C1H9R2DDD5D	
9.3pF(9R3)	±0.5pF(D)	GRM1535C1H9R3DDD5D	
9.4pF(9R4)	±0.5pF(D)	GRM1535C1H9R4DDD5D	
9.5pF(9R5)	±0.5pF(D)	GRM1535C1H9R5DDD5D	
9.6pF(9R6)	±0.5pF(D)	GRM1535C1H9R6DDD5D	

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

- (Part Number) **GR** **M** **15** **3** **5C** **1H** **R10** **B** **DD5** **D**
- ① Product ID
  - ② Series
  - ③ Dimensions (LxW)
  - ④ Dimension (T)
  - ⑤ Temperature Characteristics
  - ⑥ Rated Voltage
  - ⑦ Capacitance
  - ⑧ Capacitance Tolerance
  - ⑨ Individual Specification Code
  - ⑩ Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.



## Temperature Compensating Type C0G(5C) Characteristics-Low Profile

LxW [mm]		1.0x0.5(15)<0402>
Rated Volt. [Vdc]		50(1H)
Capacitance	Tolerance	Part Number
9.7pF(9R7)	±0.5pF(D)	GRM1535C1H9R7DDD5D
9.8pF(9R8)	±0.5pF(D)	GRM1535C1H9R8DDD5D
9.9pF(9R9)	±0.5pF(D)	GRM1535C1H9R9DDD5D
10pF(100)	±5%(J)	GRM1535C1H100JDD5D
12pF(120)	±5%(J)	GRM1535C1H120JDD5D
15pF(150)	±5%(J)	GRM1535C1H150JDD5D
18pF(180)	±5%(J)	GRM1535C1H180JDD5D
22pF(220)	±5%(J)	GRM1535C1H220JDD5D
27pF(270)	±5%(J)	GRM1535C1H270JDD5D
33pF(330)	±5%(J)	GRM1535C1H330JDD5D
39pF(390)	±5%(J)	GRM1535C1H390JDD5D
47pF(470)	±5%(J)	GRM1535C1H470JDD5D
56pF(560)	±5%(J)	GRM1535C1H560JDD5D
68pF(680)	±5%(J)	GRM1535C1H680JDD5D
82pF(820)	±5%(J)	GRM1535C1H820JDD5D
100pF(101)	±5%(J)	GRM1535C1H101JDD5D
120pF(121)	±5%(J)	GRM1535C1H121JDD5D
150pF(151)	±5%(J)	GRM1535C1H151JDD5D
180pF(181)	±5%(J)	GRM1535C1H181JDD5D
220pF(221)	±5%(J)	GRM1535C1H221JDD5D
270pF(271)	±5%(J)	GRM1535C1H271JDD5D
330pF(331)	±5%(J)	GRM1535C1H331JDD5D
390pF(391)	±5%(J)	GRM1535C1H391JDD5D
470pF(471)	±5%(J)	GRM1535C1H471JDD5D
560pF(561)	±5%(J)	GRM1535C1H561JDD5D
680pF(681)	±5%(J)	GRM1535C1H681JDD5D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## Temperature Compensating Type C0G(5C) Characteristics-Low Profile

LxW [mm]		2.0x1.25(21)<0805>		3.2x1.6(31)<1206>	
Rated Volt. [Vdc]		100(2A)	50(1H)	100(2A)	50(1H)
Capacitance	Tolerance	Part Number			
100pF(101)	±5%(J)	GRM2165C2A101JA01D			
120pF(121)	±5%(J)	GRM2165C2A121JA01D			
150pF(151)	±5%(J)	GRM2165C2A151JA01D			
180pF(181)	±5%(J)	GRM2165C2A181JA01D			
220pF(221)	±5%(J)	GRM2165C2A221JA01D			
270pF(271)	±5%(J)	GRM2165C2A271JA01D			
330pF(331)	±5%(J)	GRM2165C2A331JA01D			
390pF(391)	±5%(J)	GRM2165C2A391JA01D			
470pF(471)	±5%(J)	GRM2165C2A471JA01D			
560pF(561)	±5%(J)	GRM2165C2A561JA01D			
680pF(681)	±5%(J)	GRM2165C2A681JA01D			
820pF(821)	±5%(J)	GRM2165C2A821JA01D			
1000pF(102)	±5%(J)	GRM2165C2A102JA01D			
1200pF(122)	±5%(J)	GRM2165C2A122JA01D	GRM2165C1H122JA01D		
1500pF(152)	±5%(J)	GRM2165C2A152JA01D	GRM2165C1H152JA01D		
1800pF(182)	±5%(J)	GRM2165C2A182JA01D	GRM2165C1H182JA01D	GRM3195C2A182JA01D	
2200pF(222)	±5%(J)	GRM2165C2A222JA01D	GRM2165C1H222JA01D	GRM3195C2A222JA01D	
2700pF(272)	±5%(J)	GRM2165C2A272JA01D	GRM2165C1H272JA01D	GRM3195C2A272JA01D	
3300pF(332)	±5%(J)	GRM2165C2A332JA01D	GRM2165C1H332JA01D	GRM3195C2A332JA01D	
3900pF(392)	±5%(J)		GRM2165C1H392JA01D	GRM3195C2A392JA01D	
4700pF(472)	±5%(J)		GRM2165C1H472JA01D	GRM3195C2A472JA01D	GRM3195C1H472JA01D
5600pF(562)	±5%(J)		GRM2195C1H562JA01D	GRM3195C2A562JA01D	GRM3195C1H562JA01D
6800pF(682)	±5%(J)		GRM2195C1H682JA01D	GRM3195C2A682JA01D	GRM3195C1H682JA01D
8200pF(822)	±5%(J)		GRM2195C1H822JA01D	GRM3195C2A822JA01D	GRM3195C1H822JA01D
10000pF(103)	±5%(J)		GRM2195C1H103JA01D	GRM3195C2A103JA01D	GRM3195C1H103JA01D
12000pF(123)	±5%(J)		GRM2195C1H123JA01D		GRM3195C1H123JA01D
15000pF(153)	±5%(J)		GRM2195C1H153JA01D		GRM3195C1H153JA01D
18000pF(183)	±5%(J)				GRM3195C1H183JA01D
22000pF(223)	±5%(J)				GRM3195C1H223JA01D
27000pF(273)	±5%(J)				GRM3195C1H273JA01D
33000pF(333)	±5%(J)				GRM3195C1H333JA01D
39000pF(393)	±5%(J)				GRM3195C1H393JA01D
47000pF(473)	±5%(J)				GRM31M5C1H473JA01L
56000pF(563)	±5%(J)				GRM31M5C1H563JA01L

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

(Part Number) **GR** **M** **21** **6** **5C** **2A** **101** **J** **A01** **D**    ① Product ID    ② Series    ③ Dimensions (LxW)    ④ Dimension (T)  
 ⑤ Temperature Characteristics    ⑥ Rated Voltage    ⑦ Capacitance  
 ⑧ Capacitance Tolerance    ⑨ Individual Specification Code    ⑩ Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

## Temperature Compensating Type U2J(7U) Characteristics

LxW [mm]		0.6x0.3(03)<0201>		1.0x0.5(15)<0402>	
Rated Volt. [Vdc]		50(1H)	25(1E)	50(1H)	10(1A)
Capacitance	Tolerance	Part Number			
1.0pF(1R0)	±0.25pF(C)	GRM0337U1H1R0CD01D		GRM1557U1H1R0CZ01D	
2.0pF(2R0)	±0.25pF(C)	GRM0337U1H2R0CD01D		GRM1557U1H2R0CZ01D	
3.0pF(3R0)	±0.25pF(C)	GRM0337U1H3R0CD01D		GRM1557U1H3R0CZ01D	
4.0pF(4R0)	±0.25pF(C)	GRM0337U1H4R0CD01D		GRM1557U1H4R0CZ01D	
5.0pF(5R0)	±0.25pF(C)	GRM0337U1H5R0CD01D		GRM1557U1H5R0CZ01D	
6.0pF(6R0)	±0.5pF(D)	GRM0337U1H6R0DD01D		GRM1557U1H6R0DZ01D	
7.0pF(7R0)	±0.5pF(D)	GRM0337U1H7R0DD01D		GRM1557U1H7R0DZ01D	
8.0pF(8R0)	±0.5pF(D)	GRM0337U1H8R0DD01D		GRM1557U1H8R0DZ01D	
9.0pF(9R0)	±0.5pF(D)	GRM0337U1H9R0DD01D		GRM1557U1H9R0DZ01D	
10pF(100)	±5%(J)	GRM0337U1H100JD01D		GRM1557U1H100JZ01D	
12pF(120)	±5%(J)	GRM0337U1H120JD01D		GRM1557U1H120JZ01D	
15pF(150)	±5%(J)	GRM0337U1H150JD01D		GRM1557U1H150JZ01D	
18pF(180)	±5%(J)		GRM0337U1E180JD01D	GRM1557U1H180JZ01D	
22pF(220)	±5%(J)		GRM0337U1E220JD01D	GRM1557U1H220JZ01D	
27pF(270)	±5%(J)		GRM0337U1E270JD01D	GRM1557U1H270JZ01D	
33pF(330)	±5%(J)		GRM0337U1E330JD01D	GRM1557U1H330JZ01D	
39pF(390)	±5%(J)		GRM0337U1E390JD01D	GRM1557U1H390JZ01D	
47pF(470)	±5%(J)		GRM0337U1E470JD01D	GRM1557U1H470JZ01D	
56pF(560)	±5%(J)		GRM0337U1E560JD01D	GRM1557U1H560JZ01D	
68pF(680)	±5%(J)		GRM0337U1E680JD01D	GRM1557U1H680JZ01D	
82pF(820)	±5%(J)		GRM0337U1E820JD01D	GRM1557U1H820JZ01D	
100pF(101)	±5%(J)		GRM0337U1E101JD01D	GRM1557U1H101JZ01D	
120pF(121)	±5%(J)			GRM1557U1H121JZ01D	
150pF(151)	±5%(J)			GRM1557U1H151JZ01D	
180pF(181)	±5%(J)			GRM1557U1H181JZ01D	
1200pF(122)	±5%(J)				GRM1557U1A122JA01D
1500pF(152)	±5%(J)				GRM1557U1A152JA01D
1800pF(182)	±5%(J)				GRM1557U1A182JA01D
2200pF(222)	±5%(J)				GRM1557U1A222JA01D
2700pF(272)	±5%(J)				GRM1557U1A272JA01D
3300pF(332)	±5%(J)				GRM1557U1A332JA01D
3900pF(392)	±5%(J)				GRM1557U1A392JA01D
4700pF(472)	±5%(J)				GRM1557U1A472JA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## Temperature Compensating Type U2J(7U) Characteristics

LxW [mm]		1.6x0.8(18)<0603>	
Rated Volt. [Vdc]		50(1H)	10(1A)
Capacitance	Tolerance	Part Number	
1000pF(102)	±5%(J)	GRM1887U1H102JA01D	
1200pF(122)	±5%(J)	GRM1887U1H122JA01D	
1500pF(152)	±5%(J)	GRM1887U1H152JA01D	
1800pF(182)	±5%(J)	GRM1887U1H182JA01D	
2200pF(222)	±5%(J)	GRM1887U1H222JA01D	
2700pF(272)	±5%(J)	GRM1887U1H272JA01D	
3300pF(332)	±5%(J)	GRM1887U1H332JA01D	
3900pF(392)	±5%(J)	GRM1887U1H392JA01D	
4700pF(472)	±5%(J)	GRM1887U1H472JA01D	
5600pF(562)	±5%(J)	GRM1887U1H562JA01D	
6800pF(682)	±5%(J)	GRM1887U1H682JA01D	
8200pF(822)	±5%(J)	GRM1887U1H822JA01D	
10000pF(103)	±5%(J)	GRM1887U1H103JA01D	
12000pF(123)	±5%(J)		GRM1887U1A123JA01D
15000pF(153)	±5%(J)		GRM1887U1A153JA01D
18000pF(183)	±5%(J)		GRM1887U1A183JA01D
22000pF(223)	±5%(J)		GRM1887U1A223JA01D

LxW [mm]		2.0x1.25(21)<0805>		3.2x1.6(31)<1206>	
Rated Volt. [Vdc]		50(1H)	10(1A)	50(1H)	
Capacitance	Tolerance	Part Number			
10000pF(103)	±5%(J)	GRM2167U1H103JA01D			
12000pF(123)	±5%(J)	GRM2167U1H123JA01D			
15000pF(153)	±5%(J)	GRM2167U1H153JA01D			
18000pF(183)	±5%(J)	GRM2167U1H183JA01D			
22000pF(223)	±5%(J)	GRM2197U1H223JA01D			
27000pF(273)	±5%(J)	GRM2197U1H273JA01D			
33000pF(333)	±5%(J)	GRM21A7U1H333JA39L			
39000pF(393)	±5%(J)	GRM21B7U1H393JA01L			
47000pF(473)	±5%(J)	GRM21B7U1H473JA01L			
56000pF(563)	±5%(J)		GRM2197U1A563JA01D		GRM3197U1H563JA01D
68000pF(683)	±5%(J)		GRM21B7U1A683JA01L		GRM31M7U1H683JA01L
82000pF(823)	±5%(J)		GRM21B7U1A823JA01L		GRM31M7U1H823JA01L
100000pF(104)	±5%(J)		GRM21B7U1A104JA01L		GRM31M7U1H104JA01L

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

- (Part Number) **GR** **M** **18** **8** **7U** **1H** **102** **J** **A01** **D**
- ① Product ID
  - ② Series
  - ③ Dimensions (LxW)
  - ④ Dimension (T)
  - ⑤ Temperature Characteristics
  - ⑥ Rated Voltage
  - ⑦ Capacitance
  - ⑧ Capacitance Tolerance
  - ⑨ Individual Specification Code
  - ⑩ Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

For General GRM Series  
Array GNM Series  
Low ESL LL Series  
High-Q GJM Series  
High Frequency GOM Series  
Monolithic Microchip GMA Series  
For Bonding GMD Series  
Product Information

## Temperature Compensating Type U2J(7U) Characteristics-Low Profile

LxW [mm]		1.6x0.8(18)<0603>	
Rated Volt. [Vdc]		50(1H)	10(1A)
Capacitance	Tolerance	Part Number	
2200pF(222)	±5%(J)	GRM1857U1H222JA44D	
2700pF(272)	±5%(J)	GRM1857U1H272JA44D	
3300pF(332)	±5%(J)	GRM1857U1H332JA44D	
3900pF(392)	±5%(J)	GRM1857U1H392JA44D	
4700pF(472)	±5%(J)	GRM1857U1H472JA44D	
5600pF(562)	±5%(J)	GRM1857U1A562JA44D	
6800pF(682)	±5%(J)	GRM1857U1A682JA44D	
8200pF(822)	±5%(J)	GRM1857U1A822JA44D	
10000pF(103)	±5%(J)	GRM1857U1A103JA44D	

LxW [mm]		2.0x1.25(21)<0805>		3.2x1.6(31)<1206>
Rated Volt. [Vdc]		50(1H)	10(1A)	50(1H)
Capacitance	Tolerance	Part Number		
10000pF(103)	±5%(J)	GRM2167U1H103JA01D		
12000pF(123)	±5%(J)	GRM2167U1H123JA01D		
15000pF(153)	±5%(J)	GRM2167U1H153JA01D		
18000pF(183)	±5%(J)	GRM2167U1H183JA01D		
22000pF(223)	±5%(J)	GRM2197U1H223JA01D		
27000pF(273)	±5%(J)	GRM2197U1H273JA01D		
33000pF(333)	±5%(J)	GRM21A7U1H333JA39L		
56000pF(563)	±5%(J)	GRM2197U1A563JA01D		GRM3197U1H563JA01D
68000pF(683)	±5%(J)			GRM31M7U1H683JA01L
82000pF(823)	±5%(J)			GRM31M7U1H823JA01L
100000pF(104)	±5%(J)			GRM31M7U1H104JA01L

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## Temperature Compensating Type P2H(6P), R2H(6R) Characteristics

TC		P2H	R2H	
LxW [mm]		1.0x0.5(15)<0402>	0.6x0.3(03)<0201>	1.0x0.5(15)<0402>
Rated Volt. [Vdc]		50(1H)	25(1E)	50(1H)
Capacitance	Tolerance	Part Number		
1.0pF(1R0)	±0.25pF(C)	GRM1556P1H1R0CZ01D	GRM0336R1E1R0CD01D	GRM1556R1H1R0CD01D
2.0pF(2R0)	±0.25pF(C)	GRM1556P1H2R0CZ01D	GRM0336R1E2R0CD01D	GRM1556R1H2R0CZ01D
3.0pF(3R0)	±0.25pF(C)	GRM1556P1H3R0CZ01D	GRM0336R1E3R0CD01D	GRM1556R1H3R0CZ01D
4.0pF(4R0)	±0.25pF(C)	GRM1556P1H4R0CZ01D	GRM0336R1E4R0CD01D	GRM1556R1H4R0CZ01D
5.0pF(5R0)	±0.25pF(C)	GRM1556P1H5R0CZ01D	GRM0336R1E5R0CD01D	GRM1556R1H5R0CZ01D
6.0pF(6R0)	±0.5pF(D)	GRM1556P1H6R0DZ01D	GRM0336R1E6R0DD01D	GRM1556R1H6R0DZ01D
7.0pF(7R0)	±0.5pF(D)	GRM1556P1H7R0DZ01D	GRM0336R1E7R0DD01D	GRM1556R1H7R0DZ01D
8.0pF(8R0)	±0.5pF(D)	GRM1556P1H8R0DZ01D	GRM0336R1E8R0DD01D	GRM1556R1H8R0DZ01D
9.0pF(9R0)	±0.5pF(D)	GRM1556P1H9R0DZ01D	GRM0336R1E9R0DD01D	GRM1556R1H9R0DZ01D
10pF(100)	±5%(J)	GRM1556P1H100JZ01D	GRM0336R1E100JD01D	GRM1556R1H100JZ01D
12pF(120)	±5%(J)	GRM1556P1H120JZ01D	GRM0336R1E120JD01D	GRM1556R1H120JZ01D
15pF(150)	±5%(J)	GRM1556P1H150JZ01D	GRM0336R1E150JD01D	GRM1556R1H150JZ01D
18pF(180)	±5%(J)	GRM1556P1H180JZ01D	GRM0336R1E180JD01D	GRM1556R1H180JZ01D
22pF(220)	±5%(J)	GRM1556P1H220JZ01D	GRM0336R1E220JD01D	GRM1556R1H220JZ01D
27pF(270)	±5%(J)	GRM1556P1H270JZ01D	GRM0336R1E270JD01D	GRM1556R1H270JZ01D
33pF(330)	±5%(J)		GRM0336R1E330JD01D	GRM1556R1H330JZ01D
39pF(390)	±5%(J)		GRM0336R1E390JD01D	
47pF(470)	±5%(J)		GRM0336R1E470JD01D	
56pF(560)	±5%(J)		GRM0336R1E560JD01D	
68pF(680)	±5%(J)		GRM0336R1E680JD01D	
82pF(820)	±5%(J)		GRM0336R1E820JD01D	
100pF(101)	±5%(J)		GRM0336R1E101JD01D	

The part number code is shown in ( ) and Unit is shown in [ ]. <>: EIA [inch] Code

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

(Part Number) **GR** **M** **15** **5** **6P** **1H** **1R0** **C** **Z01** **D**  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- ① Product ID
- ② Series
- ③ Dimensions (LxW)
- ④ Dimension (T)
- ⑤ Temperature Characteristics
- ⑥ Rated Voltage
- ⑦ Capacitance
- ⑧ Capacitance Tolerance
- ⑨ Individual Specification Code
- ⑩ Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

## Temperature Compensating Type S2H(6S), T2H(6T) Characteristics

TC		S2H		T2H	
LxW [mm]		0.6x0.3(03)<0201>	1.0x0.5(15)<0402>	0.6x0.3(03)<0201>	1.0x0.5(15)<0402>
Rated Volt. [Vdc]		25(1E)	50(1H)	25(1E)	50(1H)
Capacitance	Tolerance	Part Number			
1.0pF(1R0)	±0.25pF(C)	GRM0336S1E1R0CD01D	GRM1556S1H1R0CD01D	GRM0336T1E1R0CD01D	GRM1556T1H1R0CD01D
2.0pF(2R0)	±0.25pF(C)	GRM0336S1E2R0CD01D	GRM1556S1H2R0CZ01D	GRM0336T1E2R0CD01D	GRM1556T1H2R0CD01D
3.0pF(3R0)	±0.25pF(C)	GRM0336S1E3R0CD01D	GRM1556S1H3R0CZ01D	GRM0336T1E3R0CD01D	GRM1556T1H3R0CD01D
4.0pF(4R0)	±0.25pF(C)	GRM0336S1E4R0CD01D	GRM1556S1H4R0CZ01D	GRM0336T1E4R0CD01D	GRM1556T1H4R0CD01D
5.0pF(5R0)	±0.25pF(C)	GRM0336S1E5R0CD01D	GRM1556S1H5R0CZ01D	GRM0336T1E5R0CD01D	GRM1556T1H5R0CD01D
6.0pF(6R0)	±0.5pF(D)	GRM0336S1E6R0DD01D	GRM1556S1H6R0DZ01D	GRM0336T1E6R0DD01D	GRM1556T1H6R0DD01D
7.0pF(7R0)	±0.5pF(D)	GRM0336S1E7R0DD01D	GRM1556S1H7R0DZ01D	GRM0336T1E7R0DD01D	GRM1556T1H7R0DD01D
8.0pF(8R0)	±0.5pF(D)	GRM0336S1E8R0DD01D	GRM1556S1H8R0DZ01D	GRM0336T1E8R0DD01D	GRM1556T1H8R0DD01D
9.0pF(9R0)	±0.5pF(D)	GRM0336S1E9R0DD01D	GRM1556S1H9R0DZ01D	GRM0336T1E9R0DD01D	GRM1556T1H9R0DD01D
10pF(100)	±5%(J)	GRM0336S1E100JD01D	GRM1556S1H100JZ01D	GRM0336T1E100JD01D	GRM1556T1H100JD01D
12pF(120)	±5%(J)	GRM0336S1E120JD01D	GRM1556S1H120JZ01D	GRM0336T1E120JD01D	GRM1556T1H120JD01D
15pF(150)	±5%(J)	GRM0336S1E150JD01D	GRM1556S1H150JZ01D	GRM0336T1E150JD01D	GRM1556T1H150JD01D
18pF(180)	±5%(J)	GRM0336S1E180JD01D	GRM1556S1H180JZ01D	GRM0336T1E180JD01D	GRM1556T1H180JD01D
22pF(220)	±5%(J)	GRM0336S1E220JD01D	GRM1556S1H220JZ01D	GRM0336T1E220JD01D	GRM1556T1H220JD01D
27pF(270)	±5%(J)	GRM0336S1E270JD01D	GRM1556S1H270JZ01D	GRM0336T1E270JD01D	GRM1556T1H270JD01D
33pF(330)	±5%(J)	GRM0336S1E330JD01D	GRM1556S1H330JZ01D	GRM0336T1E330JD01D	GRM1556T1H330JD01D
39pF(390)	±5%(J)	GRM0336S1E390JD01D	GRM1556S1H390JZ01D	GRM0336T1E390JD01D	GRM1556T1H390JD01D
47pF(470)	±5%(J)	GRM0336S1E470JD01D		GRM0336T1E470JD01D	GRM1556T1H470JD01D
56pF(560)	±5%(J)	GRM0336S1E560JD01D		GRM0336T1E560JD01D	GRM1556T1H560JD01D
68pF(680)	±5%(J)	GRM0336S1E680JD01D		GRM0336T1E680JD01D	GRM1556T1H680JD01D
82pF(820)	±5%(J)	GRM0336S1E820JD01D		GRM0336T1E820JD01D	GRM1556T1H820JD01D
100pF(101)	±5%(J)	GRM0336S1E101JD01D		GRM0336T1E101JD01D	GRM1556T1H101JD01D

The part number code is shown in ( ) and Unit is shown in [ ]. <>: EIA [inch] Code

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## High Dielectric Constant Type X7R(R7) Characteristics

LxW [mm]		0.4x0.2(02)<01005>
Rated Volt. [Vdc]		10(1A)
Capacitance	Tolerance	Part Number
68pF(680)	±10%(K)	GRM022R71A680KA01L
100pF(101)	±10%(K)	GRM022R71A101KA01L
150pF(151)	±10%(K)	GRM022R71A151KA01L
220pF(221)	±10%(K)	GRM022R71A221KA01L
330pF(331)	±10%(K)	GRM022R71A331KA01L
470pF(471)	±10%(K)	GRM022R71A471KA01L

LxW [mm]		0.6x0.3(03)<0201>			
Rated Volt. [Vdc]		25(1E)	16(1C)	10(1A)	6.3(0J)
Capacitance	Tolerance	Part Number			
100pF(101)	±10%(K)	GRM033R71E101KA01D	GRM033R71C101KA01D		
150pF(151)	±10%(K)	GRM033R71E151KA01D	GRM033R71C151KA01D		
220pF(221)	±10%(K)	GRM033R71E221KA01D	GRM033R71C221KA01D		
330pF(331)	±10%(K)	GRM033R71E331KA01D	GRM033R71C331KA01D		
470pF(471)	±10%(K)	GRM033R71E471KA01D	GRM033R71C471KA01D		
680pF(681)	±10%(K)	GRM033R71E681KA01D	GRM033R71C681KA01D		
1000pF(102)	±10%(K)	GRM033R71E102KA01D	GRM033R71C102KA01D		
1500pF(152)	±10%(K)	GRM033R71E152KA01D	GRM033R71C152KA01D		
2200pF(222)	±10%(K)		GRM033R71C222KA88D	GRM033R71A222KA01D	
3300pF(332)	±10%(K)		GRM033R71C332KA88D	GRM033R71A332KA01D	
4700pF(472)	±10%(K)			GRM033R71A472KA01D	GRM033R70J472KA01D
6800pF(682)	±10%(K)			GRM033R71A682KA01D	GRM033R70J682KA01D
10000pF(103)	±10%(K)			GRM033R71A103KA01D	GRM033R70J103KA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

(Part Number) **GR** **M** **02** **2** **R7** **1A** **680** **K** **A01** **L**

- ① Product ID
- ② Series
- ③ Dimensions (LxW)
- ④ Dimension (T)
- ⑤ Temperature Characteristics
- ⑥ Rated Voltage
- ⑦ Capacitance
- ⑧ Capacitance Tolerance
- ⑨ Individual Specification Code
- ⑩ Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.



## High Dielectric Constant Type X7R(R) Characteristics

LxW [mm]		1.0x0.5(15)<0402>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
220pF(221)	±10%(K)	GRM155R72A221KA01D	GRM155R71H221KA01D		
330pF(331)	±10%(K)	GRM155R72A331KA01D	GRM155R71H331KA01D		
470pF(471)	±10%(K)	GRM155R72A471KA01D	GRM155R71H471KA01D		
680pF(681)	±10%(K)	GRM155R72A681KA01D	GRM155R71H681KA01D		
1000pF(102)	±10%(K)	GRM155R72A102KA01D	GRM155R71H102KA01D		
1500pF(152)	±10%(K)	GRM155R72A152KA01D	GRM155R71H152KA01D		
2200pF(222)	±10%(K)	GRM155R72A222KA01D	GRM155R71H222KA01D		
3300pF(332)	±10%(K)	GRM155R72A332KA01D	GRM155R71H332KA01D		
4700pF(472)	±10%(K)	GRM155R72A472KA01D	GRM155R71H472KA01D	GRM155R71E472KA01D	
6800pF(682)	±10%(K)		GRM155R71H682KA88D	GRM155R71E682KA01D	
10000pF(103)	±10%(K)		GRM155R71H103KA88D	GRM155R71E103KA01D	
15000pF(153)	±10%(K)		GRM155R71H153KA12D	GRM155R71E153KA61D	GRM155R71C153KA01D
22000pF(223)	±10%(K)		GRM155R71H223KA12D	GRM155R71E223KA61D	GRM155R71C223KA01D
33000pF(333)	±10%(K)			GRM155R71E333KA88D	GRM155R71C333KA01D
47000pF(473)	±10%(K)			GRM155R71E473KA88D	GRM155R71C473KA01D
68000pF(683)	±10%(K)				GRM155R71C683KA88D
0.10μF(104)	±10%(K)				GRM155R71C104KA88D
0.15μF(154)	±10%(K)				GRM155R71C154KA12D*
0.22μF(224)	±10%(K)				GRM155R71C224KA12D*

LxW [mm]		1.0x0.5(15)<0402>
Rated Volt. [Vdc]		10(1A)
Capacitance	Tolerance	Part Number
68000pF(683)	±10%(K)	GRM155R71A683KA01D
0.10μF(104)	±10%(K)	GRM155R71A104KA01D

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code  
 \* Please refer to GRM Series Specifications and Test Method (2).

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## High Dielectric Constant Type X7R(R7)/X7S(C7) Characteristics

LxW [mm]		1.6x0.8(18)<0603>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
220pF(221)	±10%(K)	GRM188R72A221KA01D	GRM188R71H221KA01D		
330pF(331)	±10%(K)	GRM188R72A331KA01D	GRM188R71H331KA01D		
470pF(471)	±10%(K)	GRM188R72A471KA01D	GRM188R71H471KA01D		
680pF(681)	±10%(K)	GRM188R72A681KA01D	GRM188R71H681KA01D		
1000pF(102)	±10%(K)	GRM188R72A102KA01D	GRM188R71H102KA01D		
1500pF(152)	±10%(K)	GRM188R72A152KA01D	GRM188R71H152KA01D		
2200pF(222)	±10%(K)	GRM188R72A222KA01D	GRM188R71H222KA01D	GRM188R71E222KA01D	
3300pF(332)	±10%(K)	GRM188R72A332KA01D	GRM188R71H332KA01D	GRM188R71E332KA01D	
4700pF(472)	±10%(K)	GRM188R72A472KA01D	GRM188R71H472KA01D	GRM188R71E472KA01D	
6800pF(682)	±10%(K)	GRM188R72A682KA01D	GRM188R71H682KA01D	GRM188R71E682KA01D	
10000pF(103)	±10%(K)	GRM188R72A103KA01D	GRM188R71H103KA01D	GRM188R71E103KA01D	
15000pF(153)	±10%(K)		GRM188R71H153KA01D	GRM188R71E153KA01D	
22000pF(223)	±10%(K)		GRM188R71H223KA01D	GRM188R71E223KA01D	
33000pF(333)	±10%(K)		GRM188R71H333KA61D	GRM188R71E333KA01D	
47000pF(473)	±10%(K)		GRM188R71H473KA61D	GRM188R71E473KA01D	
68000pF(683)	±10%(K)		GRM188R71H683KA93D	GRM188R71E683KA01D	
0.10μF(104)	±10%(K)	GRM188R72A104KA35D	GRM188R71H104KA93D	GRM188R71E104KA01D	
0.15μF(154)	±10%(K)			GRM188R71E154KA01D	GRM188R71C154KA01D
0.22μF(224)	±10%(K)			GRM188R71E224KA88D	GRM188R71C224KA01D
0.33μF(334)	±10%(K)				GRM188R71C334KA01D
0.47μF(474)	±10%(K)			GRM188R71E474KA12D*	GRM188R71C474KA88D
0.68μF(684)	±10%(K)				GRM188C71C684KA12D*
1.0μF(105)	±10%(K)			GRM188R71E105KA12D*	GRM188R71C105KA12D*

LxW [mm]		1.6x0.8(18)<0603>		
Rated Volt. [Vdc]		10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number		
0.33μF(334)	±10%(K)	GRM188R71A334KA61D		
0.47μF(474)	±10%(K)	GRM188R71A474KA61D		
0.68μF(684)	±10%(K)	GRM188R71A684KA61D		
1.0μF(105)	±10%(K)	GRM188R71A105KA61D*		
2.2μF(225)	±10%(K)	GRM188R71A225KE15D*	GRM188C70J225KE20D*	GRM188C70G225KE20D*

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

\* Please refer to GRM Series Specifications and Test Method (2).

(Part Number) **GR** **M** **18** **8** **R7** **2A** **221** **K** **A01** **D**  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- ① Product ID
- ② Series
- ③ Dimensions (LxW)
- ④ Dimension (T)
- ⑤ Temperature Characteristics
- ⑥ Rated Voltage
- ⑦ Capacitance
- ⑧ Capacitance Tolerance
- ⑨ Individual Specification Code
- ⑩ Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

## High Dielectric Constant Type X7R(R7)/X7U(E7) Characteristics

LxW [mm]		2.0x1.25(21)<0805>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
6800pF(682)	±10%(K)	GRM219R72A682KA01D			
10000pF(103)	±10%(K)	GRM21BR72A103KA01L			
15000pF(153)	±10%(K)	GRM21BR72A153KA01L			
22000pF(223)	±10%(K)	GRM21BR72A223KA01L			
33000pF(333)	±10%(K)	GRM21BR72A333KA01L	GRM219R71H333KA01D		
47000pF(473)	±10%(K)	GRM21BR72A473KA01L	GRM21BR71H473KA01L		
68000pF(683)	±10%(K)		GRM21BR71H683KA01L	GRM219R71E683KA01D	
0.10μF(104)	±10%(K)		GRM21BR71H104KA01L	GRM21BR71E104KA01L	
0.15μF(154)	±10%(K)		GRM21BR71H154KA01L	GRM21BR71E154KA01L	
0.22μF(224)	±10%(K)	GRM21AR72A224KAC5L	GRM21BR71H224KA01L	GRM21BR71E224KA01L	
0.33μF(334)	±10%(K)	GRM21AR72A334KAC5L	GRM219R71H334KA88D	GRM21BR71E334KA01L	
0.47μF(474)	±10%(K)	GRM21BR72A474KA73L	GRM21BR71H474KA88L	GRM219R71E474KA88D	
0.68μF(684)	±10%(K)			GRM219R71E684KA88D	GRM219R71C684KA01D
1.0μF(105)	±10%(K)		GRM21BR71H105KA12L	GRM21BR71E105KA99L	GRM21BR71C105KA01L
				GRM219R71E105KA88D	
2.2μF(225)	±10%(K)			GRM21BR71E225KA73L*	GRM21BR71C225KA12L
4.7μF(475)	±10%(K)				GRM21BR71C475KA73L*

LxW [mm]		2.0x1.25(21)<0805>		
Rated Volt. [Vdc]		10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number		
2.2μF(225)	±10%(K)	GRM21BR71A225KA01L		
4.7μF(475)	±10%(K)	GRM21BR71A475KA73L*		
10μF(106)	±10%(K)	GRM21BR71A106KE51L*	GRM21BR70J106KE76L*	
22μF(226)	±20%(M)			GRM21BE70G226ME51L*

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

\* Please refer to GRM Series Specifications and Test Method (2).

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## High Dielectric Constant Type X7R(R7)/X7U(E7) Characteristics

LxW [mm]		3.2x1.6(31)<1206>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
15000pF(153)	±10%(K)	GRM319R72A153KA01L			
22000pF(223)	±10%(K)	GRM31MR72A223KA01L			
33000pF(333)	±10%(K)	GRM31MR72A333KA01L			
47000pF(473)	±10%(K)	GRM31MR72A473KA01L			
68000pF(683)	±10%(K)	GRM31MR72A683KA01L			
0.10μF(104)	±10%(K)	GRM319R72A104KA01D			
0.15μF(154)	±10%(K)	GRM31MR72A154KA01L	GRM31MR71H154KA01L		
0.22μF(224)	±10%(K)	GRM31MR72A224KA01L	GRM31MR71H224KA01L		
0.33μF(334)	±10%(K)		GRM319R71H334KA01D	GRM319R71E334KA01D	
0.47μF(474)	±10%(K)	GRM31MR72A474KA35L	GRM31MR71H474KA01L	GRM319R71E474KA01D	
0.68μF(684)	±10%(K)	GRM31MR72A684KA35L	GRM31MR71H684KA88L	GRM319R71E684KA01D	
1.0μF(105)	±10%(K)	GRM31CR72A105KA01L	GRM31MR71H105KA88L		
2.2μF(225)	±10%(K)		GRM31CR71H225KA88L	GRM31MR71E225KA93L	GRM31MR71C225KA35L
4.7μF(475)	±10%(K)		GRM31CR71H475KA12L	GRM31CR71E475KA88L	GRM31CR71C475KA01L
10μF(106)	±10%(K)			GRM31CR71E106KA12L*	GRM31CR71C106KAC7L*

LxW [mm]		3.2x1.6(31)<1206>		
Rated Volt. [Vdc]		10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number		
10μF(106)	±10%(K)	GRM31CR71A106KA01L		
22μF(226)	±20%(M)	GRM31CR71A226ME15L*	GRM31CR70J226ME19L*	
47μF(476)	±20%(M)			GRM31CE70G476ME15L*

LxW [mm]		3.2x2.5(32)<1210>			
Rated Volt. [Vdc]		100(2A)	50(1H)	35(YA)	25(1E)
Capacitance	Tolerance	Part Number			
0.68μF(684)	±10%(K)	GRM32CR72A684KA01L			
1.0μF(105)	±10%(K)	GRM32CR72A105KA35L			
2.2μF(225)	±10%(K)	GRM32ER72A225KA35L			
4.7μF(475)	±10%(K)		GRM32ER71H475KA88L		
10μF(106)	±10%(K)			GRM32ER7YA106KA12L	GRM32DR71E106KA12L
22μF(226)	±20%(M)				GRM32ER71E226ME15L*

LxW [mm]		3.2x2.5(32)<1210>			
Rated Volt. [Vdc]		16(1C)	10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number			
22μF(226)	±20%(M)	GRM32ER71C226MEA8L*	GRM32ER71A226ME20L*		
47μF(476)	±20%(M)		GRM32ER71A476ME15L*	GRM32ER70J476ME20L*	
100μF(107)	±20%(M)				GRM32EE70G107ME19L*

The part number code is shown in ( ) and Unit is shown in [ ]. <>: EIA [inch] Code

\* Please refer to GRM Series Specifications and Test Method (2).

(Part Number) **GR** **M** **31** **9** **R7** **2A** **153** **K** **A01** **L**    ① Product ID    ② Series    ③ Dimensions (LxW)    ④ Dimension (T)  
 ⑤ Temperature Characteristics    ⑥ Rated Voltage    ⑦ Capacitance  
 ⑧ Capacitance Tolerance    ⑨ Individual Specification Code    ⑩ Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

## High Dielectric Constant Type X7R(R7)/X7T(D7) Characteristics-Low Profile

LxW [mm]		1.0x0.5(15)<0402>			1.6x0.8(18)<0603>
Rated Volt. [Vdc]		50(1H)	25(1E)	16(1C)	10(1A)
Capacitance	Tolerance	Part Number			
220pF(221)	±10%(K)	GRM15XR71H221KA86D			
330pF(331)	±10%(K)	GRM15XR71H331KA86D			
470pF(471)	±10%(K)	GRM15XR71H471KA86D			
680pF(681)	±10%(K)	GRM15XR71H681KA86D			
1000pF(102)	±10%(K)	GRM15XR71H102KA86D			
1500pF(152)	±10%(K)	GRM15XR71H152KA86D			
2200pF(222)	±10%(K)		GRM15XR71E222KA86D		
3300pF(332)	±10%(K)			GRM15XR71C332KA86D	
4700pF(472)	±10%(K)			GRM15XR71C472KA86D	
6800pF(682)	±10%(K)			GRM15XR71C682KA86D	
10000pF(103)	±10%(K)			GRM15XR71C103KA86D	
1.0μF(105)	±10%(K)				GRM185D71A105KE36D*

LxW [mm]		2.0x1.25(21)<0805>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
6800pF(682)	±10%(K)	GRM219R72A682KA01D			
33000pF(333)	±10%(K)		GRM219R71H333KA01D		
68000pF(683)	±10%(K)			GRM219R71E683KA01D	
0.22μF(224)	±10%(K)	GRM21AR72A224KAC5L			
0.33μF(334)	±10%(K)	GRM21AR72A334KAC5L	GRM219R71H334KA88D		
0.47μF(474)	±10%(K)			GRM219R71E474KA88D	
0.68μF(684)	±10%(K)			GRM219R71E684KA88D	GRM219R71C684KA01D
1.0μF(105)	±10%(K)			GRM219R71E105KA88D	

LxW [mm]		3.2x1.6(31)<1206>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
15000pF(153)	±10%(K)	GRM319R72A153KA01L			
22000pF(223)	±10%(K)	GRM31MR72A223KA01L			
33000pF(333)	±10%(K)	GRM31MR72A333KA01L			
47000pF(473)	±10%(K)	GRM31MR72A473KA01L			
68000pF(683)	±10%(K)	GRM31MR72A683KA01L			
0.10μF(104)	±10%(K)	GRM319R72A104KA01D			
0.15μF(154)	±10%(K)	GRM31MR72A154KA01L	GRM31MR71H154KA01L		
0.22μF(224)	±10%(K)	GRM31MR72A224KA01L	GRM31MR71H224KA01L		
0.33μF(334)	±10%(K)		GRM319R71H334KA01D		
0.47μF(474)	±10%(K)	GRM31MR72A474KA35L	GRM31MR71H474KA01L		
0.68μF(684)	±10%(K)	GRM31MR72A684KA35L	GRM31MR71H684KA88L		
1.0μF(105)	±10%(K)		GRM31MR71H105KA88L		
2.2μF(225)	±10%(K)			GRM31MR71E225KA93L	GRM31MR71C225KA35L
4.7μF(475)	±10%(K)				GRM319D71C475KA12D**

LxW [mm]		3.2x2.5(32)<1210>	
Rated Volt. [Vdc]		100(2A)	50(1H)
Capacitance	Tolerance	Part Number	
0.68μF(684)	±10%(K)	GRM32CR72A684KA01L	GRM32NR71H684KA01L
1.0μF(105)	±10%(K)	GRM32CR72A105KA35L	

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

\* Please refer to GRM Series Specifications and Test Method (2).

\*\* These Part Numbers have individual testing conditions on Durability of GRM Series Specifications and Test Methods (2). Please refer to P60.

For General  
GRM Series

Array  
GNM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## High Dielectric Constant Type X6S(C8) Characteristics

LxW [mm]		0.6x0.3(03)<0201>	
Rated Volt. [Vdc]		6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number	
15000pF(153)	±10%(K)	GRM033C80J153KE01D*	GRM033C80G153KE01D*
22000pF(223)	±10%(K)	GRM033C80J223KE01D*	GRM033C80G223KE01D*
33000pF(333)	±10%(K)	GRM033C80J333KE01D*	GRM033C80G333KE01D*
47000pF(473)	±10%(K)	GRM033C80J473KE19D*	GRM033C80G473KE01D*

LxW [mm]		1.0x0.5(15)<0402>		
Rated Volt. [Vdc]		25(1E)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number		
68000pF(683)	±10%(K)	GRM155C81E683KA12D		
0.10μF(104)	±10%(K)	GRM155C81E104KA12D		
0.15μF(154)	±10%(K)		GRM155C80J154KE01D*	GRM155C80G154KE01D*
0.22μF(224)	±10%(K)		GRM155C80J224KE01D*	GRM155C80G224KE01D*
0.33μF(334)	±10%(K)		GRM155C80J334KE01D*	GRM155C80G334KE01D*
0.47μF(474)	±10%(K)		GRM155C80J474KE19D*	GRM155C80G474KE01D*
0.68μF(684)	±10%(K)		GRM155C80J684KE15D**	GRM155C80G684KE19D*

LxW [mm]		1.6x0.8(18)<0603>			
Rated Volt. [Vdc]		25(1E)	10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number			
1.0μF(105)	±10%(K)	GRM188C81E105KAADD			
2.2μF(225)	±10%(K)		GRM188C81A225KE34D*	GRM188C80J225KE19D*	
4.7μF(475)	±10%(K)				GRM188C80G475KE19D*
10μF(106)	±20%(M)				GRM188C80G106ME47D**

LxW [mm]		1.6x0.8(18)<0603>	
Rated Volt. [Vdc]		2.5(0E)	
Capacitance	Tolerance	Part Number	
10μF(106)	±20%(M)	GRM188C80E106ME47D*	

LxW [mm]		2.0x1.25(21)<0805>			
Rated Volt. [Vdc]		25(1E)	16(1C)	10(1A)	6.3(0J)
Capacitance	Tolerance	Part Number			
1.0μF(105)	±10%(K)		GRM216C81C105KA12D*		
2.2μF(225)	±10%(K)		GRM219C81C225KA12D*		
4.7μF(475)	±10%(K)	GRM21BC81E475KA12L*	GRM21BC81C475KA88L*	GRM219C81A475KE34D*	GRM219C80J475KE19D*
10μF(106)	±10%(K)			GRM21BC81A106KE18L*	GRM21BC80J106KE19L*
					GRM219C80J106KE39D*
22μF(226)	±20%(M)				GRM21BC80J226ME51L**

LxW [mm]		2.0x1.25(21)<0805>	
Rated Volt. [Vdc]		4(0G)	
Capacitance	Tolerance	Part Number	
22μF(226)	±20%(M)	GRM21BC80G226ME39L*	

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

\* Please refer to GRM Series Specifications and Test Method (2).

# These Part Numbers have individual testing conditions on Durability of GRM Series Specifications and Test Methods (2). Please refer to P60.

(Part Number) **GR** **M** **03** **3** **C8** **0J** **153** **K** **E01** **D**    ①Product ID    ②Series    ③Dimensions (LxW)    ④Dimension (T)  
 ⑤Temperature Characteristics    ⑥Rated Voltage    ⑦Capacitance  
 ⑧Capacitance Tolerance    ⑨Individual Specification Code    ⑩Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

## High Dielectric Constant Type X6S(C8)/X6T(D8) Characteristics

LxW [mm]		3.2x1.6(31)<1206>			
Rated Volt. [Vdc]		25(1E)	16(1C)	10(1A)	6.3(0J)
Capacitance	Tolerance	Part Number			
2.2μF(225)	±10%(K)		GRM316C81C225KA12D*		
4.7μF(475)	±10%(K)		GRM319C81C475KA12D*		
10μF(106)	±10%(K)	GRM31CC81E106KE15L*	GRM31MC81C106KA12L	GRM319C81A106KA12D	GRM319C80J106KE19D*
22μF(226)	±20%(M)			GRM31CC81A226ME19L*	GRM31CC80J226ME19L*
47μF(476)	±20%(M)				GRM31CC80J476ME18L*

LxW [mm]		3.2x1.6(31)<1206>	
Rated Volt. [Vdc]		4(0G)	
Capacitance	Tolerance	Part Number	
47μF(476)	±20%(M)	GRM31CC80G476ME19L*	
100μF(107)	±20%(M)	GRM31CD80G107ME39L*	

LxW [mm]		3.2x2.5(32)<1210>			
Rated Volt. [Vdc]		25(1E)	10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number			
10μF(106)	±10%(K)	GRM32DC81E106KA12L			
22μF(226)	±20%(M)	GRM32EC81E226ME15L*	GRM32NC81A226ME19L*		
47μF(476)	±20%(M)		GRM32EC81A476ME19L*	GRM32EC80J476ME64L*	
100μF(107)	±20%(M)			GRM32EC80J107ME20L*	GRM32EC80G107ME20L*

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

\*: Please refer to GRM Series Specifications and Test Method(2).

## High Dielectric Constant Type X6S(C8) Characteristics-Low Profile

LxW [mm]		1.6x0.8(18)<0603>	
Rated Volt. [Vdc]		10(1A)	6.3(0J)
Capacitance	Tolerance	Part Number	
1.0μF(105)	±10%(K)	GRM185C81A105KE36D*	GRM185C80J105KE26D*

LxW [mm]		2.0x1.25(21)<0805>		
Rated Volt. [Vdc]		16(1C)	10(1A)	6.3(0J)
Capacitance	Tolerance	Part Number		
1.0μF(105)	±10%(K)	GRM216C81C105KA12D*		
2.2μF(225)	±10%(K)	GRM219C81C225KA12D*		
4.7μF(475)	±10%(K)		GRM219C81A475KE34D*	GRM219C80J475KE19D*
10μF(106)	±10%(K)			GRM219C80J106KE39D*

LxW [mm]		3.2x1.6(31)<1206>	
Rated Volt. [Vdc]		16(1C)	
Capacitance	Tolerance	Part Number	
2.2μF(225)	±10%(K)	GRM316C81C225KA12D*	
4.7μF(475)	±10%(K)	GRM319C81C475KA12D*	

LxW [mm]		3.2x2.5(32)<1210>	
Rated Volt. [Vdc]		25(1E)	
Capacitance	Tolerance	Part Number	
10μF(106)	±10%(K)	GRM32DC81E106KA12L	

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

\* Please refer to GRM Series Specifications and Test Method (2).

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## High Dielectric Constant Type X5R(R6) Characteristics

LxW [mm]		0.4x0.2(02)<01005>	
Rated Volt. [Vdc]		10(1A)	6.3(0J)
Capacitance	Tolerance	Part Number	
68pF(680)	±10%(K)	GRM022R61A680KA01L	
100pF(101)	±10%(K)	GRM022R61A101KA01L	
150pF(151)	±10%(K)	GRM022R61A151KA01L	
220pF(221)	±10%(K)	GRM022R61A221KA01L	
330pF(331)	±10%(K)	GRM022R61A331KA01L	
470pF(471)	±10%(K)	GRM022R61A471KA01L	
680pF(681)	±10%(K)	GRM022R61A681KE19L*	GRM022R60J681KE19L*
1000pF(102)	±10%(K)	GRM022R61A102KE19L*	GRM022R60J102KE19L*
1500pF(152)	±10%(K)	GRM022R61A152KE19L*	GRM022R60J152KE19L*
2200pF(222)	±10%(K)	GRM022R61A222KE19L*	GRM022R60J222KE19L*
3300pF(332)	±10%(K)	GRM022R61A332KE19L*	GRM022R60J332KE19L*
4700pF(472)	±10%(K)	GRM022R61A472KE19L*	GRM022R60J472KE19L*
6800pF(682)	±10%(K)	GRM022R61A682KE19L*	GRM022R60J682KE19L*
10000pF(103)	±10%(K)	GRM022R61A103KE19L*	GRM022R60J103KE19L*

LxW [mm]		0.6x0.3(03)<0201>			
Rated Volt. [Vdc]		25(1E)	16(1C)	10(1A)	6.3(0J)
Capacitance	Tolerance	Part Number			
100pF(101)	±10%(K)				
150pF(151)	±10%(K)				
220pF(221)	±10%(K)				
330pF(331)	±10%(K)				
470pF(471)	±10%(K)				
680pF(681)	±10%(K)				
1000pF(102)	±10%(K)				
1500pF(152)	±10%(K)			GRM033R61A152KA01D	
2200pF(222)	±10%(K)			GRM033R61A222KA01D	
3300pF(332)	±10%(K)			GRM033R61A332KA01D	
4700pF(472)	±10%(K)			GRM033R61A472KA01D	
6800pF(682)	±10%(K)			GRM033R61A682KA01D	
10000pF(103)	±10%(K)			GRM033R61A103KA01D	GRM033R60J103KA01D
15000pF(153)	±10%(K)				GRM033R60J153KE01D*
22000pF(223)	±10%(K)				GRM033R60J223KE01D*
33000pF(333)	±10%(K)				GRM033R60J333KE01D*
47000pF(473)	±10%(K)				GRM033R60J473KE19D*

The part number code is shown in ( ) and Unit is shown in [ ]. <>: EIA [inch] Code

□: Please refer to X7R(R7) etc. Characteristics.

\* Please refer to GRM Series Specifications and Test Method (2).

(Part Number) **GR** **M** **02** **2** **R6** **1A** **680** **K** **A01** **L**  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- ① Product ID
- ② Series
- ③ Dimensions (LxW)
- ④ Dimension (T)
- ⑤ Temperature Characteristics
- ⑥ Rated Voltage
- ⑦ Capacitance
- ⑧ Capacitance Tolerance
- ⑨ Individual Specification Code
- ⑩ Packaging\*

Packaging Code in Part Number shows STD 180mm Reel Taping.

\*GRM022: D is applicable.



## High Dielectric Constant Type X5R(R) Characteristics

LxW [mm]		1.0x0.5(15)<0402>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
220pF(221)	±10%(K)				
330pF(331)	±10%(K)				
470pF(471)	±10%(K)				
680pF(681)	±10%(K)				
1000pF(102)	±10%(K)		GRM155R61H102KA01D		
1500pF(152)	±10%(K)				
2200pF(222)	±10%(K)		GRM155R61H222KA01D		
3300pF(332)	±10%(K)				
4700pF(472)	±10%(K)		GRM155R61H472KA01D		
6800pF(682)	±10%(K)				
10000pF(103)	±10%(K)				
15000pF(153)	±10%(K)				
22000pF(223)	±10%(K)				GRM155R61C223KA01D
33000pF(333)	±10%(K)				GRM155R61C333KA01D
47000pF(473)	±10%(K)				GRM155R61C473KA01D
68000pF(683)	±10%(K)			GRM155R61E683KA87D	GRM155R61C683KA88D
0.10μF(104)	±10%(K)			GRM155R61E104KA87D	GRM155R61C104KA88D

LxW [mm]		1.0x0.5(15)<0402>	
Rated Volt. [Vdc]		10(1A)	6.3(0J)
Capacitance	Tolerance	Part Number	
33000pF(333)	±10%(K)	GRM155R61A333KA01D	
47000pF(473)	±10%(K)	GRM155R61A473KA01D	
68000pF(683)	±10%(K)	GRM155R61A683KA01D	
0.10μF(104)	±10%(K)	GRM155R61A104KA01D	
0.15μF(154)	±10%(K)	GRM155R61A154KE19D*	GRM155R60J154KE01D*
0.22μF(224)	±10%(K)	GRM155R61A224KE19D*	GRM155R60J224KE01D*
0.33μF(334)	±10%(K)	GRM155R61A334KE15D*	GRM155R60J334KE01D*
0.47μF(474)	±10%(K)	GRM155R61A474KE15D*	GRM155R60J474KE19D*
0.68μF(684)	±10%(K)	GRM155R61A684KE15D*	GRM155R60J684KE19D*
1.0μF(105)	±10%(K)	GRM155R61A105KE15D*	

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

□: Please refer to X7R(R7) etc. Characteristics.

\* Please refer to GRM Series Specifications and Test Method (2).

For General  
GRM Series

Array  
GNM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## High Dielectric Constant Type X5R(R6) Characteristics

LxW [mm]		1.6x0.8(18)<0603>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
220pF(221)	±10%(K)				
330pF(331)	±10%(K)				
470pF(471)	±10%(K)				
680pF(681)	±10%(K)				
1000pF(102)	±10%(K)		GRM188R61H102KA01D		
1500pF(152)	±10%(K)				
2200pF(222)	±10%(K)		GRM188R61H222KA01D		
3300pF(332)	±10%(K)				
4700pF(472)	±10%(K)		GRM188R61H472KA01D		
6800pF(682)	±10%(K)				
10000pF(103)	±10%(K)		GRM188R61H103KA01D		
15000pF(153)	±10%(K)				
22000pF(223)	±10%(K)		GRM188R61H223KA01D		
33000pF(333)	±10%(K)				
47000pF(473)	±10%(K)				
68000pF(683)	±10%(K)				
0.10μF(104)	±10%(K)			GRM188R61E104KA01D	
0.15μF(154)	±10%(K)				
0.22μF(224)	±10%(K)			GRM188R61E224KA88D	GRM188R61C224KA88D
0.33μF(334)	±10%(K)				
0.47μF(474)	±10%(K)			GRM188R61E474KA12D*	GRM188R61C474KA93D*
1.0μF(105)	±10%(K)			GRM188R61E105KA12D*	GRM188R61C105KA93D*
2.2μF(225)	±10%(K)				GRM188R61C225KE15D*

LxW [mm]		1.6x0.8(18)<0603>		
Rated Volt. [Vdc]		10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number		
0.68μF(684)	±10%(K)	GRM188R61A684KA61D		
2.2μF(225)	±10%(K)	GRM188R61A225KE34D*		
4.7μF(475)	±10%(K)		GRM188R60J475KE19D*	
10μF(106)	±20%(M)		GRM188R60J106ME47D*	GRM188R60G106ME47D*
22μF(226)	±20%(M)			GRM188R60G226MEA0L*

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

□: Please refer to X7R(R7) etc. Characteristics.

\* Please refer to GRM Series Specifications and Test Method (2).

(Part Number) **GR** **M** **18** **8** **R6** **1H** **102** **K** **A01** **D** ①Product ID ②Series ③Dimensions (LxW) ④Dimension (T)  
 ⑤Temperature Characteristics ⑥Rated Voltage ⑦Capacitance  
 ⑧Capacitance Tolerance ⑨Individual Specification Code ⑩Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

## High Dielectric Constant Type X5R(R6) Characteristics

LxW [mm]		2.0x1.25(21)<0805>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
6800pF(682)	±10%(K)				
10000pF(103)	±10%(K)				
15000pF(153)	±10%(K)				
22000pF(223)	±10%(K)				
33000pF(333)	±10%(K)				
47000pF(473)	±10%(K)				
68000pF(683)	±10%(K)				
0.10μF(104)	±10%(K)				
0.15μF(154)	±10%(K)				
0.22μF(224)	±10%(K)				
0.33μF(334)	±10%(K)				
0.47μF(474)	±10%(K)				
0.68μF(684)	±10%(K)				
1.0μF(105)	±10%(K)			GRM216R61E105KA12D	GRM21BR61C105KA01L GRM216R61C105KA88D*
2.2μF(225)	±10%(K)			GRM21BR61E225KA12L GRM219R61E225KA12D*	GRM21BR61C225KA88L* GRM219R61C225KA88D*
4.7μF(475)	±10%(K)			GRM21BR61E475KA12L*	GRM21BR61C475KA88L* GRM219R61C475KE15D*
10μF(106)	±10%(K)				GRM21BR61C106KE15L*

LxW [mm]		2.0x1.25(21)<0805>		
Rated Volt. [Vdc]		10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number		
2.2μF(225)	±10%(K)	GRM21BR61A225KA01L		
4.7μF(475)	±10%(K)	GRM21BR61A475KA73L* GRM219R61A475KE34D*	GRM21BR60J475KA11L*	
10μF(106)	±10%(K)	GRM21BR61A106KE19L* GRM219R61A106KE44D*	GRM21BR60J106KE19L* GRM219R60J106KE19D*	
22μF(226)	±20%(M)		GRM21BR60J226ME39L*	GRM219R60G226ME66D*

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

□: Please refer to X7R(R7) etc. Characteristics.

\* Please refer to GRM Series Specifications and Test Method (2).

For General  
GRM Series

Array  
GNM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GQM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## High Dielectric Constant Type X5R(R6) Characteristics

LxW [mm]		3.2x1.6(31)<1206>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
15000pF(153)	±10%(K)				
22000pF(223)	±10%(K)				
33000pF(333)	±10%(K)				
47000pF(473)	±10%(K)				
68000pF(683)	±10%(K)				
0.10μF(104)	±10%(K)				
0.15μF(154)	±10%(K)				
0.22μF(224)	±10%(K)				
0.33μF(334)	±10%(K)				
0.47μF(474)	±10%(K)				
0.68μF(684)	±10%(K)				
1.0μF(105)	±10%(K)				
2.2μF(225)	±10%(K)		GRM31CR61H225KA88L	GRM316R61E225KA12D*	
4.7μF(475)	±10%(K)			GRM31CR61E475KA88L	GRM31CR61C475KA01L
				GRM319R61E475KA12D*	GRM319R61C475KA88D*
10μF(106)	±10%(K)			GRM31CR61E106KA12L*	GRM31CR61C106KA88L
					GRM319R61C106KE15D*
22μF(226)	±20%(M)				GRM31CR61C226ME15L*

LxW [mm]		3.2x1.6(31)<1206>		
Rated Volt. [Vdc]		10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number		
10μF(106)	±10%(K)	GRM319R61A106KE19L*		
22μF(226)	±20%(M)	GRM31CR61A226ME19L*	GRM31CR60J226ME19L*	
47μF(476)	±20%(M)	GRM31CR61A476ME15L*	GRM31CR60J476ME19L*	
100μF(107)	±20%(M)		GRM31CR60J107ME39L*	GRM31CR60G107ME39L*

LxW [mm]		3.2x2.5(32)<1210>			
Rated Volt. [Vdc]		100(2A)	50(1H)	35(YA)	25(1E)
Capacitance	Tolerance	Part Number			
0.68μF(684)	±10%(K)				
1.0μF(105)	±10%(K)				
2.2μF(225)	±10%(K)				
4.7μF(475)	±10%(K)				
10μF(106)	±10%(K)			GRM32ER6YA106KA12L	GRM32DR61E106KA12L
22μF(226)	±20%(M)				GRM32ER61E226ME15L*

LxW [mm]		3.2x2.5(32)<1210>		
Rated Volt. [Vdc]		16(1C)	10(1A)	6.3(0J)
Capacitance	Tolerance	Part Number		
22μF(226)	±20%(M)			
47μF(476)	±20%(M)	GRM32ER61C476ME15L*	GRM32ER61A476ME20L*	
100μF(107)	±20%(M)			GRM32ER60J107ME20L*

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

[ ] : Please refer to X7R(R7) etc. Characteristics.

\* Please refer to GRM Series Specifications and Test Method (2).

(Part Number) **GR** **M** **31** **C** **R6** **1H** **225** **K** **A88** **L**    ①Product ID    ②Series    ③Dimensions (LxW)    ④Dimension (T)  
 ⑤Temperature Characteristics    ⑥Rated Voltage    ⑦Capacitance  
 ⑧Capacitance Tolerance    ⑨Individual Specification Code    ⑩Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

## High Dielectric Constant Type X5R(R6) Characteristics-Low Profile

LxW [mm]		1.0x0.5(15)<0402>		
Rated Volt. [Vdc]		16(1C)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number		
220pF(221)	±10%(K)			
330pF(331)	±10%(K)			
470pF(471)	±10%(K)			
680pF(681)	±10%(K)			
1000pF(102)	±10%(K)			
1500pF(152)	±10%(K)			
2200pF(222)	±10%(K)			
3300pF(332)	±10%(K)			
4700pF(472)	±10%(K)			
6800pF(682)	±10%(K)			
10000pF(103)	±10%(K)			

LxW [mm]		1.6x0.8(18)<0603>	
Rated Volt. [Vdc]		16(1C)	10(1A)
Capacitance	Tolerance	Part Number	
1.0μF(105)	±10%(K)	GRM185R61C105KE44D*	GRM185R61A105KE36D*

LxW [mm]		2.0x1.25(21)<0805>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
6800pF(682)	±10%(K)				
33000pF(333)	±10%(K)				
68000pF(683)	±10%(K)				
0.22μF(224)	±10%(K)				
0.33μF(334)	±10%(K)				
0.47μF(474)	±10%(K)				
0.68μF(684)	±10%(K)				
1.0μF(105)	±10%(K)			GRM216R61E105KA12D	GRM216R61C105KA88D
2.2μF(225)	±10%(K)			GRM219R61E225KA12D*	GRM219R61C225KA88D*
4.7μF(475)	±10%(K)				GRM219R61C475KE15D*

LxW [mm]		2.0x1.25(21)<0805>		
Rated Volt. [Vdc]		10(1A)	6.3(0J)	4(0G)
Capacitance	Tolerance	Part Number		
4.7μF(475)	±10%(K)	GRM219R61A475KE34D*		
10μF(106)	±10%(K)	GRM219R61A106KE44D*	GRM219R60J106KE19D*	
22μF(226)	±20%(M)			GRM219R60G226ME66D*

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

□: Please refer to X7R(R7) etc. Characteristics.

\* Please refer to GRM Series Specifications and Test Method (2).

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## High Dielectric Constant Type X5R(R6) Characteristics-Low Profile

LxW [mm]		3.2x1.6(31)<1206>			
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)	16(1C)
Capacitance	Tolerance	Part Number			
15000pF(153)	±10%(K)				
22000pF(223)	±10%(K)				
33000pF(333)	±10%(K)				
47000pF(473)	±10%(K)				
68000pF(683)	±10%(K)				
0.10μF(104)	±10%(K)				
0.15μF(154)	±10%(K)				
0.22μF(224)	±10%(K)				
0.33μF(334)	±10%(K)				
0.47μF(474)	±10%(K)				
0.68μF(684)	±10%(K)				
1.0μF(105)	±10%(K)				
2.2μF(225)	±10%(K)			GRM316R61E225KA12D*	
4.7μF(475)	±10%(K)			GRM319R61E475KA12D*	GRM319R61C475KA88D*
10μF(106)	±10%(K)				GRM319R61C106KE15D*

LxW [mm]		3.2x1.6(31)<1206>
Rated Volt. [Vdc]		10(1A)
Capacitance	Tolerance	Part Number
10μF(106)	±10%(K)	GRM319R61A106KE19D*

LxW [mm]		3.2x2.5(32)<1210>		
Rated Volt. [Vdc]		100(2A)	50(1H)	25(1E)
Capacitance	Tolerance	Part Number		
0.68μF(684)	±10%(K)			
1.0μF(105)	±10%(K)			
10μF(106)	±10%(K)			GRM32DR61E106KA12L

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

□: Please refer to X7R(R7) etc. Characteristics.

\* Please refer to GRM Series Specifications and Test Method (2).

(Part Number) **GR** **M** **31** **6** **R6** **1E** **225** **K** **A12** **D**  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- ① Product ID
- ② Series
- ③ Dimensions (LxW)
- ④ Dimension (T)
- ⑤ Temperature Characteristics
- ⑥ Rated Voltage
- ⑦ Capacitance
- ⑧ Capacitance Tolerance
- ⑨ Individual Specification Code
- ⑩ Packaging


Packaging Code in Part Number shows STD 180mm Reel Taping.

## GRM Series Specifications and Test Methods (1) (Note 1)-Typical Inspection

(Note 1) These Specifications and Test Methods indicate typical inspection. Please refer to individual specifications (our product specifications or the approval sheet). When no "" is added in PNs table, please refer to GRM Series Specifications and Test Methods (1). When "" is added in PNs table, please refer to GRM Series Specifications and Test Methods (2).

No.	Item	Specifications		Test Method
		Temperature Compensating Type	High Dielectric Type	
1	Operating Temperature Range	-55 to +125°C (2P/R/S/T, 3P/R/S/T/U, 4P/R/S/T/U: -25 to +85°C)	B1, B3, F1: -25 to +85°C R1, R7: -55 to +125°C R6: -55 to +85°C C8: -55 to +105°C E4: +10 to +85°C F5: -30 to +85°C	Reference temperature: 25°C (2Δ, 3Δ, 4Δ, B1, B3, F1, R1: 20°C)
2	Rated Voltage	See the previous pages.		The rated voltage is defined as the maximum voltage that may be applied continuously to the capacitor. When AC voltage is superimposed on DC voltage, V <sup>P-P</sup> or V <sup>O-P</sup> , whichever is larger, should be maintained within the rated voltage range.
3	Appearance	No defects or abnormalities		Visual inspection
4	Dimensions	Within the specified dimensions		Using calipers (GRM02 size is based on Microscope)
5	Dielectric Strength	No defects or abnormalities		No failure should be observed when 300%* of the rated voltage (temperature compensating type) or 250% of the rated voltage (high dielectric constant type) is applied between the terminations for 1 to 5 seconds, provided the charge/discharge current is less than 50mA. *200% for 500V
6	Insulation Resistance	C ≤ 0.047μF: More than 10,000MΩ C > 0.047μF: More than 500Ω · F  C: Nominal Capacitance		The insulation resistance should be measured with a DC voltage not exceeding the rated voltage at 20/25°C and 75%RH max. and within 2 minutes of charging, provided the charge/discharge current is less than 50mA.
7	Capacitance	Within the specified tolerance		
8	Q/ Dissipation Factor (D.F.)	30pF and over: Q ≥ 1000 30pF and below: Q ≥ 400+20C  C: Nominal Capacitance (pF)	[R6, R7, C8] W.V.: 100V : 0.025 max. (C < 0.068μF) : 0.05 max. (C ≥ 0.068μF) W.V.: 50/35/25V: : 0.025 max.* *GRM32D R7/R6/C8 1E106: 0.035 max. W.V.: 16/10V: 0.035 max. W.V.: 6.3/4V : 0.05 max. (C < 3.3μF) : 0.1 max. (C ≥ 3.3μF) [E4] W.V.: 25Vmin: 0.025 max. [F1, F5] W.V.: 25V min. : 0.05 max. (C < 0.1μF) : 0.09 max. (C ≥ 0.1μF) W.V.: 16/10V: 0.125 max. W.V.: 6.3V: 0.15 max.	The capacitance/Q/D.F. should be measured at 20/25°C at the frequency and voltage shown in the table.

Char.	ΔC to 7U, 1X (1000pF and below)	ΔC to 7U, 1X (more than 1000pF) R6, R7, C8, F5, B1, B3, F1	R6, R7, F5 (C > 10μF)	E4
Item				
Frequency	1±0.1MHz	1±0.1kHz	120±24Hz	1±0.1kHz
Voltage	0.5 to 5Vrms	1±0.2Vrms	0.5±0.1Vrms	0.5±0.05Vrms

Continued on the following page. 

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GOM Series

Monolithic Microchip GMA Series

For Bonding GMD Series

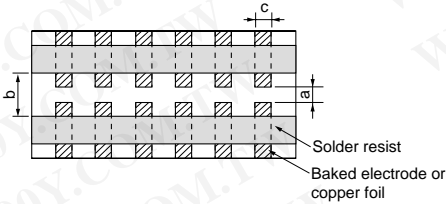
Product Information

# GRM Series Specifications and Test Methods (1) (Note 1)-Typical Inspection

(Note 1) These Specifications and Test Methods indicate typical inspection.

Please refer to individual specifications (our product specifications or the approval sheet).  
 When no "\*" is added in PNs table, please refer to GRM Series Specifications and Test Methods (1).  
 When "\*" is added in PNs table, please refer to GRM Series Specifications and Test Methods (2).

Continued from the preceding page.

No.	Item	Specifications		Test Method																																								
		Temperature Compensating Type	High Dielectric Type																																									
9	Capacitance Temperature Characteristics	No bias	B1, B3: Within $\pm 10\%$ (-25 to +85°C) R1, R7: Within $\pm 15\%$ (-55 to +125°C) R6: Within $\pm 15\%$ (-55 to +85°C) E4: Within $\pm 22/-56\%$ (+10 to +85°C) F1: Within $\pm 30/-80\%$ (-25 to +85°C) F5: Within $\pm 22/-82\%$ (-30 to +85°C) C8: Within $\pm 22\%$ (-55 to +105°C)	The capacitance change should be measured after 5 min. at each specified temp. stage. (1) Temperature Compensating Type The temperature coefficient is determined using the capacitance measured in step 3 as a reference. When cycling the temperature sequentially from steps 1 through 5 (5C: +25 to +125°C/ $\Delta$ C: +20 to +125°C; other temp. coeffs.: +25 to +85°C/+20 to +85°C) the capacitance should be within the specified tolerance for the temperature coefficient and capacitance change as in Table A-1. The capacitance drift is calculated by dividing the differences between the maximum and minimum measured values in the steps 1, 3 and 5 by the cap. value in step 3.																																								
		50% of the Rated Voltage	B1: Within +10/-30% R1: Within +15/-40% F1: Within +30/-95%																																									
9	Capacitance Drift	Within $\pm 0.2\%$ or $\pm 0.05\text{pF}$ (whichever is larger.) *Do not apply to 1X/25V	*Initial measurement for high dielectric constant type Perform a heat treatment at 150+0/-10°C for one hour and then set for 24 $\pm$ 2 hours at room temperature. Perform the initial measurement.	(2) High Dielectric Constant Type The ranges of capacitance change compared with the Reference Temperature value over the temperature ranges shown in the table should be within the specified ranges.* When applying voltage, the capacitance change should be measured after 1 more min. with applying voltage in equilibration of each temp. stage.																																								
10	Adhesive Strength of Termination	No removal of the terminations or other defect should occur.		Solder the capacitor to the test jig (glass epoxy board) shown in Fig. 1a using a eutectic solder. Then apply 10N* force in parallel with the test jig for 10 $\pm$ 1 sec. The soldering should be done either with an iron or using the reflow method and should be conducted with care so that the soldering is uniform and free of defects such as heat shock. *1N (GRM02), 2N (GRM03), 5N (GRM15, GRM18)																																								
		 <p>Fig. 1a</p>																																										
				(in mm)																																								
				<table border="1"> <thead> <tr> <th>Type</th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>GRM02</td> <td>0.2</td> <td>0.56</td> <td>0.23</td> </tr> <tr> <td>GRM03</td> <td>0.3</td> <td>0.9</td> <td>0.3</td> </tr> <tr> <td>GRM15</td> <td>0.4</td> <td>1.5</td> <td>0.5</td> </tr> <tr> <td>GRM18</td> <td>1.0</td> <td>3.0</td> <td>1.2</td> </tr> <tr> <td>GRM21</td> <td>1.2</td> <td>4.0</td> <td>1.65</td> </tr> <tr> <td>GRM31</td> <td>2.2</td> <td>5.0</td> <td>2.0</td> </tr> <tr> <td>GRM32</td> <td>2.2</td> <td>5.0</td> <td>2.9</td> </tr> <tr> <td>GRM43</td> <td>3.5</td> <td>7.0</td> <td>3.7</td> </tr> <tr> <td>GRM55</td> <td>4.5</td> <td>8.0</td> <td>5.6</td> </tr> </tbody> </table>	Type	a	b	c	GRM02	0.2	0.56	0.23	GRM03	0.3	0.9	0.3	GRM15	0.4	1.5	0.5	GRM18	1.0	3.0	1.2	GRM21	1.2	4.0	1.65	GRM31	2.2	5.0	2.0	GRM32	2.2	5.0	2.9	GRM43	3.5	7.0	3.7	GRM55	4.5	8.0	5.6
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GRM55	4.5	8.0	5.6																																									

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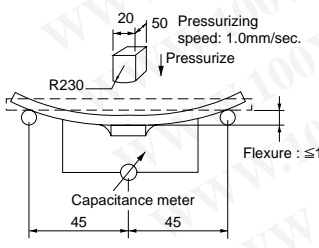
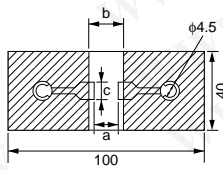
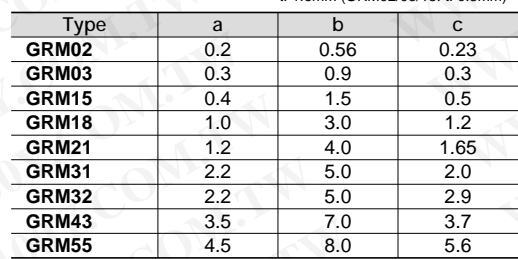
For General GRM Series  
 Array GNM Series  
 Low ESL LL□ Series  
 High-Q GJM Series  
 High Frequency GOM Series  
 Monolithic Microchip GMA Series  
 For Bonding GMD Series  
 Product Information




# GRM Series Specifications and Test Methods (1) (Note 1)-Typical Inspection

(Note 1) These Specifications and Test Methods indicate typical inspection. Please refer to individual specifications (our product specifications or the approval sheet).  
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Continued from the preceding page.

No.	Item	Specifications		Test Method
		Temperature Compensating Type	High Dielectric Type	
11	Appearance	No defects or abnormalities		Solder the capacitor on the test jig (glass epoxy board) in the same manner and under the same conditions as (10). The capacitor should be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 55Hz. The frequency range, from 10 to 55Hz and return to 10Hz, should be traversed in approximately 1 minute. This motion should be applied for a period of 2 hours in each of 3 mutually perpendicular directions (total of 6 hours).
	Capacitance	Within the specified tolerance		
11	Vibration Resistance	[B1, B3, R6, R7, C8] W.V.: 100V : 0.025 max. (C<0.068μF) : 0.05 max. (C≥0.068μF) W.V.: 50/35/25V: : 0.025 max.* *GRM32D R7/R6/C8 1E106: 0.035 max. W.V.: 16/10V: 0.035 max. W.V.: 6.3/4V : 0.05 max. (C<3.3μF) : 0.1 max. (C≥3.3μF)		
	Q/D.F.	30pF and over: Q≥1000 30pF and below: Q≥400+20C C: Nominal Capacitance (pF)		
12	Appearance	No marking defects		Solder the capacitor on the test jig (glass epoxy board) shown in Fig. 2a using a eutectic solder. Then apply a force in the direction shown in Fig. 3a for 5±1 sec. The soldering should be done by the reflow method and should be conducted with care so that the soldering is uniform and free of defects such as heat shock.
	Capacitance Change	Within ±5% or ±0.5pF (whichever is larger)	Within ±10%	
12	Deflection			
				
13	Solderability of Termination	75% of the terminations are to be soldered evenly and continuously.		Immerse the capacitor in a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight proportion). Preheat at 80 to 120°C for 10 to 30 seconds. After preheating, immerse in a eutectic solder solution for 2±0.5 seconds at 230±5°C or Sn-3.0Ag-0.5Cu solder solution for 2±0.5 seconds at 245±5°C.

Continued on the following page. 

For General GRM Series

Array GNM Series

Low ESL LL□ Series

High-Q GJM Series

High Frequency GOM Series

Monolithic Microchip GMA Series

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Product Information

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Continued from the preceding page.

No.	Item	Specifications		Test Method															
		Temperature Compensating Type	High Dielectric Type																
14		The measured and observed characteristics should satisfy the specifications in the following table.		Preheat the capacitor at 120 to 150°C for 1 minute. Immerse the capacitor in a eutectic solder or Sn-3.0Ag-0.5Cu solder solution at 270±5°C for 10±0.5 seconds. Set at room temperature for 24±2 hours, then measure.  •Initial measurement for high dielectric constant type Perform a heat treatment at 150+0/-10°C for one hour and then set at room temperature for 24±2 hours. Perform the initial measurement.  •Preheating for GRM32/43/55															
	Appearance	No defects or abnormalities																	
	Capacitance Change	Within ±2.5% or ±0.25pF (whichever is larger)	B1, B3, R1, R6, R7, C8: Within ±7.5% F1, F5, E4: Within ±20%																
	Resistance to Soldering Heat	30pF and over: Q≥1000 30pF and below: Q≥400+20C C: Nominal Capacitance (pF)	[B1, B3, R6, R7, C8] W.V.: 100V : 0.025 max. (C<0.068μF) : 0.05 max. (C≥0.068μF) W.V.: 50/35/25V: : 0.025 max.* *GRM32D R7/R6/C8 1E106: 0.035 max. W.V.: 16/10V: 0.035 max. W.V.: 6.3/4V : 0.05 max. (C<3.3μF) : 0.1 max. (C≥3.3μF) [E4] W.V.: 25Vmin: 0.025 max. [F1, F5] W.V.: 25V min. : 0.05 max. (C<0.1μF) : 0.09 max. (C≥0.1μF) W.V.: 16/10V: 0.125 max. W.V.: 6.3V: 0.15 max.																
	Q/D.F.																		
	I.R.	More than 10,000MΩ or 500Ω · F (whichever is smaller)																	
15		The measured and observed characteristics should satisfy the specifications in the following table.		Fix the capacitor to the supporting jig in the same manner and under the same conditions as (10). Perform the five cycles according to the four heat treatments shown in the following table. Set for 24±2 hours at room temperature, then measure.															
	Appearance	No defects or abnormalities																	
	Capacitance Change	Within ±2.5% or ±0.25pF (whichever is larger)	B1, B3, R1, R6, R7, C8: Within ±7.5% F1, F5, E4: Within ±20%																
	Temperature Cycle	30pF and over: Q≥1000 30pF and below: Q≥400+20C C: Nominal Capacitance (pF)	[B1, B3, R6, R7, C8] W.V.: 100V : 0.025 max. (C<0.068μF) : 0.05 max. (C≥0.068μF) W.V.: 50/35/25V: : 0.025 max.* *GRM32D R7/R6/C8 1E106: 0.035 max. W.V.: 16/10V: 0.035 max. W.V.: 6.3/4V : 0.05 max. (C<3.3μF) : 0.1 max. (C≥3.3μF) [E4] W.V.: 25Vmin: 0.05 max. [F1, F5] W.V.: 25V min. : 0.05 max. (C<0.1μF) : 0.09 max. (C≥0.1μF) W.V.: 16/10V: 0.125 max. W.V.: 6.3V: 0.15 max.																
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	Step	Temperature	Time																
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	2	170 to 200°C	1 min.																
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	Step	1	2		3	4													
	Temp. (°C)	Min. Operating Temp. +0/-3	Room Temp.		Max. Operating Temp. +3/-0	Room Temp.													
	Time (min.)	30±3	2 to 3		30±3	2 to 3													
	Appearance	No defects or abnormalities																	
	Capacitance Change	Within ±2.5% or ±0.25pF (whichever is larger)	B1, B3, R1, R6, R7, C8: Within ±7.5% F1, F5, E4: Within ±20%																
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15		The measured and observed characteristics should satisfy the specifications in the following table.		•Initial measurement for high dielectric constant type Perform a heat treatment at 150+0/-10°C for one hour and then set at room temperature for 24±2 hours. Perform the initial measurement.															
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Continued from the preceding page.

No.	Item	Specifications		Test Method
		Temperature Compensating Type	High Dielectric Type	
16		The measured and observed characteristics should satisfy the specifications in the following table.		Set the capacitor at 40±2°C and in 90 to 95% humidity for 500±12 hours. Remove and set for 24±2 hours at room temperature, then measure.
	Appearance	No defects or abnormalities		
	Capacitance Change	Within ±5% or ±0.5pF (whichever is larger)	B1, B3, R1, R6, R7, C8: Within ±12.5% F1, F5, E4: Within ±30%	
	Q/D.F.	30pF and over: Q≥350 10pF and over: Q≥275+2.5C 30pF and below: Q≥200+10C C: Nominal Capacitance (pF)	[R6, R7, C8] W.V.: 100V : 0.05 max. (C<0.068μF) : 0.075 max. (C≥0.068μF) W.V.: 50/35/25/16/10V : 0.05 max. W.V.: 6.3/4V : 0.075 max. (C<3.3μF) : 0.125 max. (C≥3.3μF) [E4] W.V.: 25Vmin: 0.05 max. [F1, F5] W.V.: 25V min. : 0.075 max. (C<0.1μF) : 0.125 max. (C≥0.1μF) W.V.: 16/10V: 0.15 max. W.V.: 6.3V: 0.2 max.	
	I.R.	More than 1,000MΩ or 50Ω · F (whichever is smaller)		
17		The measured and observed characteristics should satisfy the specifications in the following table.		Apply the rated voltage at 40±2°C and 90 to 95% humidity for 500±12 hours. Remove and set for 24±2 hours at room temperature, then measure. The charge/discharge current is less than 50mA. •Initial measurement for F1, F5/10V max. Apply the rated DC voltage for 1 hour at 40±2°C. Remove and set for 24±2 hours at room temperature. Perform initial measurement.
	Appearance	No defects or abnormalities		
	Capacitance Change	Within ±7.5% or ±0.75pF (whichever is larger)	B1, B3, R1, R6, R7, C8: Within ±12.5% F1, F5, E4: Within ±30% [W.V.: 10V max.] F1, F5: Within +30/-40%	
	Q/D.F.	30pF and over: Q≥200 30pF and below: Q≥100+10C/3 C: Nominal Capacitance (pF)	[B1, B3, R6, R7, C8] W.V.: 100V : 0.05 max. (C<0.068μF) : 0.075 max. (C≥0.068μF) W.V.: 50/35/25/16/10V : 0.05 max. W.V.: 6.3/4V : 0.075 max. (C<3.3μF) : 0.125 max. (C≥3.3μF) [E4] W.V.: 25Vmin: 0.05 max. [F1, F5] W.V.: 25V min. : 0.075 max. (C<0.1μF) : 0.125 max. (C≥0.1μF) W.V.: 16/10V: 0.15 max. W.V.: 6.3V: 0.2 max.	
	I.R.	More than 500MΩ or 25Ω · F (whichever is smaller)		

Continued on the following page. 

For General  
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Continued from the preceding page.

No.	Item	Specifications		Test Method
		Temperature Compensating Type	High Dielectric Type	
18		The measured and observed characteristics should satisfy the specifications in the following table.		Apply 200%* of the rated voltage at the maximum operating temperature $\pm 3^{\circ}\text{C}$ for $1000 \pm 12$ hours. Set for $24 \pm 2$ hours at room temperature, then measure. The charge/discharge current is less than 50mA.  *Initial measurement for high dielectric constant type. Apply 200% of the rated voltage* at the maximum operating temperature $\pm 3^{\circ}\text{C}$ for one hour. Remove and set for $24 \pm 2$ hours at room temperature. Perform initial measurement.  *GRM155C81E 683/104, GRM188C81E105, GRM188C81E105, GRM21BR71H105, GRM21BR72A474, GRM21BR71C225, GRM31CR71H475, GRM32E R6/R7 YA106, GRM32D R7/R6/C8 1E106 : 150% of the rated voltage.
	Appearance	No defects or abnormalities		
	Capacitance Change	Within $\pm 3\%$ or $\pm 0.3\text{pF}$ (whichever is larger)	B1, B3, R1, R6, R7, C8: Within $\pm 12.5\%$ F1, F5, E4: Within $\pm 30\%$ [Except 10V max. and $C \geq 1.0\mu\text{F}$ ] F1, F5: Within $+30/-40\%$ [10V max. and $C \geq 1.0\mu\text{F}$ ]	
	Q/D.F.	30pF and over: $Q \geq 350$ 10pF and over 30pF and below: $Q \geq 275 + 2.5C$ 10pF and below: $Q \geq 200 + 10C$  C: Nominal Capacitance (pF)	[B1, B3, R6, R7, C8] W.V.: 100V : 0.05 max. ( $C < 0.068\mu\text{F}$ ) : 0.075 max. ( $C \geq 0.068\mu\text{F}$ ) W.V.: 50/35/25/16/10V : 0.05 max. W.V.: 6.3/4V : 0.075 max. ( $C < 3.3\mu\text{F}$ ) : 0.125 max. ( $C \geq 3.3\mu\text{F}$ ) [E4] W.V.: 25Vmin: 0.05 max. [F1, F5] W.V.: 25V min. : 0.075 max. ( $C < 0.1\mu\text{F}$ ) : 0.125 max. ( $C \geq 0.1\mu\text{F}$ ) W.V.: 16/10V: 0.15 max. W.V.: 6.3V: 0.2 max.	
	I.R.	More than $1,000\text{M}\Omega$ or $50\Omega \cdot \text{F}$ (whichever is smaller)		

Table A-1  
(1)

Char.	Nominal Values (ppm/ $^{\circ}\text{C}$ )*1	Capacitance Change from 25 $^{\circ}\text{C}$ (%)					
		-55		-30		-10	
		Max.	Min.	Max.	Min.	Max.	Min.
5C	0 $\pm$ 30	0.58	-0.24	0.40	-0.17	0.25	-0.11
6C	0 $\pm$ 60	0.87	-0.48	0.59	-0.33	0.38	-0.21
6P	-150 $\pm$ 60	2.33	0.72	1.61	0.50	1.02	0.32
6R	-220 $\pm$ 60	3.02	1.28	2.08	0.88	1.32	0.56
6S	-330 $\pm$ 60	4.09	2.16	2.81	1.49	1.79	0.95
6T	-470 $\pm$ 60	5.46	3.28	3.75	2.26	2.39	1.44
7U	-750 $\pm$ 120	8.78	5.04	6.04	3.47	3.84	2.21
1X	+350 to -1000	-	-	-	-	-	-

\*1: Nominal values denote the temperature coefficient within a range of 25 $^{\circ}\text{C}$  to 125 $^{\circ}\text{C}$  (for  $\Delta\text{C}$ )/85 $^{\circ}\text{C}$  (for other TC).

(2)


Char.	Nominal Values (ppm/ $^{\circ}\text{C}$ )*2	Capacitance Change from 20 $^{\circ}\text{C}$ (%)					
		-55		-25		-10	
		Max.	Min.	Max.	Min.	Max.	Min.
2C	0 $\pm$ 60	0.82	-0.45	0.49	-0.27	0.33	-0.18
3C	0 $\pm$ 120	1.37	-0.90	0.82	-0.54	0.55	-0.36
4C	0 $\pm$ 250	2.56	-1.88	1.54	-1.13	1.02	-0.75
2P	-150 $\pm$ 60	-	-	1.32	0.41	0.88	0.27
3P	-150 $\pm$ 120	-	-	1.65	0.14	1.10	0.09
4P	-150 $\pm$ 250	-	-	2.36	-0.45	1.57	-0.30
2R	-220 $\pm$ 60	-	-	1.70	0.72	1.13	0.48
3R	-220 $\pm$ 120	-	-	2.03	0.45	1.35	0.30
4R	-220 $\pm$ 250	-	-	2.74	-0.14	1.83	-0.09
2S	-330 $\pm$ 60	-	-	2.30	1.22	1.54	0.81
3S	-330 $\pm$ 120	-	-	2.63	0.95	1.76	0.63
4S	-330 $\pm$ 250	-	-	3.35	0.36	2.23	0.24
2T	-470 $\pm$ 60	-	-	3.07	1.85	2.05	1.23
3T	-470 $\pm$ 120	-	-	3.40	1.58	2.27	1.05
4T	-470 $\pm$ 250	-	-	4.12	0.99	2.74	0.66
3U	-750 $\pm$ 120	-	-	4.94	2.84	3.29	1.89
4U	-750 $\pm$ 250	-	-	5.65	2.25	3.77	1.50

\*2: Nominal values denote the temperature coefficient within a range of 20 $^{\circ}\text{C}$  to 125 $^{\circ}\text{C}$  (for  $\Delta\text{C}$ )/85 $^{\circ}\text{C}$  (for other TC).

## GRM Series Specifications and Test Methods (2) (Note 1)-Typical Inspection

(Note 1) These Specifications and Test Methods indicate typical inspection.  
 Please refer to individual specifications (our product specifications or the approval sheet).  
 When no "\*" is added in PN's table, please refer to GRM Series Specifications and Test Methods (1).  
 When "\*" is added in PN's table, please refer to GRM Series Specifications and Test Methods (2).

No.	Item	Specifications	Test Method																																																																			
1	Operating Temperature Range	B1, B3, F1: -25 to +85°C R1, R7, C7, D7, E7: -55 to +125°C C6, R6: -55 to +85°C F5: -30 to +85°C C8, D8: -55 to +105°C,	Reference temperature: 25°C (B1, B3, R1, F1: 20°C)																																																																			
2	Rated Voltage	See the previous pages.	The rated voltage is defined as the maximum voltage that may be applied continuously to the capacitor. When AC voltage is superimposed on DC voltage, V <sup>P-P</sup> or V <sup>O-P</sup> , whichever is larger, should be maintained within the rated voltage range.																																																																			
3	Appearance	No defects or abnormalities	Visual inspection																																																																			
4	Dimensions	Within the specified dimensions	Using calipers (GRM02 size is based on Microscope)																																																																			
5	Dielectric Strength	No defects or abnormalities	No failure should be observed when 250% of the rated voltage is applied between the terminations for 1 to 5 seconds, provided the charge/discharge current is less than 50mA.																																																																			
6	Insulation Resistance	More than 50Ω · F	The insulation resistance should be measured with a DC voltage not exceeding the rated voltage at reference temperature and 75%RH max. and within 1 minutes of charging, provided the charge/discharge current is less than 50mA.																																																																			
7	Capacitance	Within the specified tolerance *Table 1 <table border="1"> <thead> <tr> <th>GRM022</th> <th>B3/R6</th> <th>1A</th> <th>681 to 103</th> </tr> </thead> <tbody> <tr> <td>GRM155</td> <td>B3/R6</td> <td>1A</td> <td>124 to 105</td> </tr> <tr> <td>GRM185</td> <td>B3/R6</td> <td>1C/1A</td> <td>105</td> </tr> <tr> <td>GRM185</td> <td>C8/D7</td> <td>1A</td> <td>105</td> </tr> <tr> <td>GRM188</td> <td>B3/R6</td> <td>1C/1A</td> <td>225</td> </tr> <tr> <td>GRM188</td> <td>R7/C8</td> <td>1A</td> <td>225</td> </tr> <tr> <td>GRM188</td> <td>B3/R6</td> <td>1A</td> <td>335</td> </tr> <tr> <td>GRM219</td> <td>B3/R6</td> <td>1C/1A</td> <td>475</td> </tr> <tr> <td>GRM219</td> <td>C8</td> <td>1A</td> <td>475</td> </tr> <tr> <td>GRM219</td> <td>B3/R6</td> <td>1A</td> <td>106</td> </tr> <tr> <td>GRM21B</td> <td>B3/R6</td> <td>1C/1A</td> <td>106</td> </tr> <tr> <td>GRM21B</td> <td>R7/C8</td> <td>1A</td> <td>106</td> </tr> <tr> <td>GRM319</td> <td>B3/R6</td> <td>1C/1A</td> <td>106</td> </tr> </tbody> </table>	GRM022	B3/R6	1A	681 to 103	GRM155	B3/R6	1A	124 to 105	GRM185	B3/R6	1C/1A	105	GRM185	C8/D7	1A	105	GRM188	B3/R6	1C/1A	225	GRM188	R7/C8	1A	225	GRM188	B3/R6	1A	335	GRM219	B3/R6	1C/1A	475	GRM219	C8	1A	475	GRM219	B3/R6	1A	106	GRM21B	B3/R6	1C/1A	106	GRM21B	R7/C8	1A	106	GRM319	B3/R6	1C/1A	106	The capacitance/D.F. should be measured at reference temperature at the measuring frequency and voltage shown in the table. <table border="1"> <thead> <tr> <th>Nominal Capacitance</th> <th>Measuring Frequency</th> <th>Measuring Voltage</th> </tr> </thead> <tbody> <tr> <td>C ≤ 10μF (10V min.)*</td> <td>1±0.1kHz</td> <td>1.0±0.2Vrms</td> </tr> <tr> <td>C ≤ 10μF (6.3V max.)</td> <td>1±0.1kHz</td> <td>0.5±0.1Vrms</td> </tr> <tr> <td>C &gt; 10μF</td> <td>120±24Hz</td> <td>0.5±0.1Vrms</td> </tr> <tr> <td>*For items in Table1</td> <td>1±0.1kHz</td> <td>0.5±0.1Vrms</td> </tr> </tbody> </table>	Nominal Capacitance	Measuring Frequency	Measuring Voltage	C ≤ 10μF (10V min.)*	1±0.1kHz	1.0±0.2Vrms	C ≤ 10μF (6.3V max.)	1±0.1kHz	0.5±0.1Vrms	C > 10μF	120±24Hz	0.5±0.1Vrms	*For items in Table1	1±0.1kHz	0.5±0.1Vrms
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GRM185	C8/D7	1A	105																																																																			
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GRM188	R7/C8	1A	225																																																																			
GRM188	B3/R6	1A	335																																																																			
GRM219	B3/R6	1C/1A	475																																																																			
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*For items in Table1	1±0.1kHz	0.5±0.1Vrms																																																																				
8	Dissipation Factor (D.F.)	B1, B3, R1, *R6, *R7, C7, C8, E7, D7: 0.1 max. C6: 0.125 max. D8: 0.15 max. F1, F5: 0.2 max. *GRM31CR71E106: 0.125 max. GRM31CR6 0J/0G 107: 0.15 max.	GRM188C80E106: Perform a heat treatment at 150+0/-10°C for one hour and then set for 24±2 hours at room temperature.																																																																			

Continued on the following page. 

For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

Product Information

## GRM Series Specifications and Test Methods (2) (Note 1)-Typical Inspection

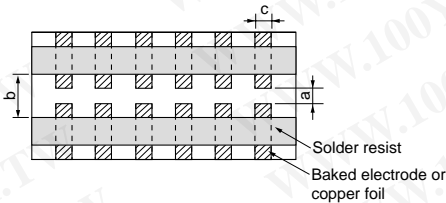
(Note 1) These Specifications and Test Methods indicate typical inspection.


Please refer to individual specifications (our product specifications or the approval sheet).

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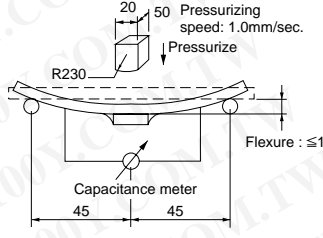
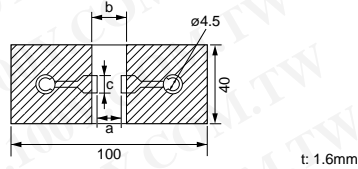
No.	Item	Specifications	Test Method																												
9	No bias	B1, B3 : Within $\pm 10\%$ ( $-25$ to $+85^\circ\text{C}$ ) F1 : Within $+30/-80\%$ ( $-25$ to $+85^\circ\text{C}$ ) R6 : Within $\pm 15\%$ ( $-55$ to $+85^\circ\text{C}$ ) R1, R7 : Within $\pm 15\%$ ( $-55$ to $+125^\circ\text{C}$ ) F5 : Within $+22/-82\%$ ( $-30$ to $+85^\circ\text{C}$ ) C6 : Within $\pm 22\%$ ( $-55$ to $+85^\circ\text{C}$ ) C7 : Within $\pm 22\%$ ( $-55$ to $+125^\circ\text{C}$ ) C8 : Within $\pm 22\%$ ( $-55$ to $+105^\circ\text{C}$ ) D7 : Within $+22/-33\%$ ( $-55$ to $+125^\circ\text{C}$ ) E7 : Within $+22/-56\%$ ( $-55$ to $+125^\circ\text{C}$ ) D8 : Within $+22/-33\%$ ( $-55$ to $+105^\circ\text{C}$ )	The capacitance change should be measured after 5 min. at each specified temp. stage. The ranges of capacitance change compared with the reference temperature value over the temperature ranges shown in the table should be within the specified ranges.* In case of applying voltage, the capacitance change should be measured after 1 more min. with applying voltage in equilibration of each temp. stage. *GRM32DR60J226, GRM43 B1/B3/R6 0J/1A 336/476: $1.0\pm 0.2V_{rms}$ GRM155B30G475, GRM155B30J 225, GRM21BB30J476, GRM155R60E106, GRM188 B3/R6 0E/0G/0J 226: $0.2\pm 0.05V_{rms}$																												
	Capacitance Temperature Characteristics	50% of the Rated Voltage B1: Within $+10/-30\%$ R1: Within $+15/-40\%$ F1: Within $+30/-95\%$		<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (<math>^\circ\text{C}</math>)</th> <th>Applying Voltage (V)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">1</td> <td><math>25\pm 2</math> (for R6, R7, C6, C7, C8, D7, D8, E7, F5)</td> <td rowspan="8">No bias</td> </tr> <tr> <td><math>20\pm 2</math> (for B1, B3, F1, R1)</td> </tr> <tr> <td rowspan="2">2</td> <td><math>-55\pm 3</math> (for R1, R6, R7, C6, C7, C8, D7, D8, E7)</td> </tr> <tr> <td><math>-30\pm 3</math> (for F5)</td> </tr> <tr> <td rowspan="2">3</td> <td><math>-25\pm 3</math> (for B1, B3, F1)</td> </tr> <tr> <td><math>25\pm 2</math> (for R6, R7, C6, C7, C8, D7, D8, E7, F5)</td> </tr> <tr> <td rowspan="2">4</td> <td><math>20\pm 2</math> (for B1, B3, F1, R1)</td> </tr> <tr> <td><math>125\pm 3</math> (for R1, R7, C7, D7, E7)</td> </tr> <tr> <td rowspan="2">5</td> <td><math>105\pm 3</math> (for C8, D8)</td> <td rowspan="2">50% of the rated voltage</td> </tr> <tr> <td><math>85\pm 3</math> (for B1, B3, F1, F5, R6, C6)</td> </tr> <tr> <td rowspan="2">6</td> <td><math>20\pm 2</math> (for B1, F1, R1)</td> </tr> <tr> <td><math>-55\pm 3</math> (for R1)</td> </tr> <tr> <td rowspan="2">7</td> <td><math>-25\pm 3</math> (for B1, F1)</td> </tr> <tr> <td><math>20\pm 2</math> (for B1, F1, R1)</td> </tr> <tr> <td rowspan="2">8</td> <td><math>125\pm 3</math> (for R1)</td> </tr> <tr> <td><math>85\pm 3</math> (for B1, F1)</td> </tr> </tbody> </table> <p>*Initial measurement for high dielectric constant type                      Perform a heat treatment at <math>150\pm 0/-10^\circ\text{C}</math> for one hour and then set for <math>24\pm 2</math> hours at room temperature.                      Perform the initial measurement.</p>	Step	Temperature ( $^\circ\text{C}$ )	Applying Voltage (V)	1	$25\pm 2$ (for R6, R7, C6, C7, C8, D7, D8, E7, F5)	No bias	$20\pm 2$ (for B1, B3, F1, R1)	2	$-55\pm 3$ (for R1, R6, R7, C6, C7, C8, D7, D8, E7)	$-30\pm 3$ (for F5)	3	$-25\pm 3$ (for B1, B3, F1)	$25\pm 2$ (for R6, R7, C6, C7, C8, D7, D8, E7, F5)	4	$20\pm 2$ (for B1, B3, F1, R1)	$125\pm 3$ (for R1, R7, C7, D7, E7)	5	$105\pm 3$ (for C8, D8)	50% of the rated voltage	$85\pm 3$ (for B1, B3, F1, F5, R6, C6)	6	$20\pm 2$ (for B1, F1, R1)	$-55\pm 3$ (for R1)	7	$-25\pm 3$ (for B1, F1)	$20\pm 2$ (for B1, F1, R1)	8
Step	Temperature ( $^\circ\text{C}$ )	Applying Voltage (V)																													
1	$25\pm 2$ (for R6, R7, C6, C7, C8, D7, D8, E7, F5)	No bias																													
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	$85\pm 3$ (for B1, F1)																														
10	Adhesive Strength of Termination	No removal of the terminations or other defects should occur.  Fig. 1a	Solder the capacitor on the test jig (glass epoxy board) shown in Fig. 1a using a eutectic solder. Then apply $10N^*$ force in parallel with the test jig for $10\pm 1$ sec. The soldering should be done either with an iron or using the reflow method and should be conducted with care so that the soldering is uniform and free of defects such as heat shock. *1N: GRM02, 2N: GRM03, 5N: GRM15/GRM18																												
11	Appearance	No defects or abnormalities	Solder the capacitor on the test jig (glass epoxy board) in the same manner and under the same conditions as (10). The capacitor should be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 55Hz. The frequency range, from 10 to 55Hz and return to 10Hz, should be traversed in approximately 1 minute. This motion should be applied for a period of 2 hours in each of 3 mutually perpendicular directions (total of 6 hours).																												
	Capacitance	Within the specified tolerance																													
11	Vibration	D.F.	B1, B3, R1, *R6, *R7, C7, C8, E7, D7: 0.1 max. C6: 0.125 max. D8: 0.15 max. F1, F5: 0.2 max. *GRM31CR71E106: 0.125 max. GRM31CR6 0J/0G 107: 0.15 max.																												

Continued on the following page. 

## GRM Series Specifications and Test Methods (2) (Note 1)-Typical Inspection

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Continued from the preceding page.

No.	Item	Specifications	Test Method																																								
12	Appearance	No marking defects	Solder the capacitor on the test jig (glass epoxy board) shown in Fig. 2a using a eutectic solder. Then apply a force in the direction shown in Fig. 3a for 5±1 sec. The soldering should be done by the reflow method and should be conducted with care so that the soldering is uniform and free of defects such as heat shock.																																								
	Capacitance Change	Within ±10%																																									
12	Deflection	 <p>Fig.3a</p>	 <p>Fig. 2a (GRM02/03/15: t: 0.8mm)</p> <table border="1"> <thead> <tr> <th>Type</th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>GRM02</td> <td>0.2</td> <td>0.56</td> <td>0.23</td> </tr> <tr> <td>GRM03</td> <td>0.3</td> <td>0.9</td> <td>0.3</td> </tr> <tr> <td>GRM15</td> <td>0.4</td> <td>1.5</td> <td>0.5</td> </tr> <tr> <td>GRM18</td> <td>1.0</td> <td>3.0</td> <td>1.2</td> </tr> <tr> <td>GRM21</td> <td>1.2</td> <td>4.0</td> <td>1.65</td> </tr> <tr> <td>GRM31</td> <td>2.2</td> <td>5.0</td> <td>2.0</td> </tr> <tr> <td>GRM32</td> <td>2.2</td> <td>5.0</td> <td>2.9</td> </tr> <tr> <td>GRM43</td> <td>3.5</td> <td>7.0</td> <td>3.7</td> </tr> <tr> <td>GRM55</td> <td>4.5</td> <td>8.0</td> <td>5.6</td> </tr> </tbody> </table> <p>(in mm)</p>	Type	a	b	c	GRM02	0.2	0.56	0.23	GRM03	0.3	0.9	0.3	GRM15	0.4	1.5	0.5	GRM18	1.0	3.0	1.2	GRM21	1.2	4.0	1.65	GRM31	2.2	5.0	2.0	GRM32	2.2	5.0	2.9	GRM43	3.5	7.0	3.7	GRM55	4.5	8.0	5.6
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GRM43	3.5	7.0	3.7																																								
GRM55	4.5	8.0	5.6																																								
13	Solderability of Termination	75% of the terminations is to be soldered evenly and continuously.	Immerse the capacitor in a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight proportion). Preheat at 80 to 120°C for 10 to 30 seconds. After preheating, immerse in a eutectic solder solution for 2±0.5 seconds at 230±5°C or Sn-3.0Ag-0.5Cu solder solution for 2±0.5 seconds at 245±5°C.																																								
14	Appearance	No defects or abnormalities	Preheat the capacitor at 120 to 150°C for 1 minute. Immerse the capacitor in a eutectic solder* or Sn-3.0Ag-0.5Cu solder solution at 270±5°C for 10±0.5 seconds. Set at room temperature for 24±2 hours, then measure. *Do not apply to GRM02. •Initial measurement for high dielectric constant type Perform a heat treatment at 150+0/-10°C for one hour and then set at room temperature for 24±2 hours. Perform the initial measurement. *Preheating for GRM32/43/55																																								
	Resistance to Soldering Heat	B1, B3, R1, *R6, *R7, C6, C7, *C8, E7, D7: 0.1 max. C6: 0.125 max. D8: 0.15 max. F1, F5: 0.2 max. *GRM31CR71E106: 0.125 max. GRM31CR6 0J/0G 107: 0.15 max.																																									
	D.F.	More than 50Ω · F																																									
	I.R.	No defects																																									
	Dielectric Strength	No defects																																									
15	Appearance	No defects or abnormalities	Fix the capacitor to the supporting jig in the same manner and under the same conditions as (10). Perform the five cycles according to the four heat treatments shown in the following table. Set for 24±2 hours at room temperature, then measure.																																								
	Capacitance Change	B1, B3, R1, R6, R7, C6, C7, C8, D7, D8: Within ±7.5% E7: Within ±30% F1, F5: Within ±20%																																									
	D.F.	B1, B3, R1, *R6, *R7, C7, C8, E7, D7: 0.1 max. C6: 0.125 max. D8: 0.15 max. F1, F5: 0.2 max. *GRM31CR71E106: 0.125 max. GRM31CR6 0J/0G 107: 0.15 max.																																									
	I.R.	More than 50Ω · F																																									
	Dielectric Strength	No defects																																									

Continued on the following page. 

## GRM Series Specifications and Test Methods (2) (Note 1)-Typical Inspection

**(Note 1) These Specifications and Test Methods indicate typical inspection. Please refer to individual specifications (our product specifications or the approval sheet). When no "\*" is added in PNs table, please refer to GRM Series Specifications and Test Methods (1). When "\*" is added in PNs table, please refer to GRM Series Specifications and Test Methods (2).**

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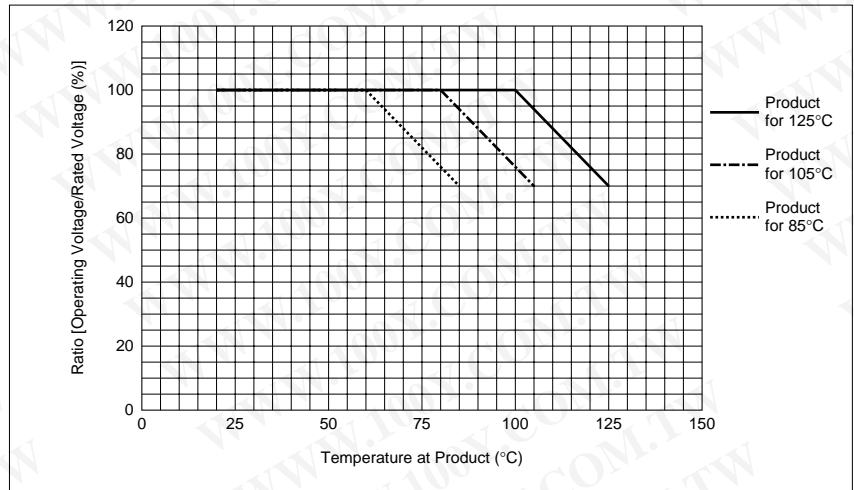
No.	Item	Specifications	Test Method
16	Appearance	No defects or abnormalities	Apply the rated voltage at 40±2°C and 90 to 95% humidity for 500±12 hours. The charge/discharge current is less than 50mA. •Initial measurement Perform a heat treatment at 150+0/-10°C for one hour and then let sit for 24±2 hours at room temperature. Perform the initial measurement. •Measurement after test Perform a heat treatment at 150+0/-10°C for one hour and then let sit for 24±2 hours at room temperature, then measure.
	High Temperature High Humidity (Steady) Capacitance Change	B1, B3, R1, R6, R7, C6, C7, C8, E7, D7, D8: Within ±12.5% F1, F5: Within ±30%	
	D.F.	B1, B3, R1, R6, R7, C6, C7, *C8, E7, D7, D8: 0.2 max. F1, F5: 0.4 max. *GRM319C81A106, GRM31MC81A106: 0.125 max.	
	I.R.	More than 12.5Ω · F	
17	Appearance	No defects or abnormalities	Apply 150%* of the rated voltage for 1000±12 hours at the maximum operating temperature ±3°C. Let sit for 24±2 hours at room temperature, then measure. The charge/discharge current is less than 50mA. * Part Numbers with # have individual specification. As for these Part Numbers, please refer to table A. •Initial measurement Perform a heat treatment at 150+0/-10°C for one hour and then let sit for 24±2 hours at room temperature. Perform the initial measurement. •Measurement after test Perform a heat treatment at 150+0/-10°C for one hour and then let sit for 24±2 hours at room temperature, then measure.
	Durability Capacitance Change	B1, B3, R1, *R6, R7, C6, C7, *C8, E7, D7, D8: Within ±12.5% F1, F5: Within ±30% *GRM188C8 0E/0G 106, GRM219R60G226: within ±15%	
	D.F.	B1, B3, R1, R6, R7, C6, C7, *C8, E7, D7, D8: 0.2 max. F1, F5: 0.4 max. *GRM319C81A106, GRM31MC81A106: 0.125 max.	
	I.R.	More than 25Ω · F	

Table A

Part Number	Dimension L×W (mm)	Temp. Char.	Rated Volt. (Vdc)	Capacitance (F)	Cap. Tol (%)	Spec. Test Methods	Applied Testing Voltage at Durability
GRM155C80J684KE15D	1.0×0.5	X6S	6.3	0.68μ	±10%	(2)	Rated Volt. ×100%
GRM155C80J684ME15D	1.0×0.5	X6S	6.3	0.68μ	±20%	(2)	Rated Volt. ×100%
GRM188C80G106ME47D	1.6×0.8	X6S	4	10μ	±20%	(2)	Rated Volt. ×100%
GRM21BC80J226ME51L	2.0×1.25	X6S	6.3	22μ	±20%	(2)	Rated Volt. ×100%
GRM319D71C475KA12D	3.2×1.6	X7T	16	4.7μ	±10%	(2)	Rated Volt. ×100%
GRM319D71C475MA12D	3.2×1.6	X7T	16	4.7μ	±20%	(2)	Rated Volt. ×100%

Part Numbers of table A are designed for use in the circuits where continuous applied voltage to the capacitor is derated than rated voltage. These Part Numbers guarantee Durability Test with 100% x rated voltage as testing voltage at the maximum operating temperature. The following voltage and temperature derating conditions are recommended for use to ensure the same reliability level as normal specification.

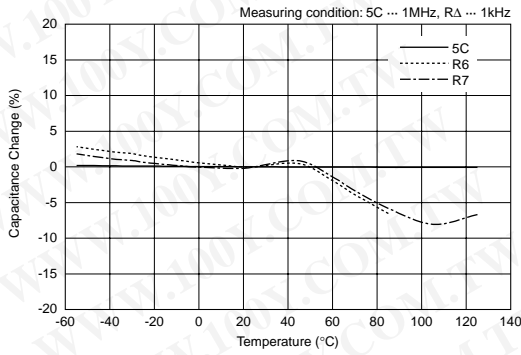
• Recommended Derating Conditions on Voltage and Temperature



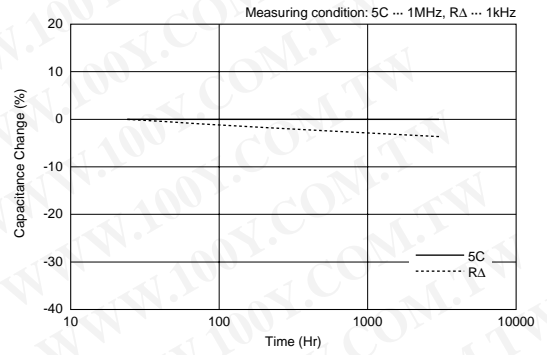


# GRM Series Data

## ■ Capacitance - Temperature Characteristics

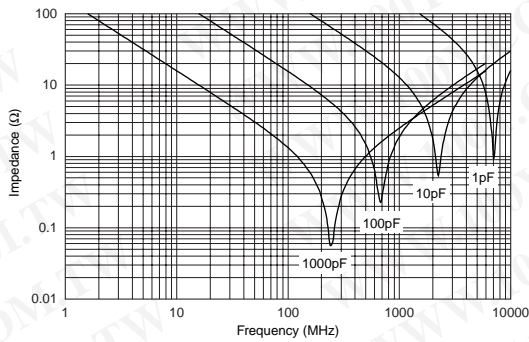


## ■ Capacitance Change - Aging

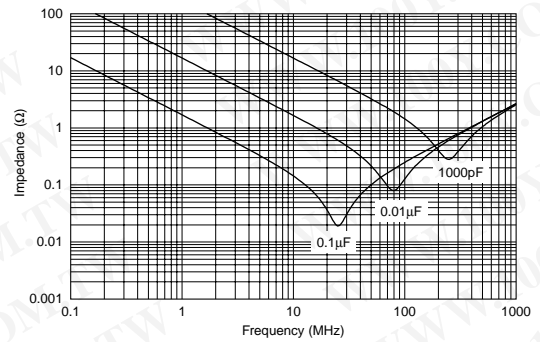


## ■ Impedance - Frequency Characteristics

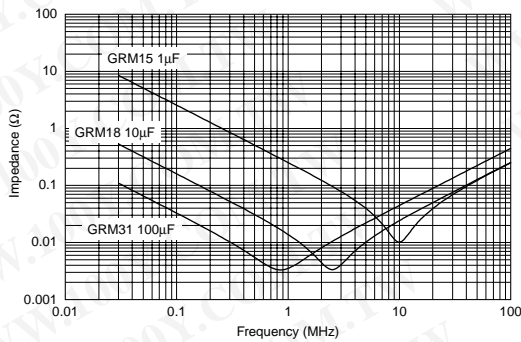
5C: GRM15



R $\Delta$ : GRM15



R $\Delta$



The data herein are given in typical values, not guaranteed ratings.  
 Please refer to our Web site or contact our sales representatives for individual Part Number's data.  
 Our Web Site: [http://www.murata.com/products/capacitor/tech\\_data/](http://www.murata.com/products/capacitor/tech_data/)

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For General  
GRM Series

Array  
GMM Series

Low ESL  
LL□ Series

High-Q  
GJM Series

High Frequency  
GOM Series

Monolithic Microchip  
GMA Series

For Bonding  
GMD Series

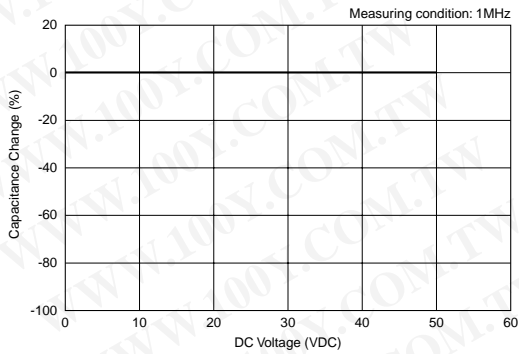
Product Information

## GRM Series Data

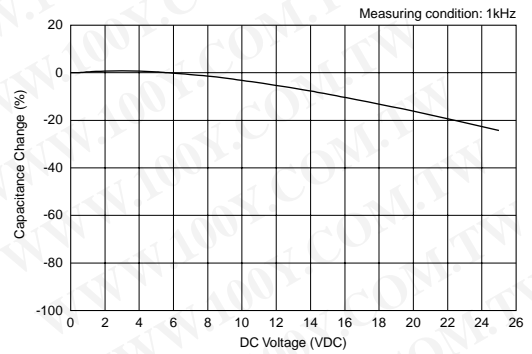
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### Capacitance - DC Voltage Characteristics

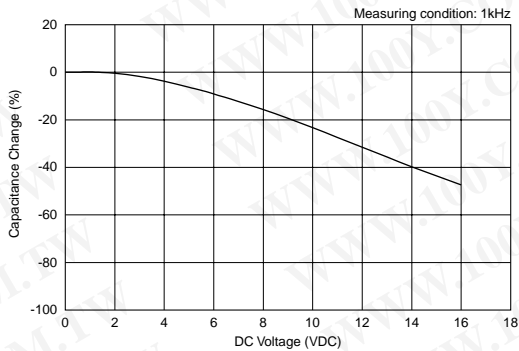
Temperature Compensating Type: GRM1555C1H102JA01



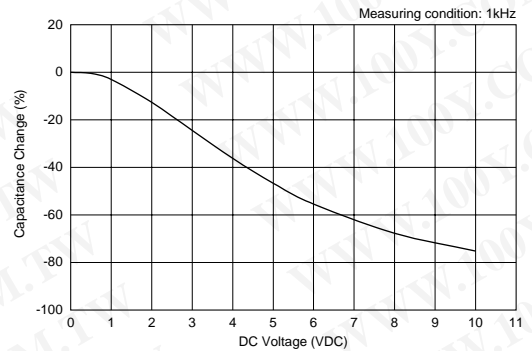
High Dielectric Constant Type: GRM155R71E103KA01



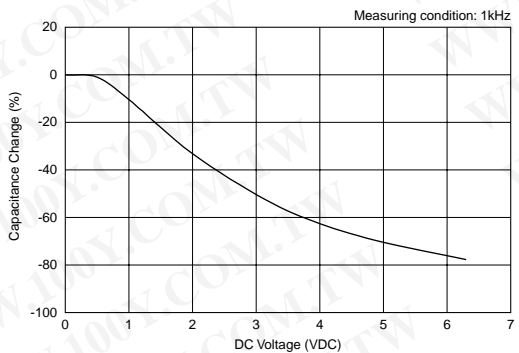
High Dielectric Constant Type: GRM155R71C104KA88



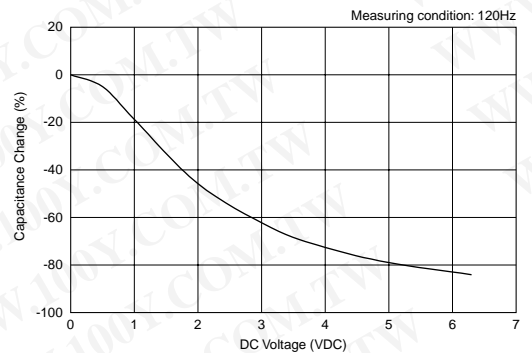
High Dielectric Constant Type: GRM155R61A105KE15



High Dielectric Constant Type: GRM188R60J106ME47



High Dielectric Constant Type: GRM31CR60J107ME39



The data herein are given in typical values, not guaranteed ratings.  
 Please refer to our Web site or contact our sales representatives for individual Part Number's data.  
 Our Web Site: [http://www.murata.com/products/capacitor/tech\\_data/](http://www.murata.com/products/capacitor/tech_data/)

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