

## MONOLITHIC CERAMIC CAPACITORS

	Series	Dimensions (mm)	Capacitance Range (F)									
			0.1p	1p	10p	100p	1000p	0.01 μ	0.1 μ	1 μ	10 μ	100 μ
For General Electronics Equipment	GRM36	1.0×0.5	0.5pF						0.1 μF			
	GRM39	1.6×0.8	0.5pF							1 μF		
	GRM40	2.0×1.25	0.5pF								2.2 μF	
	GRM42-6	3.2×1.6					2700pF				4.7 μF	
	GRM42-2	3.2×2.5					6800pF				0.68 μF	
	GRM43-2	4.5×3.2					8200pF				1.5 μF	
	GRM44-1	5.7×5.0					0.012 μF				4.7 μF	
Low Distortion Series	GRM420	1.6×0.8				1000pF			0.01 μF			
	GRM425	2.0×1.25				1000pF			0.033 μF			
	GRM430	3.2×1.6					0.018 μF		0.1 μF			
High-Voltage Type	GHM1030	3.2×1.6				100pF			1000pF			
	GHM1038	4.5×2.0	10pF			82pF						
	GHM1040	4.5×3.2				100pF		220pF				
	GHM1530	3.2×1.6				1000pF			0.01 μF			
	GHM1535	3.2×2.5					0.015 μF		0.022 μF			
	GHM1540	4.5×3.2					0.033 μF		0.1 μF			
	GHM1545	5.7×5.0						0.15 μF		0.22 μF		
250VAC Type	GHM2143	5.7×2.8					0.01 μF		0.047 μF			
	GHM2145	5.7×5.0							0.1 μF			
	GHM2243	5.7×2.8				470pF			4700pF			
High Frequency Series	GRH706	1.25×1.0	0.5pF						43pF			
	GRH708	2.0×1.25	0.5pF						160pF			
	GRH710	3.2×2.5	0.5pF						1000pF			
	GRH110	1.4×1.4	0.5pF						100pF			
	GRH111	2.8×2.8	0.5pF						1000pF			

### Part Numbering (Please specify the part number when ordering)

(Ex.) GRM40 C0G 151 J 50 PT  
 Type ① ② ③ ④ Murata's control no. ⑤

Type: Please refer to the capacitance table.

#### ① Temperature Characteristic

- Temperature compensating type

Code	C0G	P2H	R2H	S2H	T2H	U2J	SL
Temp. range	-55 to 125°C						-30 to 85°C
Temp. coeff. (ppm/°C)	0±30	-150±60	-220±60	-330±60	-470±60	-750±120	+350 to -1000

- High dielectric constant

Code	X7R	X5R	Z5U	Y5V	B	R
Temp. range	-55 to 125°C	-55 to 85°C	10 to 85°C	-30 to 85°C		-25 to 85°C
Cap. change (%)	±15	±15	+22 -56	+22 -82	±10	±15

- High-Voltage/250VAC type

Code	SL	R	B
Temp. range	20 to 85°C	-55 to 125°C	-25 to 125°C
Cap. change	+350 to -1000 ppm/°C	±15%	±10%

#### ② Capacitance

Ex.

Code	Capacitance (pF)	Code	Capacitance (pF)
0R5	0.5	100	10
R75	0.75	101	100
010	1	103	10000

#### ③ Capacitance Tolerance

- Temperature compensating type

Code	C	D	J
Cap. tolerance	±0.25pF	±0.5pF	±5%

- High dielectric constant

Code	K	M	Z
Cap. tolerance	±10%	±20%	+80% -20%

#### ④ Rated Voltage

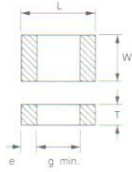
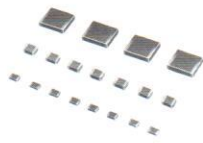
Code	Rated voltage
10	10VDC
16	16VDC
25	25VDC
50	50VDC
630	630VDC
2K	2kVDC
3K	3.15kVDC
AC250	250VAC

#### ⑤ Packaging Code (Only for chip type)

Code	Packaging
PB	Bulk packaging in a bag
PT	Tape carrier packaging
PC	Bulk case packaging

## MONOLITHIC CERAMIC CAPACITORS

### Nickel Barriered Termination Type GRM Series for General Electronic Equipment



Type	e	g
GRM36	0.15-0.3	0.4
GRM39	0.2-0.5	0.5
GRM40	0.2-0.7	0.7
GRM42-6	0.3-0.8	1.5
GRM42-2	0.3 min.	1.0
GRM43-2	0.3 min.	2.0
GRM44-1	0.3 min.	2.0

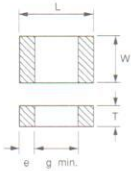
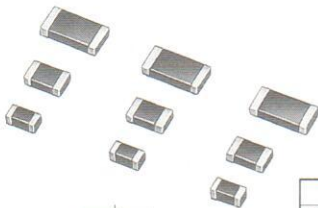
(in mm)

Temperature Compensating Type	Part Number	Temp. Char. ①/Cap. Value (pF) ②						Dimensions (mm)			
		COG	P2H	R2H	S2H	T2H	U2J	SL	L	W	T
Temperature Compensating Type	GRM36①②③④⑤	0.5-160	—	—	—	—	—	43-200	1.0±0.05	0.5±0.05	0.5±0.05
	GRM39①②③④⑤	0.5-510	3-160	3-160	3-220	3-390	3-750	62-750	1.6±0.1	0.8±0.1	0.8±0.1
	GRM40①②③④⑤	0.5-560	3-160	3-180	3-240	3-130	3-1300	330-1300	2.0±0.1	1.25±0.1	0.7 <sup>+0.2</sup>
		620-1500	180-360	200-470	270-470	150-390	1500-2200	1500-2200			1.0 <sup>+0.2</sup>
	GRM42-6①②③④⑤	1600-2400	390-620	510-750	510-820	430-1800	2400-3300	2400-3300	3.2±0.15	1.6±0.15	1.25±0.1
		2700-3600	680-910	820	910-1100	—	3600-6200	3600-6200			1.0 <sup>+0.2</sup>
	GRM42-2①②③④⑤	3900-6200	1000-1600	910-1600	1200-2000	2000-4300	6800-8200	6800-8200	3.2±0.3	2.5±0.2	1.5 <sup>+0.3</sup>
	GRM43-2①②③④⑤	8200-13000	—	—	—	—	—	13000-16000	4.5±0.4	3.2±0.3	2.0 max.
	GRM44-1①②③④⑤	15000-43000	—	—	—	—	—	18000-39000	5.7±0.4	5.0±0.4	2.0 max.

High Dielectric Constant Type	Part Number	Temp. Char. ①/Cap. Value (pF) ②/Rated Voltage ③								Dimensions (mm)					
		X7R		X5R		Z5U	Y5V			L	W	T			
		50V	25V	16V	16V	10V	50V	50V	25V				16V	10V	
High Dielectric Constant Type	GRM36①②③④⑤	220-3900	4700-6800	8200-10000	—	—	—	2200-15000	22000	33000-47000 100000	—	1.0±0.05	0.5±0.05	0.5±0.05	
	GRM39①②③④⑤	220-18000	22000-27000	33000-47000	—	—	1500-10000	10000-47000	68000-100000	150000-220000	1000000	—	1.6±0.1	0.8±0.1	0.8±0.1
		330-22000	27000-33000	39000-56000	—	—	4700-22000	10000-68000	100000-150000	—	—	0.7 <sup>+0.2</sup>			
	GRM40①②③④⑤	27000-39000	39000-68000	68000-100000	—	—	33000	100000-150000	220000	—	—	—	2.0±0.1	1.25±0.1	1.0 <sup>+0.2</sup>
		47000-68000	82000-150000	120000-330000	470000	1000000	47000-100000	220000	330000	470000-1000000	2200000	—			1.25±0.1
	GRM42-6①②③④⑤	82000-100000	—	—	—	—	—	330000	—	—	—	—	3.2±0.15	1.6±0.15	1.0 <sup>+0.2</sup>
		120000-150000	180000-330000	—	1000000	—	150000-220000	470000	680000-1000000	1500000-2200000	4700000	—			1.25±0.2
	GRM42-2①②③④⑤	—	—	—	—	—	330000	—	—	—	—	—	3.2±0.3	2.5±0.2	1.25±0.2
		180000-220000	—	—	—	—	—	680000	—	—	—	—			1.5 <sup>+0.3</sup>
	GRM43-2①②③④⑤	270000-470000	—	—	—	—	470000-1000000	1000000-1500000	—	—	—	—	4.5±0.4	3.2±0.3	2.0 max.
GRM44-1①②③④⑤	560000-1000000	—	—	—	—	1500000	2200000-4700000	—	—	—	—	5.7±0.4	5.0±0.4	2.0 max.	

\* L : 2.0±0.15, W : 1.25±0.15, T : 1.25±0.15

### Low Distortion GRM400 Series



Type	e	g
GRM420	0.2-0.5	0.5
GRM425	0.2-0.7	0.7
GRM430	0.3-0.8	1.5

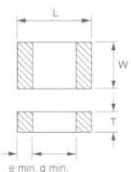
(in mm)

Part Number	Temp. Char. ①/Cap. Value (pF) ②		Dimensions (mm)		
	B	R	L	W	T
GRM420①②③④⑤	1000-3300	3900-10000	1.6±0.1	0.8±0.1	0.8±0.1
GRM425①②③④⑤	1000-10000	12000-15000	2.0±0.1	1.25±0.1	0.7 <sup>+0.2</sup>
	12000-15000	18000-33000			1.0 <sup>+0.2</sup>
GRM430①②③④⑤	18000	—	3.2±0.15	1.6±0.15	0.7 <sup>+0.2</sup>
	22000-39000	47000-68000			1.0 <sup>+0.2</sup>
	—	82000-100000			1.25 <sup>+0.2</sup>

#### Features

- Lower dissipation factor and lower distortion.
- Shock noise due to piezoelectricity reduced.

### Thin Type GRM40-024/GRM42-625 Series



(in mm)

Type	L	W	T	e	g
GRM40-024	2.0±0.1	1.25±0.1	0.5 max.	0.2	0.7
GRM42-625	3.2±0.15	1.6±0.15	0.6 max.	0.3	1.5

Type	Rated Voltage ④	Temp. Char. ①/Cap. Value (pF) ②			
		COG	SL	X7R	Y5V
GRM40-024①②③④⑤	50V	0.5-360	220-470	220-680	10000
	25V	—	—	8200-10000	15000-33000
	16V	—	—	12000-27000	47000-100000
GRM42-625①②③④⑤	25V	—	—	—	150000-220000

Please see page 55 for high-frequency monolithic ceramic capacitors and page 56 for microchip capacitors.

EMI SUPPRESSION FILTERS (EMIFL)

MICROWAVE COMPONENTS

FILTERS

VIDEO EQUIPMENT

FUNCTIONAL MODULES HYBRID ICs

POWER SUPPLIES

SENSORS

CAPACITORS

THERMISTORS /RESISTORS

COILS/DELAY LINES /FERRITE CORES

RESONATORS

PIEZO PRODUCTS