

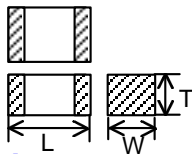
# CHIP MONOLITHIC CERAMIC CAPACITOR

## GRM033 series (0201 Chip size)

### Features

1. Small chip size, 0201 (L:0.6 x W:0.3 x T:0.3mm).
2. The GRM033 series is a complete line of chip ceramic capacitor in 6.3V, 10V, 16V, 25V and 50V.
3. No Polarity
4. Nickel barrier with Tin layer termination.
5. GRM033 type is suited to only reflow soldering.
6. Stringent dimensional tolerances allow highly reliable, high speed automatic chip placement on PCBs.
7. Tape and reel packaging (15,000pcs/reel) are available.
8. GRM033 series are suited to miniature microwave module, portable equipment and high-frequency circuit.

### Chip dimension



(in mm)

EIA size	L	W	T
0201	0.6+/-0.03	0.3+/-0.03	0.3+/-0.03

### Capacitance Range

Type (EIA)	TC	WV	Capacitance Range (pF)							Capacitance Range (pF)	
			1	10	100	1000	10000	100000	1000000		
GRM033 (0201)	C0G	25	■	■	■	■	■	■	■	■	0.5 - 100 pF
		50	■	■	■	■	■	■	■	■	1 - 15 pF
	U2J	25	■	■	■	■	■	■	■	■	16 - 100 pF
		25	■	■	■	■	■	■	■	■	100 - 1,500pF
		16	■	■	■	■	■	■	■	■	2,200 - 3,300pF
	X7R	10	■	■	■	■	■	■	■	■	4,700 - 10,000 pF
		6.3	■	■	■	■	■	■	■	■	15,000 - 47,000pF
	X6S	4	■	■	■	■	■	■	■	■	0.1uF
		2.5	■	■	■	■	■	■	■	■	(0.22uF)
	X5R	10	■	■	■	■	■	■	■	■	1,500 - 10,000 pF
		6.3	■	■	■	■	■	■	■	■	15,000pF - 0.1uF
	Y5V	4	■	■	■	■	■	■	■	■	(0.22uF)
10		■	■	■	■	■	■	■	■	1,500 - 10,000 pF	

### Global Part Numbering

GR	M	03	3	5C	1E	101	J	D01	E
-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	-9-	-10-

#### -1-:Product ID

Code	Product
GR	MLCC cap for commercial grade

#### -2-:Series

Code	Series
M	Tin Plated termination

#### -3-:Dimension (LxW)

Code	Dimension (LxW)
03	0.6x0.3mm

#### -4-:Dimension (T)

Code	Dimension (T)
3	0.3mm

#### -5-:Temperature Characteristics

Code	TC	Temp. Range	Cap. Change
5C	C0G	-55 to 125C	0+/-30ppm/C
7U	U2J	-55 to 85C	-750+/-120ppm/C
R7	X7R	-55 to 125C	+/-15%
C8	X6S	-55 to 105C	+/-22%
R6	X5R	-55 to 85C	+/-15%
F5	Y5V	-30 to 85C	+22, -82%

#### -6-:Rated Voltage

Code	Rated Voltage
0J	DC 6.3V
1A	DC 10V
1C	DC 16V
1E	DC 25V
1H	DC 50V

#### -7-:Capacitance

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

#### -8-:Capacitance Tolerance

Code	Cap. Tol.	TC
C	+/-0.25pF	C0G/U2J (<=5pF)
D	+/-0.5pF	C0G/U2J (6 - 9pF)
J	+/-5%	C0G/U2J (>=10pF)
K	+/-10%	X7R/X5R
M	+/-20%	X7R/X5R
Z	+80, -20%	Y5V

#### -9-:Individual Specification Code

Code	Packaging
D	φ178mm Paper Taping
B	Bulk in nylon bag
C	Bulk Case

#### -10-:Packaging

**GRM033 series (0201 Chip size)**

Size	TC	WV	Cap	Cap Tol	Murata Global P/N	Sample	Mass Production	
0201	COG	25V	0.5pF	+/-0.25pF	GRM0335C1ER50CD01D	Available	M.P.	
		25V	1pF	+/-0.25pF	GRM0335C1E1R0CD01D	Available	M.P.	
		25V	2pF	+/-0.25pF	GRM0335C1E2R0CD01D	Available	M.P.	
		25V	3pF	+/-0.25pF	GRM0335C1E3R0CD01D	Available	M.P.	
		25V	4pF	+/-0.25pF	GRM0335C1E4R0CD01D	Available	M.P.	
		25V	5pF	+/-0.25pF	GRM0335C1E5R0CD01D	Available	M.P.	
		25V	6pF	+/-0.5pF	GRM0335C1E6R0DD01D	Available	M.P.	
		25V	7pF	+/-0.5pF	GRM0335C1E7R0DD01D	Available	M.P.	
		25V	8pF	+/-0.5pF	GRM0335C1E8R0DD01D	Available	M.P.	
		25V	9pF	+/-0.5pF	GRM0335C1E9R0DD01D	Available	M.P.	
		25V	10pF	+/-5%	GRM0335C1E100JD01D	Available	M.P.	
		25V	12pF	+/-5%	GRM0335C1E120JD01D	Available	M.P.	
		25V	15pF	+/-5%	GRM0335C1E150JD01D	Available	M.P.	
		25V	18pF	+/-5%	GRM0335C1E180JD01D	Available	M.P.	
		25V	22pF	+/-5%	GRM0335C1E220JD01D	Available	M.P.	
		25V	27pF	+/-5%	GRM0335C1E270JD01D	Available	M.P.	
		25V	33pF	+/-5%	GRM0335C1E330JD01D	Available	M.P.	
		25V	39pF	+/-5%	GRM0335C1E390JD01D	Available	M.P.	
		25V	47pF	+/-5%	GRM0335C1E470JD01D	Available	M.P.	
		25V	56pF	+/-5%	GRM0335C1E560JD01D	Available	M.P.	
	25V	68pF	+/-5%	GRM0335C1E680JD01D	Available	M.P.		
	25V	82pF	+/-5%	GRM0335C1E820JD01D	Available	M.P.		
	25V	100pF	+/-5%	GRM0335C1E101JD01D	Available	M.P.		
	0201	U2J	50V	1pF	+/-0.25pF	GRM0337U1H010CD01D	Available	M.P.
			50V	2pF	+/-0.25pF	GRM0337U1H020CD01D	Available	M.P.
			50V	3pF	+/-0.25pF	GRM0337U1H030CD01D	Available	M.P.
			50V	4pF	+/-0.25pF	GRM0337U1H040CD01D	Available	M.P.
			50V	5pF	+/-0.25pF	GRM0337U1H050CD01D	Available	M.P.
			50V	6pF	+/-0.5pF	GRM0337U1H060DD01D	Available	M.P.
			50V	7pF	+/-0.5pF	GRM0337U1H070DD01D	Available	M.P.
			50V	8pF	+/-0.5pF	GRM0337U1H080DD01D	Available	M.P.
			50V	9pF	+/-0.5pF	GRM0337U1H090DD01D	Available	M.P.
			50V	10pF	+/-5%	GRM0337U1H100JD01D	Available	M.P.
			50V	12pF	+/-5%	GRM0337U1H120JD01D	Available	M.P.
50V			15pF	+/-5%	GRM0337U1H150JD01D	Available	M.P.	
25V			18pF	+/-5%	GRM0337U1E180JD01D	Available	M.P.	
25V			22pF	+/-5%	GRM0337U1E220JD01D	Available	M.P.	
25V			27pF	+/-5%	GRM0337U1E270JD01D	Available	M.P.	
25V			33pF	+/-5%	GRM0337U1E330JD01D	Available	M.P.	
25V			39pF	+/-5%	GRM0337U1E390JD01D	Available	M.P.	
25V			47pF	+/-5%	GRM0337U1E470JD01D	Available	M.P.	
25V			56pF	+/-5%	GRM0337U1E560JD01D	Available	M.P.	
25V			68pF	+/-5%	GRM0337U1E680JD01D	Available	M.P.	
25V			82pF	+/-5%	GRM0337U1E820JD01D	Available	M.P.	
25V			100pF	+/-5%	GRM0337U1E101JD01D	Available	M.P.	

## GRM033 series (0201 Chip size)

Size	TC	WV	Cap	Cap Tol	Murata Global P/N	Sample	Mass Production
0201	X7R	25V	100pF	+/-10%	GRM033R71E101KA01D	Available	M.P.
		25V	150pF	+/-10%	GRM033R71E151KA01D	Available	M.P.
		25V	220pF	+/-10%	GRM033R71E221KA01D	Available	M.P.
		25V	330pF	+/-10%	GRM033R71E331KA01D	Available	M.P.
		25V	470pF	+/-10%	GRM033R71E471KA01D	Available	M.P.
		25V	680pF	+/-10%	GRM033R71E681KA01D	Available	M.P.
		25V	1,000pF	+/-10%	GRM033R71E102KA01D	Available	M.P.
		25V	1,500pF	+/-10%	GRM033R71E152KA01D	Available	M.P.
		16V	2,200pF	+/-10%	GRM033R71C222KA88D	Available	M.P.
		16V	3,300pF	+/-10%	GRM033R71C332KA88D	Available	M.P.
		10V	4,700pF	+/-10%	GRM033R71A472KA01D	Available	M.P.
	10V	6,800pF	+/-10%	GRM033R71A682KA01D	Available	M.P.	
	10V	10,000pF	+/-10%	GRM033R71A103KA01D	Available	M.P.	
	X6S	6.3V	15,000pF	+/-10%	GRM033C80J153KE01D	Available	M.P.
		6.3V	22,000pF	+/-10%	GRM033C80J223KE01D	Available	M.P.
		6.3V	33,000pF	+/-10%	GRM033C80J333KE01D	Available	M.P.
		6.3V	47,000pF	+/-10%	GRM033C80J473KE19D	Available	M.P.
		4V	0.1uF	+/-10%	GRM033C80G104KE19D	Available	M.P.
		2.5V	0.22uF	+/-20%	GRM033C80E224M****	05Q3	06Q1
	X5R	10V	1,500pF	+/-10%	GRM033R61A152KA01D	Available	M.P.
		10V	2,200pF	+/-10%	GRM033R61A222KA01D	Available	M.P.
		10V	3,300pF	+/-10%	GRM033R61A332KA01D	Available	M.P.
		10V	4,700pF	+/-10%	GRM033R61A472KA01D	Available	M.P.
		10V	6,800pF	+/-10%	GRM033R61A682KA01D	Available	M.P.
		10V	10,000pF	+/-10%	GRM033R61A103KA01D	Available	M.P.
		6.3V	15,000pF	+/-10%	GRM033R60J153KE01D	Available	M.P.
		6.3V	22,000pF	+/-10%	GRM033R60J223KE01D	Available	M.P.
		6.3V	33,000pF	+/-10%	GRM033R60J333KE01D	Available	M.P.
		6.3V	47,000pF	+/-10%	GRM033R60J473KE19D	Available	M.P.
		6.3V	68,000pF	+/-10%	GRM033R60J683KE19D	Available	M.P.
		6.3V	0.1uF	+/-10%	GRM033R60J104KE19D	Available	M.P.
		4V	0.22uF	+/-20%	GRM033R60G224M****	05Q3	06Q1
		Y5V	10V	1,500pF	+80/-20%	GRM033F51A152ZD01D	Available
	10V		2,200pF	+80/-20%	GRM033F51A222ZD01D	Available	M.P.
	10V		4,700pF	+80/-20%	GRM033F51A472ZD01D	Available	M.P.
	10V		10,000pF	+80/-20%	GRM033F51A103ZD01D	Available	M.P.

**NEW**

- 1) Above table shows only commercial grade, and it include non automotive critical application.
- 2) This is muRata's development schedule, which may change due to progress of each development works.
- 3) Q1 = January to March Q2 = April to June Q3 = July to September Q4 = October to December,
- 4) Above individual specification code and packaging code were decided with muRata standard specification, and it may change due to the special requirement by customer's drawing.
- 5) "\*\*\*\*" (Individual specification code) of under development P/N have not fixed yet.