

Chip Multilayer Ceramic Capacitors for General Purpose
GRM155R61A105KE15_(0402,X5R(EIA),1uF,DC 10 V)
_:Packaging Code

muRata

Reference Sheet

■ Scope

This product specification is applied to Chip Multilayer Ceramic Capacitors used for General Electronic equipment.

■ MURATA Part No. System

(Ex.)	GRM	15	5	R6	1A	105	K	E15	D
	(1)L/W Dimensions	(2)T Dimensions	(3)Temperature Characteristics	(4)Rated Voltage	(5)Nominal Capacitance	(6)Capacitance Tolerance	(7)Murata's Control Code	(8)Packaging Code	

■ Type



■ Rated Value

(1)Size Code : 0402

(3)Temperature Characteristics : R6(Public STD Code :X5R(EIA))

MURATA PART NO.	Dimensions(mm)					(3)Temperature Characteristics			(4)Rated Voltage	(5)Nominal Capacitance	(6)Capacitance Tolerance	Operating Temp. Range	Mounting Method
	(1)-1 L	(1)-2 W	(2) T	e	g	Temp. coeff or Cap. Change	Temp. Range	Ref.Temp.					
GRM155R61A105KE15_	1.0 +/-0.05	0.5 +/-0.05	0.5 +/-0.05	0.15 to 0.35	0.3 min.	+/-15 %	-55 to 85 °C	25 °C	DC 10 V	1uF	+/-10 %	-55 to 85 °C	Reflow

■ Package

(8)Code	Packaging	Packaging Unit
D	φ180mm Reel PAPER Tape W8P2	10000 pcs./Reel
W	φ180mm Reel PAPER Tape W8P1	20000 pcs./Reel
J	φ330mm Reel PAPER Tape W8P2	50000 pcs./Reel

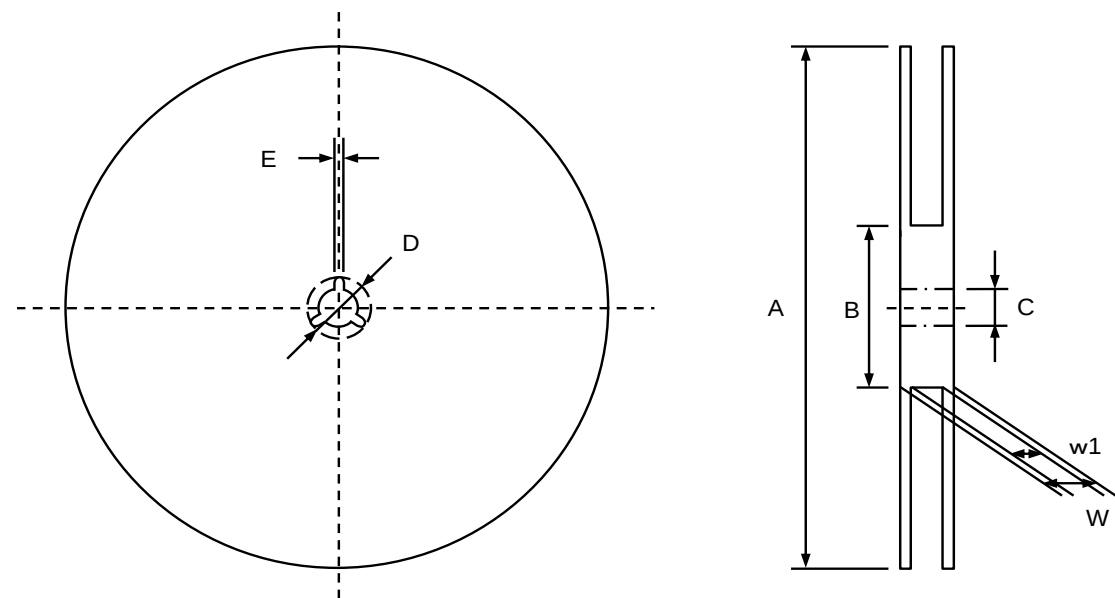
Product specifications in this catalog are as of Nov.17,2017,and are subject to change or obsolescence without notice.
Please consult the approval sheet before ordering.
Please read rating and !Cautions first.

■ Specifications and Test Methods

No.	Item		Specification	Test Method (Ref. Standard:JIS C 5101, IEC60384)														
1	Rated Voltage		Shown in Rated value.	The rated voltage is defined as the maximum voltage which may be applied continuously to the capacitor. When AC voltage is superimposed on DC voltage, V^{P-P} or V^{O-P} , whichever is larger, should be maintained within the rated voltage range.														
2	Appearance		No defects or abnormalities.	Visual inspection.														
3	Dimension		Shown in Rated value.	Using Measuring instrument of dimension.														
4	Voltage Proof		No defects or abnormalities.	Measurement Point : Between the terminations Test Voltage : 250% of the rated voltage Applied Time : 1s to 5s Charge/Discharge Current : 50mA max.														
5	Insulation Resistance(I.R.)		More than $50\Omega \cdot F$	Measurement Temperature: Room Temperature Measurement Point : Between the terminations Measurement Voltage : Rated Voltage Charging Time : 1min Charge/Discharge Current : 50mA max.														
6	Capacitance		Shown in Rated value.	Measurement Temperature: Room Temperature Measurement Frequency : $1.0\pm 0.1kHz$ Measurement Voltage : $0.5\pm 0.1V_{rms}$														
7	Q or Dissipation Factor (D.F.)		DF:0.1 max.	Measurement Temperature : Room Temperature Measurement Frequency : $1.0\pm 0.1kHz$ Measurement Voltage : $0.5\pm 0.1V_{rms}$														
8	Capacitance Temperature Characteristics	No bias	Within $\pm 15\%$ (-55°C to +85°C)	The capacitance change should be measured after 5 minutes at each specified temperature stage. Capacitance value as a reference is the value in "*" marked step. Measurement Voltage : Less than 1.0Vrms (Refer to the individual data sheet) <table><tr><th>Step</th><th>Temperature(°C)</th><th>Applying Voltage</th></tr><tr><td>1</td><td>Reference Temp. ± 2</td><td rowspan="5">No bias</td></tr><tr><td>2</td><td>Min. Operating Temp. ± 3</td></tr><tr><td>3 *</td><td>Reference Temp. ± 2</td></tr><tr><td>4</td><td>Max. Operating Temp. ± 3</td></tr><tr><td>5</td><td>Reference Temp. ± 2</td></tr></table> Pre-treatment : Perform a heat treatment at $150\pm 10^{\circ}C$ for 1hour and then let sit for 24 ± 2 hours at room temperature, then measure.	Step	Temperature(°C)	Applying Voltage	1	Reference Temp. ± 2	No bias	2	Min. Operating Temp. ± 3	3 *	Reference Temp. ± 2	4	Max. Operating Temp. ± 3	5	Reference Temp. ± 2
Step	Temperature(°C)	Applying Voltage																
1	Reference Temp. ± 2	No bias																
2	Min. Operating Temp. ± 3																	
3 *	Reference Temp. ± 2																	
4	Max. Operating Temp. ± 3																	
5	Reference Temp. ± 2																	

No.	Item		Specification	Test Method (Ref. Standard:JIS C 5101, IEC60384)
15	High Temperature High Humidity (Steady)	Appearance	No defects or abnormalities.	Solder the capacitor on the test substrate shown in Fig.3. Test Temperature : 40+/-2°C Test Humidity : 90%RH to 95%RH Test Time : 500+/-12h Test Voltage : Rated Voltage Charge/Discharge Current : 50mA max. Pre-treatment : Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure. Post-treatment : Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure.
		Capacitance Change	Within +/-12.5%	
		Q or D.F.	DF:0.2 max.	
		I.R.	More than 500MΩ or 12.5Ω·F (Whichever is smaller)	
16	Durability	Appearance	No defects or abnormalities.	Solder the capacitor on the test substrate shown in Fig.3. Test Temperature : Maximum Operating Temperature+/-3°C Test Time : 1000+/-12h Test Voltage : 150% of the rated voltage Charge/Discharge Current : 50mA max. Pre-treatment : Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure. Post-treatment : Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure.
		Capacitance Change	Within +/-12.5%	
		Q or D.F.	DF:0.2 max.	
		I.R.	More than 1000MΩ or 25Ω·F (Whichever is smaller)	

3. Dimensions of Reel (in mm)



Reel	A	B	C	D	E	W	w1
φ180mm Reel	φ180+0/-3.0	φ50 min.	φ13+/-0.5	φ21+/-0.8	2.0+/-0.5	16.5 max.	10+/-1.5
φ330mm Reel	φ330+/-2.0	φ50 min.	φ13+/-0.5	φ21+/-0.8	2.0+/-0.5	16.5 max.	10+/-1.5

