

Multilayer (Mono) Ceramic Capacitor

FEATURES

- Coating by epoxy resin, creates the excellent humidity resistance and prevents body from damaging during soldering and washing.
- Miniature size, wide capacitance, tape and reel packaging available for auto-placement.
- Industry standard size and various load spacing available.



SPECIFICATIONS

T.C	NPO/COG	X7R(B)	Y5V(Y/F)	Z5U(E)
Dielectric type	Stable Class I Dielectric		Stable Class II Dielectric	
Electrical properties	With negligible dependence of electrical properties on temperature、voltage、frequency and time	With predictable change of properties with temperature、voltage、frequency and time, this dielectric is ferroelectric and offers higher capacitance ranges than Class I.	With high twist dielectric constant and greater variation of properties with temperature and test conditions, very high capacitance per unit volume.	
Application	Use in circuits requiring stable performance	Use as blocking、coupling、By-passing discriminating element.	Suited for By-passing and coupling application such as store power and memory circuit	
Capacitance range	1pF~10nF	100pF~5uF	1nF~14.7uf	
Operating temperature	0±30PPm/c -55°C~+125°C	±15% -55°C~+125°C	+30%~ -80% -25°C~+85°C	+22%~ -56% -10°C~+85°C

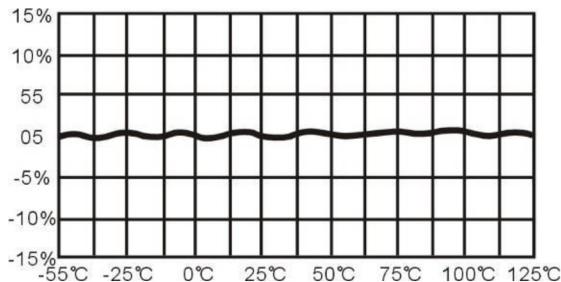
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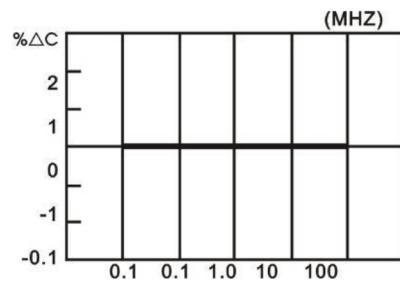
CAPACITANCE CHANGE VS TEMPERATURE CHARACTERISTIC ; VOLTAGE ; FREQUENCY PROFILES

➤ NPO

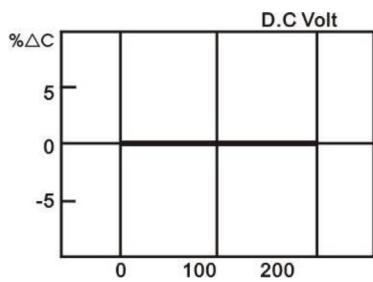
(1) Capacitance Change VS Temperature



(2) Frequency

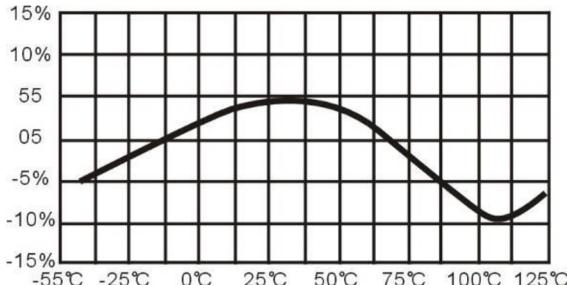


(3) DC voltage

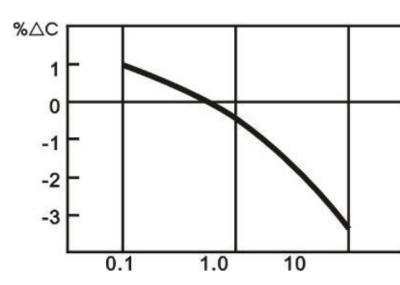


➤ X7R

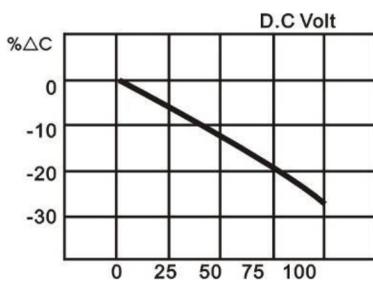
(1) Capacitance Change VS Temperature



(2) Frequency



(3) DC voltage

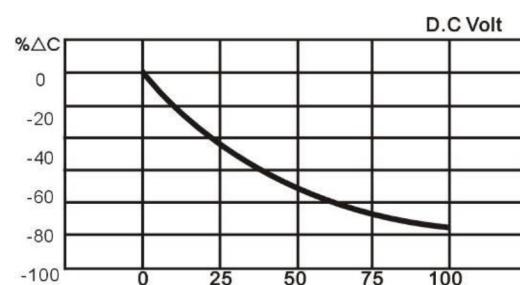


➤ Z5U

(1) Capacitance Change VS Temperature



(2) DC voltage



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LEADS MLCC (RADIAL, AXIAL)

➤ ELECTRICAL PROPERTIES STANDARD

Item	Test standard			
	NPO/CG/GH/RH/UJ/SL	X7R(B)	Z5U(E)	Y5V(Y/F)
Capacitance	±5%	±10%	+80-20%	±20%
Dissipation Factor	<0.15%	<3.5%	<5%	<7.5% (200nF) <10% (220~470nF) <15% (470~1000nF)
Insulation Resistance	<10nF IR<1000C0MΩ C>10nF R·C>100S	<25nF IR>25nF C>25nF R·C>100S	<25nF IR>25nF C>25nF R·C>100S	<25nF IR>25nF C>25nF R·C>100S
Withstanding Voltage	2.5 rated voltage	2.5 rated voltage	2.5 rated voltage	2.5 rated voltage
Test Condition				
Test Frequency	1 MHZ (C>1000PF 1KHz)	1KHz	1KHz	1KHz
Test Voltage of Cap. & D.F	1±0.2V	1±0.2V	0.3±0.2V	0.3±0.2V
Test Voltage of IR	Rated Voltage	Rated Voltage	Rated Voltage	Rated Voltage
Temperature	10~25°C	10~25°C	10~25°C	10~25°C
Humidity	<75%	<75%	<75%	<75%

➤ QUALITY ITEM & RELIABILITY INSPECTION

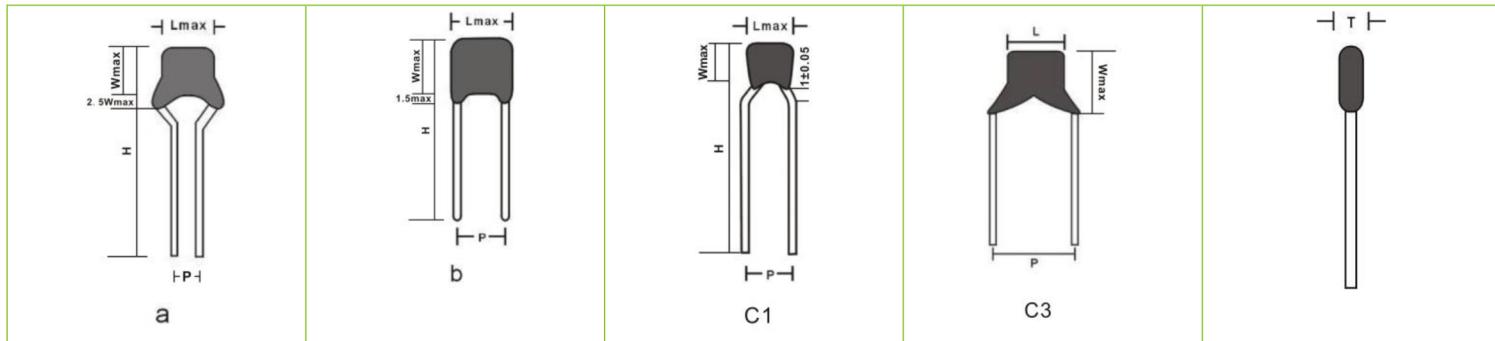
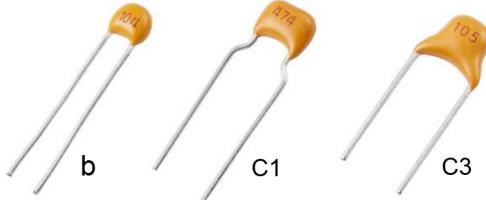
Item	Test Specifications		Test Methods																									
Solderability	Termination area shall be at least 75% covered with a new solder coating.		The lead wire of capacitor shall be dipped into a 25% methanol solution of rosin and then into molten solder of 235°C for 2±0.5seconds,in both cases the depth of dipping is up to about 2.5 to 3.0mm from the root of lead.																									
Resistance to soldering heat	There shall be no evidence of damage or flash over during the test and sign in focus. <table border="1" data-bbox="357 1515 928 1650"> <tr> <td>T.C</td> <td>△C/C<</td> </tr> <tr> <td>CG/CH/RH</td> <td>0.5% or 0.5Pf</td> </tr> <tr> <td>UJ/SL</td> <td>1% or 1pF</td> </tr> <tr> <td>B</td> <td>±10%</td> </tr> <tr> <td>Y(F)/E</td> <td>±20%</td> </tr> </table>	T.C	△C/C<	CG/CH/RH	0.5% or 0.5Pf	UJ/SL	1% or 1pF	B	±10%	Y(F)/E	±20%		The lead wire shall be immersed into the melted solder of 260°C±5°C.up to about 2.5 to 3.0mm from the main body for 5±0.5sec and the specified items shall be measured after leaving for 24±2hours															
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Life test	Appearance	There shall be no evidence of damage or flash over during the test and sign in focus	<table border="1" data-bbox="992 1694 1500 1897"> <tr> <td>Condition</td> <td>NPO</td> <td>X7R</td> <td>Y5V</td> <td>Z5U</td> </tr> <tr> <td>Temperature</td> <td colspan="2">+125°C</td> <td colspan="2">+85°C</td> </tr> <tr> <td>Time</td> <td colspan="4">T=1000h</td> </tr> <tr> <td>Voltage</td> <td colspan="4">V=1.5Vr</td> </tr> <tr> <td>Recovery time</td> <td colspan="4">24±1h</td> </tr> </table>	Condition	NPO	X7R	Y5V	Z5U	Temperature	+125°C		+85°C		Time	T=1000h				Voltage	V=1.5Vr				Recovery time	24±1h			
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	Capacitance change	NPO:<2%;X7R<20%; Y5V:<30%																										
	D.F	NPO:<0.3 X7R:<5% Y5V:<7%																										
	I.R	R.C<258																										

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LEADS MLCC (RADIAL, AXIAL)

➤ SIZE CODE, CAPACITANCE AND VOLTAGE



Size code	shape	Dimensions(mm)				Voltage	Capacitance(PF)		
		$P(\pm 0.5)$	L_{max}	W_{max}	T_{max}		COG(NPO)	X7R	Y5V(Z5U)
0805	b	2.54	4.2	3.8	3.0	25V	OR5~103	101~105	103~475
	C1	5.08		5.0	3.0	50V	OR5~103	101~474	103~105
	C3	5.08	4.2			100V	OR5~103	101~104	103~104
1206	a	2.54	5.0	4.5	3.5	25V	OR5~104	101~225	103~106
	b	3.5				50V	OR5~473	101~225	103~106
	C1	5.08				100V	OR5~473	101~105	103~155
1210	a	2.54	5.0	4.5	3.5	25V	OR5~104	101~106	103~106
	b	3.5				50V	OR5~473	101~475	103~106
	C1	5.08				100V	OR5~473	101~105	103~155
1812	b	5.08	7.0	6.0	4.0	25V	OR5~104	101~106	103~106
						50V	OR5~104	101~106	103~106
						100V	OR5~473	101~105	103~155
2225	b	5.5	10	9	4.5	25V	OR5~104	101~106	103~106
						50V	OR5~104	101~106	103~106
						100V	OR5~473	101~105	103~155
3035	b	7.5	12	10	4.5	25V	OR5~104	101~106	103~106
						50V	OR5~104	101~106	103~106
						100V	OR5~473	101~105	103~155

*Notice 1: Normal length of lead is 10.0mm(± 1)& it can be adjusted between 3.0~25mm by customer request.

Notice 2: The diameter of lead is $\phi 0.5 \pm 0.05$ mm

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AXIAL LASER MLCC

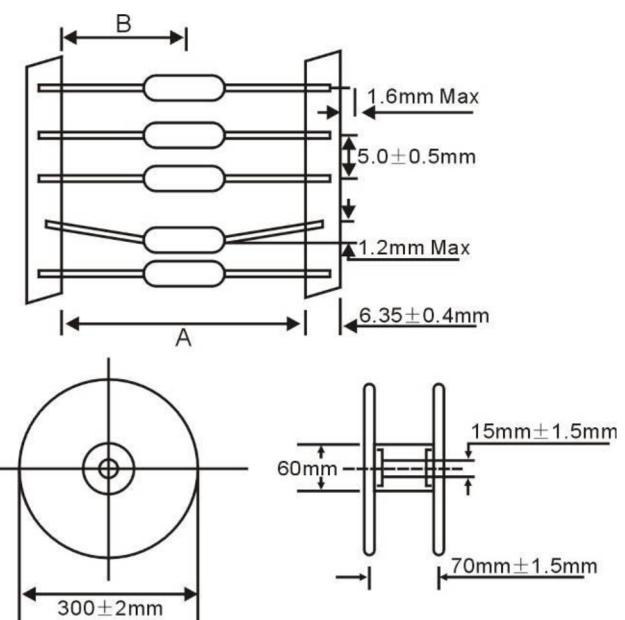
➤ SIZE CODE, CAPACITANCE AND VOLTAGE

Size code	Dimensions(mm)				voltag e	Capacitance ranges			
	L max	D max	F (±0.6)	d (±0.05)		COG (NPO)	X7R	Y5V (Z5U)	
15	3.8	2.5	5.08	10.0	0.45	25V	OR5~102	101~333	222~224
						50V	OR5~821	101~223	222~154
						100V	OR5~561	101~472	
16	5.08	2.5	5.08	10.0	0.45	25V	OR5~332	331~104	103~105
						50V	OR5~222	331~473	103~684
						100V	OR5~102	331~223	
17	4.30	2.5	5.08	10.0	0.45	25V	OR5~332	331~104	103~105
						50V	OR5~222	331~473	103~684
						100V	OR5~102	331~223	
19	7.50	3.0	7.50	10.0	0.45	25V	OR5~472	102~224	103~125
						50V	OR5~392	102~104	103~105
						100V	OR5~152	102~683	
20	5.10	3.0	7.50	10.0	0.45	25V	OR5~472	102~224	103~125
						50V	OR5~392	102~104	103~105
						100V	OR5~152	102~683	

➤ PACKAGING STYLE

TAPE AND REEL

Tape style	A	B
Tape width:52.4mm	52.4±1.5mm	26.2±0.76mm



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