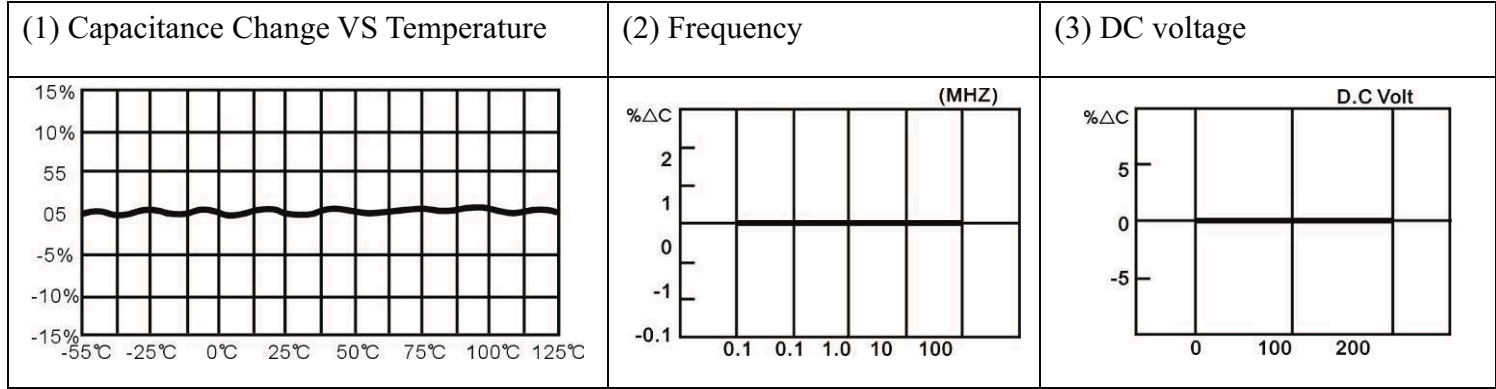




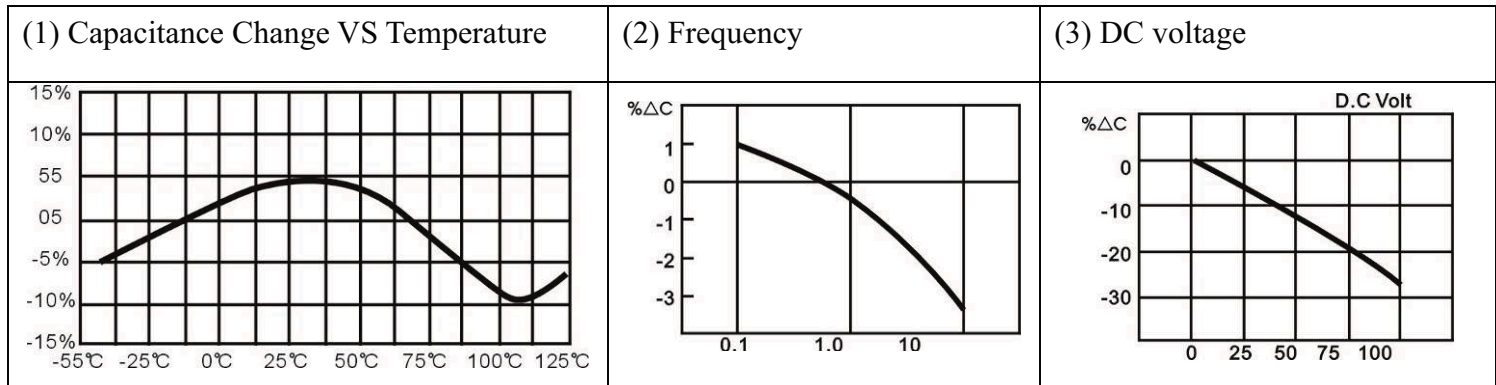
& 7 6 H U L H V \$ [L D O 0 X O W L O D \ I \$ D F O L 2 W R U & H U D P L F

Capacitance Change VS Temperature Characteristic ; Voltage ; Frequency Profiles

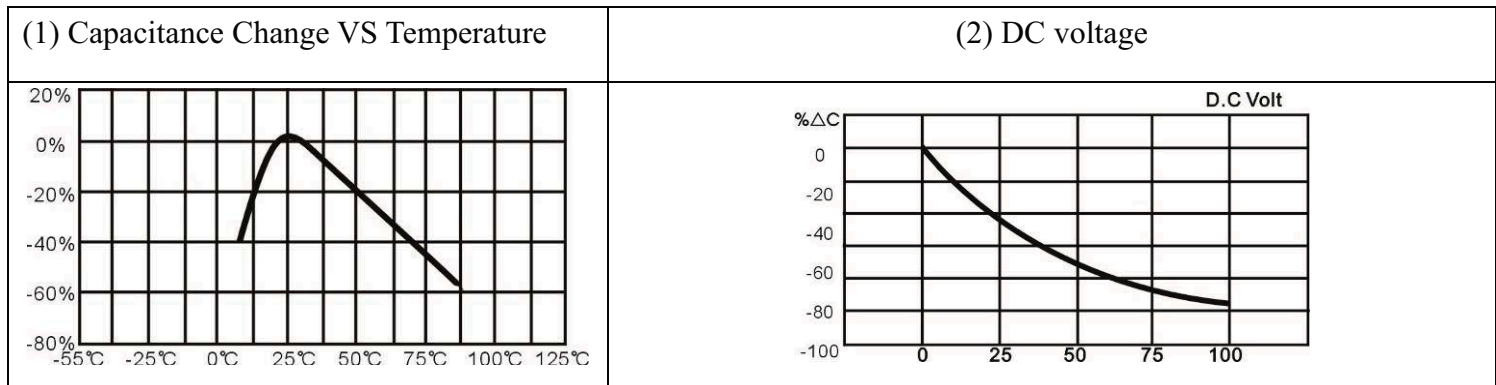
◆ NPO



◆ X7R



◆ Z5U





& 7 6 H U L H V \$ [L D O 0 X O W L O D \ I S U F O L 2 W R U & H U D P L F

Leaded Multilayer Ceramic Capacitors (Axial Lead, Radial Lead)

◆ 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	<25nF	<25nF	<25nF
	IR<1000C0M Ω	IR>25nF	IR>25nF	IR>25nF
	C>10nF	C>25nF	C>25nF	C>25nF
	R • C>100S	R • C>100S	R • C>100S	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%



& 7 6 H U L H V \$ [L D O 0 X O W L O D \ I S D F O L 2 W R U & H U D P L F

Leaded Multilayer Ceramic Capacitors (Axial Lead, Radial Lead)

◆ 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 a capacitor shall be dipped into a 25% methanol solution of rosin and then into molten solder at 235°C for 2 ± 0.5 seconds, 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.		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 ± 0.5 sec and the specified items shall be measured after leaving for 24 ± 2 hours																													
	T.C	ΔC/C <																														
	CG/CH/RH	0.5% or 0.5Pf																														
	UJ/SL	1% or 1pF																														
	B	± 10%																														
	Y(F)/E	± 20%																														
Life test	Appearance	There shall be no evidence of damage or flash over during the test and sign in focus	<table border="1"> <thead> <tr> <th>Condition</th> <th>NPO</th> <th>X7R</th> <th>Y5V</th> <th>Z5U</th> </tr> </thead> <tbody> <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> </tbody> </table>					Condition	NPO	X7R	Y5V	Z5U	Temperature	+125°C		+85°C		Time	T=1000h				Voltage	V=1.5Vr				Recovery time	24 ± 1h			
			Condition	NPO	X7R	Y5V	Z5U																									
			Temperature	+125°C		+85°C																										
			Time	T=1000h																												
			Voltage	V=1.5Vr																												
Recovery time	24 ± 1h																															
Capacitance change	NPO:<2%;X7R<20%; Y5V:<30%																															
D.F	NPO:<0.3 X7R:<5% Y5V:<7%																															
I.R	R.C<258																															

& 7 6 H U L H V \$ [L D O O X O W L O D \ H \$ U F O L 2 W R U & H U D P L F

Axial Lead Multilayer Ceramic Capacitors

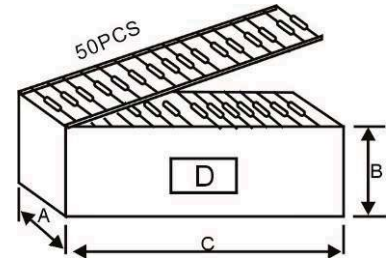
◆ Size Code, Capacitance and Voltage

Size code	Dimensions(mm)				voltage	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	
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	

◆ Packaging style

Ammo Taped (Standard Package)

Tape style	A	B	C	D
52.4mm	81(±5)mm	72(±5)mm	258(±5)mm	Lable
26mm	50(±5)mm	110(±5)mm	258(±5)mm	



Packaging quantity

Size code	Tape and reel	Ammo package	Bulk package
15	5000	5000	1000(500)
17	5000	5000	1000(500)

*Tape and Reel Package is available on request

How to order for CT42 axial MLCC

<u>CT4</u>	<u>B</u>	<u>104</u>	<u>K</u>	<u>0050</u>	<u>B0b2</u>	<u>B</u>	<u>000</u>
<u>Type</u>	<u>Material Code</u>	<u>Capacitance Code</u>	<u>Tolerance</u>	<u>Rated Voltage</u>	<u>Size Code</u>	<u>Package Code</u>	<u>Suffix Indicate Customer Special Requirement</u>
CT4 CT42	For ceramic cap B: X7R E: Z5U Z: Y5V U: Y5U P: Y5P V: Z5V X: X5R Y: Y5T D: N4700 N: NPO S: SL T: X7T	pF Code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow) 106 = 10uF 105 = 1uF 104 = 0.1uF 100= 10pF 470= 47pF 0R1= 0.1pF R47=0.47pF	C: +/-0.25pF D: +/-0.5pF F: +/-1% G: +/-2% H: +/-2.5% J: +/-5% K: +/-10% L: +/-15% M: +/-20% Z: +80-20% V: +20-10%	0050: 50VDC 0100: 100VDC 0200: 200VDC 0500: 500VDC 1000: 1KVDC 2000: 2KVDC	B0b2: inside chip 0805, b shape, 2.54mm <u>CT42 Axial lead MLCC</u> 0017: size code 17 <u>CT4 Radial MLCC Size Code</u> B0b2: inside chip 0805, b shape, 2.54mm	B: Bulk A: Ammo Taped R: Tape & Reel	000: Indicating Standard If for cut leads or long leads: 000: mean standard LL 035: cut leads to 3.5mm 040: cut leads to 4mm 250: 25mm long leads

↓

CT4 Size Code (Inside Chip, Lead Shape, Pitch Size)		
Eg. : B0b2 mean inside chip 0805 size, B shape Pitch 2.54mm		
<u>B</u>	<u>0b</u>	<u>2</u>
A: 0603 chip inside	0a: a shape	2: 2.54mm Pitch
B: 0805 chip inside	0b: b shape	5: 5.08mm pitch
C: 1206 chip inside	C1: C1 shape	3: 3.5mm pitch
D: 1210 chip inside	C3: C3 shape	
E: 1808 chip inside		
F: 1812 chip inside		
G: 2220 chip inside		
H: 2225 chip inside		
I: 3035 chip inside		