

Multilayer Ceramic Chip Capacitors [High Capacitance MLCC-X7R,X6S,X5R,Y5V]

HCC Series



◆ Features.

- ❑ Surface mount suited for wave and reflow soldering
- ❑ High reliability and no polarity
- ❑ Small size and high capacitance value
- ❑ Excellent in high frequency characteristic
- ❑ RoHS compliant

◆ Application

- ❑ Ideal for smoothing and decoupling circuits
- ❑ Suitable for DC-DC converter, personal computer and peripherals, telecommunication and general electronic equipment

◆ Summary of Specification

X7R Dielectric Characteristic

Operation Temperature : -55~+125
 Temperature Coefficient : $\pm 15\%$ under -55~+125 (EIA Class)
 Capacitance Range : 1.0uF to 10uF
 Dissipation Factor : Please see HEC specification data sheet
 Insulation Resistance : $10G\ \Omega$ or $500/C\ \Omega$ whichever is smaller
 Aging : 2.5 % per decade hr , typical
 Dielectric Strength : 250% Rated Voltage

X6S Dielectric Characteristic

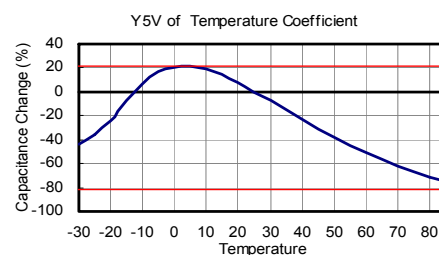
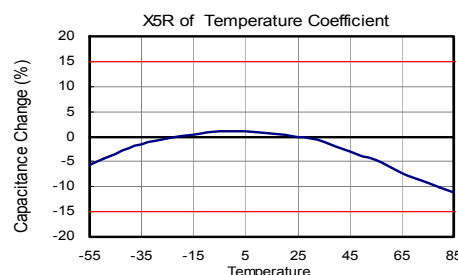
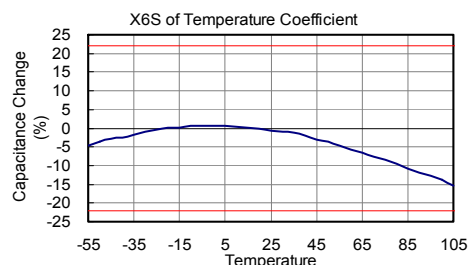
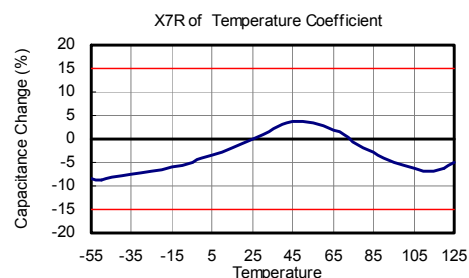
Operation Temperature : -55~+105
 Temperature Coefficient : $\pm 22\%$ under -55~+105 (EIA Class)
 Capacitance Range : 1.0uF to 22uF
 Dissipation Factor : Please see HEC specification data sheet
 Insulation Resistance : $10G\ \Omega$ or $500/C\ \Omega$ whichever is smaller
 Aging : 2.5 % per decade hr , typical
 Dielectric Strength : 250% Rated Voltage

X5R Dielectric Characteristic

Operation Temperature : -55~+85
 Temperature Coefficient : $\pm 15\%$ under -55~+85 (EIA Class)
 Capacitance Range : 1.0uF to 100uF
 Dissipation Factor : Please see HEC specification data sheet
 Insulation Resistance : $10G\ \Omega$ or $500/C\ \Omega$ whichever is smaller
 Aging : 2.5 % per decade hr , typical
 Dielectric Strength : 250% Rated Voltage

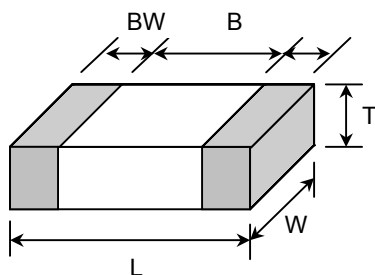
Y5V Dielectric Characteristic

Operation Temperature : -30~+85
 Temperature Coefficient : +22/ -82 % , -30~+85 (EIA Class)
 Capacitance Range : 1.0uF to 47uF
 Dissipation Factor : Please see HEC specification data sheet.
 Insulation Resistance : $10G\ \Omega$ or $500/C\ \Omega$ whichever is smaller
 Aging : 7.0 % per decade hr , typical
 Dielectric Strength : 250% Rated Voltage



Unit : mm [inches]

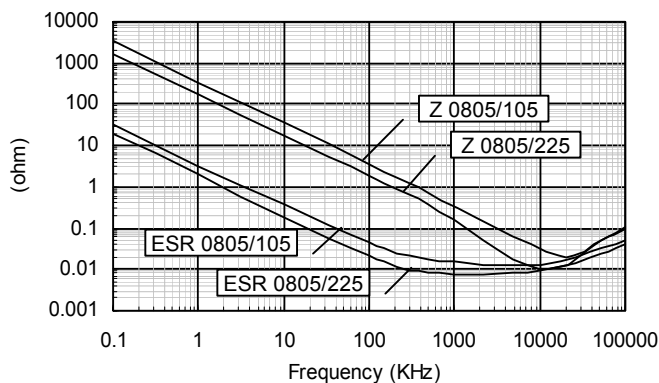
Dimension



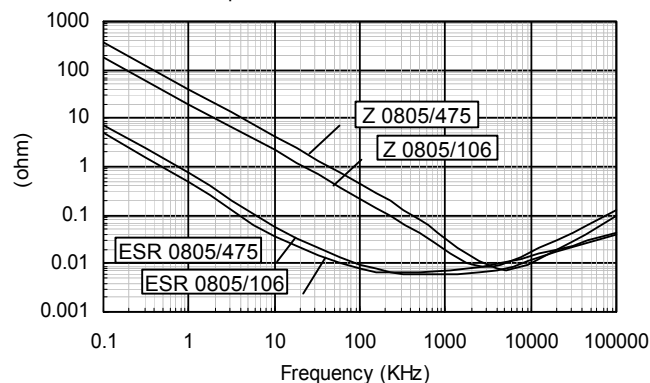
TYPE	L	W	T (max)	B (min)	BW (min)
0402	1.00±0.05 [.039±.002]	0.50±0.05 [.020±.002]	0.55 [.022]	0.30 [.012]	0.15 [.006]
0603	1.60±0.10 [.063±.004]	0.80±0.10 [.031±.004]	0.90 [.035]	0.40 [.016]	0.15 [.006]
0805	2.00±0.20 [.079±.012]	1.25±0.20 [.049±.008]	1.45 [.057]	0.70 [.028]	0.20 [.008]
1206	3.20±0.30 [.126±.012]	1.60±0.20 [.126±.012]	1.80 [.071]	1.50 [.059]	0.30 [.012]
1210	3.20±0.30 [.126±.012]	2.50±0.20 [.098±.008]	2.60 [.102]	1.60 [.063]	0.30 [.012]
1812	4.60±0.3 [.181±.012]	3.20±0.3 [.126±.012]	3.00 [.118]	2.50 [.098]	0.30 [.012]
2220	5.7±0.40 [.220±.016]	5.00±0.40 [.197±.016]	3.00 [.118]	3.50 [.137]	0.30 [.012]

Characteristic

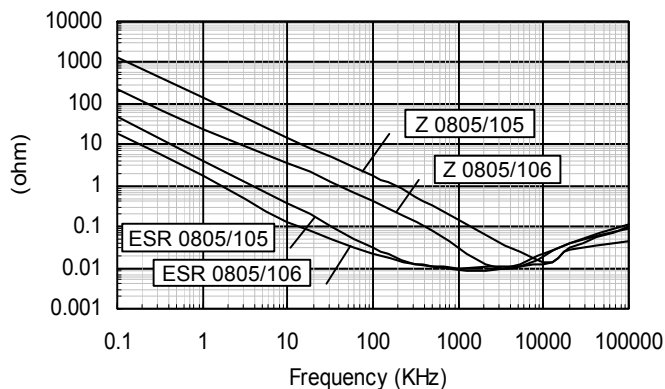
X7R(X) Series Impedance & ESR Characteristic



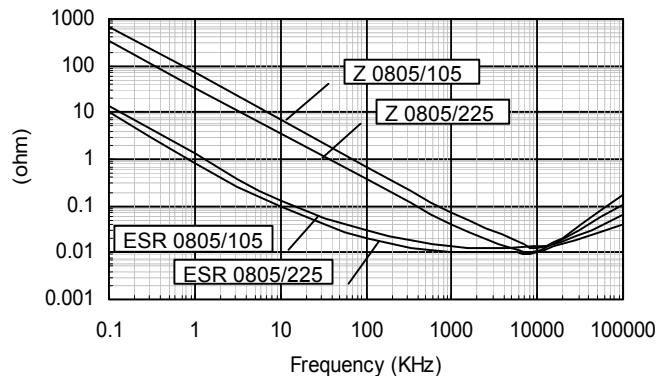
X5R(B) Series Impedance & ESR Characteristic



Y5V(Y) Series Impedance & ESR Characteristic



X6S(S) Series Impadance/ESR & Frequency



How To Order

C

0805

B

106

M

010

T

Product Code	Chip Size	Dielectric	Capacitance Unit : pF	Tolerance	Rated Voltage	Packaging
C: MLCC (Multilayer Ceramic Chip of Capacitor)	Ex.: 1206 : 3.2×1.6 mm 1210 : 3.2×2.5 mm	Ex.: X:X7R S:X6S B:X5R Y:Y5V	Ex.: 105:10×10 ⁵ 106:10×10 ⁶ 226:22×10 ⁶	Ex.: J : +/- 5% K : +/- 10% M : +/- 20% Z : +80/-20%	Ex.: 004: 4Vdc 007: 6.3Vdc 010: 10Vdc 016: 16Vdc 025: 25Vdc 035: 35Vdc 050: 50Vdc	T: Taping & Reel B: Bulk

◆ Capacitance Range

X7R (X) Series																			
Size	0603			0805				1206				1210				1812	2220		
Code	VDC	6.3V	10V	16V	6.3V	10V	16V	25V	10V	16V	25V	35V	50V	10V	16V	25V	35V	35V	35V
105	1uF	B	B	B		D	D	D		E	E	E	E		E	E	E	F	F
155	1.5uF														E	E	E	F	F
225	2.2uF	B	B	B		D	D	D		E	E	E			E	E/F	F	F	F
335	3.3uF					D	D			E	E								F
475	4.7uF					D	D			E	E				E	F	F		F
685	6.8uF																		
106	10uF									E				E	E	F	G		G

X6S (S) Series														
Size	0603		0805			1206				1210				
Code	VDC	10V	25V	10V	16V	25V	16V	25V	35V	50V	10V	16V	25V	50V
105	1uF		B			D				E	E			F
225	2.2uF			D	D	D								F
475	4.7uF			D	D	D	E	E				F	F	
106	10uF	B		D			E	E			F	F	G	
226	22uF										G	G	G	
476	47uF													

X5R (B) Series																										
Size	0402		0603				0805				1206						1210									
Code	VDC	6.3V	10V	4V	6.3V	10V	16V	25V	4V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	35V	50V	6.3V	10V	16V	25V	35V		
105	1uF	O	O		B	B	B	B			D	D	D			E	E	E	E						F	
155	1.5uF															E	E	E	E							F
225	2.2uF				B	B	B				D	D	D			E	E	E	E				E	E/F	F	
335	3.3uF										D	D	D			E	E	E	E							F
475	4.7uF				B	B					D	D	D			E	E	E	E				F	F	F	F
106	10uF			B	B						D	D	D			E	E	E	E				F	F	G	G
226	22uF								D	D						E	E	E			G	G	G	G		
476	47uF															E	E	E			G	G	G			
107	100uF																				G					

Y5V (Y) Series																										
Size	0402		0603				0805					1206					1210					1812				
Code	VDC	6.3V	10V	6.3	10V	16V	25V	6.3V	10V	16V	25V	50V	10V	16V	25V	35V	50V	6.3V	10V	16V	25V	35V	50V	35V	50V	
105	1uF	O	O		B	B	B			B	B	D		B	D	D	D									
225	2.2uF			B	B	B			D	B	B	D		B	D	D										
475	4.7uF			B	B			D	D	D	D			D	D							F	F	F	F	F
106	10uF							D	D	D			D	E	E						F	F	F	F	F	F
226	22uF												D	E							F	F			F	
476	47uF																				F	F			F	
107	100uF																				G					

Symbol Code	S	O	A	B	C	D	E	F	G	H
Thickness(mm)	0.3±0.03	0.5±0.05	0.6±0.1	0.8±0.1	1.0±0.1	1.25±0.15	1.6±0.2	2.0±0.2	2.4±0.2	2.8±0.2

■ Other dimensions, capacitance values and voltages rating are available. Please contact HEC.