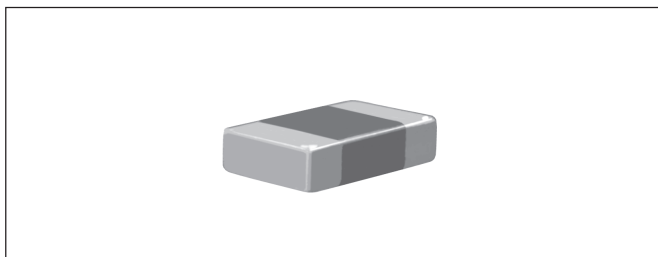


Multilayer Ceramic Chip Capacitors



FEATURES

- General purpose dielectric.
- Excellent aging characteristics.
- Ideal for decoupling and filtering.
- Wide range of case sizes, voltage ratings and capacitance values.

GENERAL SPECIFICATIONS

NOTE: Electrical characteristics @ + 25°C unless otherwise specified.

Capacitance Range: 120pF to 1.0μF.

Dissipation Factor (DF):

≤ 25V ratings: 3.5% maximum @ 1.0 Vrms and 1kHz.
50V, 100V ratings: 2.5% maximum @ 1.0 Vrms and 1kHz.

Temperature Coefficient of Capacitance (TCC):

X7R: ± 15% from - 55°C to + 125°C, with 0 Vdc applied.
X7S: ± 22% from - 55°C to + 125°C, with 0 Vdc applied.

Insulation Resistance (IR):

@ + 25°C and rated voltage 100,000 Megohms minimum or 1000 ohm-farads, whichever is less.

@ + 125°C and rated voltage 10,000 Megohms minimum or 100 ohm-farads, whichever is less.

Dielectric Withstanding Voltage (DWV):

250% rated voltage for 5 ± 1 seconds, 50 milliamps current maximum.

Aging Rate: 1% maximum per decade.

ORDERING INFORMATION

VJ	0805	Y	102	K	X	A	A	T
PRODUCT SERIES	CASE SIZE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING	MARKING	PACKAGING ¹
VJ = MLCC	0402 0603 0805 1206 1210 1808 1812 1825 2220 2225 3640 ²	Y = X7R S = X7S	Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. Example: 102 = 1000pF.	J = ± 5% K = ± 10% M = ± 20%	X = Nickel barrier with 100% tin plated finish F = Palladium silver	J = 16V X = 25V A = 50V B = 100V See page 16 for higher voltage ratings	A = Unmarked	T = 7" Reel, plastic tape C = 7" Reel, paper tape R = 11 1/4" Reel, plastic tape P = 11 1/4" Reel, paper tape B = Bulk NOTE: 0402 and 0603 available in paper tape only

¹See page 57 for cassette case packaged capacitors.

²Please contact factory for special considerations regarding 3640 - size components.

X7R/X7S DIELECTRIC																					
STYLE		VJ0402				VJ0603				VJ0805				VJ1206				VJ1210			
E.I.A. TYPE		0402				0603				0805				1206				1210			
VOLTAGE (Vdc)		16	25	50	100	16	25	50	100	16	25	50	100	16	25	50	100	16	25	50	100
Capacitance Code	Capacitance																				
101	100 pF																				
121	120 pF																				
151	150 pF																				
181	180 pF																				
221	220 pF																				
271	270 pF																				
331	330 pF																				
391	390 pF																				
471	470 pF																				
561	560 pF																				
681	680 pF																				
821	820 pF																				
102	1000 pF																				
122	1200 pF																				
152	1500 pF																				
182	1800 pF																				
222	2200 pF																				
272	2700 pF																				
332	3300 pF																				
392	3900 pF																				
472	4700 pF																				
562	5600 pF																				
682	6800 pF																				
822	8200 pF																				
103	.010 μF																				
123	.012 μF																				
153	.015 μF																				
183	.018 μF																				
223	.022 μF																				
273	.027 μF																				
333	.033 μF																				
393	.039 μF																				
473	.047 μF																				
563	.056 μF																				
683	.068 μF																				
823	.082 μF																				
104	.10 μF																				
124	.12 μF																				
154	.15 μF																				
184	.18 μF																				
224	.22 μF																				
274	.27 μF																				
334	.33 μF																				
394	.39 μF																				
474	.47 μF																				
564	.56 μF																				
684	.68 μF																				
824	.82 μF																				
105	1.0 μF																				
125	1.2 μF																				
155	1.5 μF																				
185	1.8 μF																				
225	2.2 μF																				
275	2.7 μF																				
335	3.3 μF																				
395	3.9 μF																				
475	4.7 μF																				
565	5.6 μF																				
685	6.8 μF																				

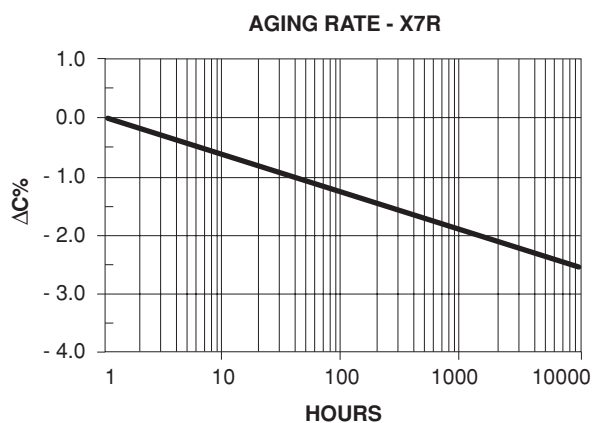
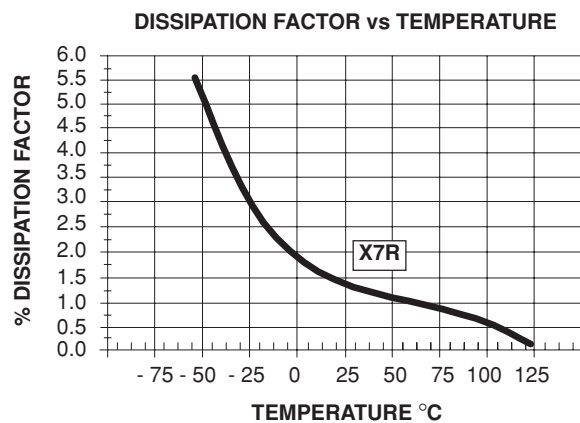
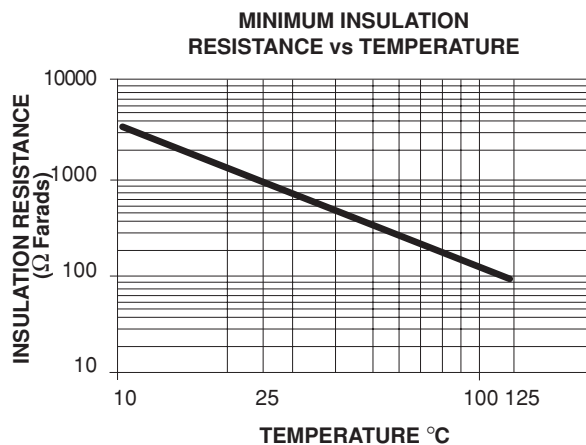
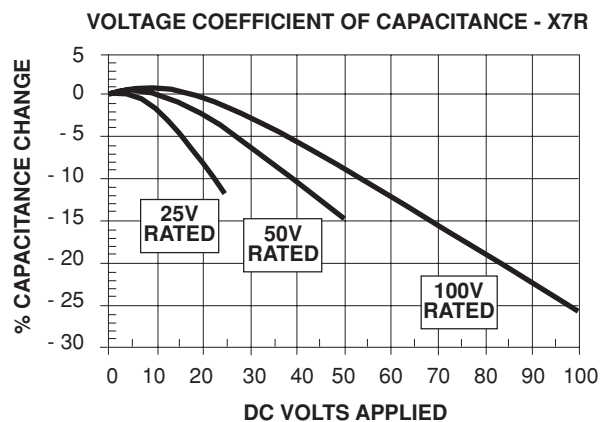
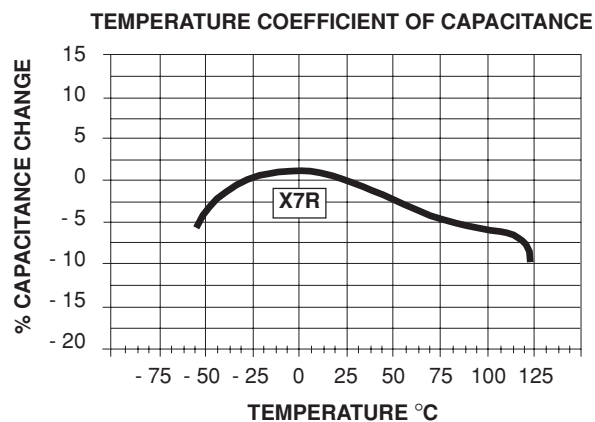
 - X7S



X7R DIELECTRIC																		
STYLE		VJ1808			VJ1812**			VJ1825*			VJ2220*		VJ2225*			VJ3640*		
E.I.A. TYPE		—			1812			1825			—		—			—		
VOLTAGE (Vdc)		—	50	100	25	50	100	25	50	100	50	100	25	50	100	25	50	100
Capacitance Code	Capacitance																	
101	100 pF																	
121	120 pF																	
151	150 pF																	
181	180 pF																	
221	220 pF																	
271	270 pF																	
331	330 pF																	
391	390 pF																	
471	470 pF																	
561	560 pF																	
681	680 pF																	
821	820 pF																	
102	1000 pF																	
122	1200 pF																	
152	1500 pF																	
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562	5600 pF																	
682	6800 pF																	
822	8200 pF																	
103	.010 μF																	
123	.012 μF																	
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125	1.2 μF																	
155	1.5 μF																	
185	1.8 μF																	
225	2.2 μF																	
275	2.7 μF																	
335	3.3 μF																	
395	3.9 μF																	
475	4.7 μF																	
565	5.6 μF																	
685	6.8 μF																	

*See page 61 for soldering recommendations.

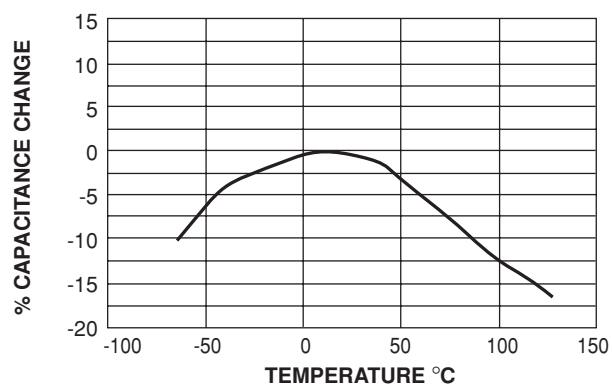
X7R DIELECTRIC - TYPICAL PARAMETERS



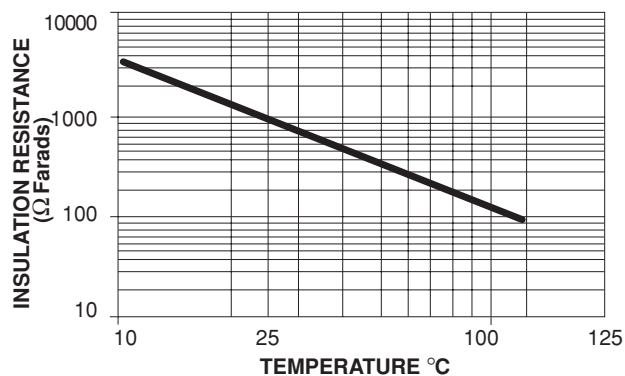


X7S DIELECTRIC - TYPICAL PARAMETERS

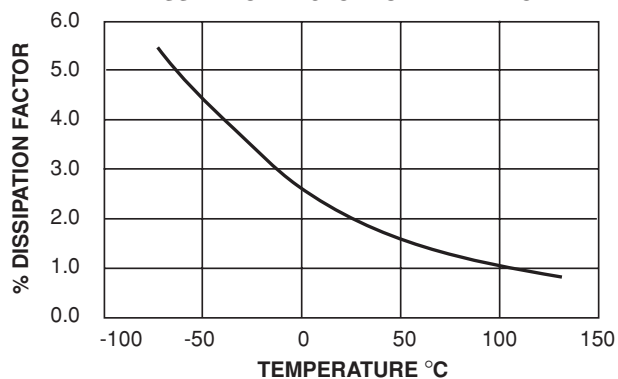
TEMPERATURE COEFFICIENT OF CAPACITANCE



MINIMUM INSULATION RESISTANCE vs TEMPERATURE



DISSIPATION FACTOR vs TEMPERATURE



AGING RATE - X7S

