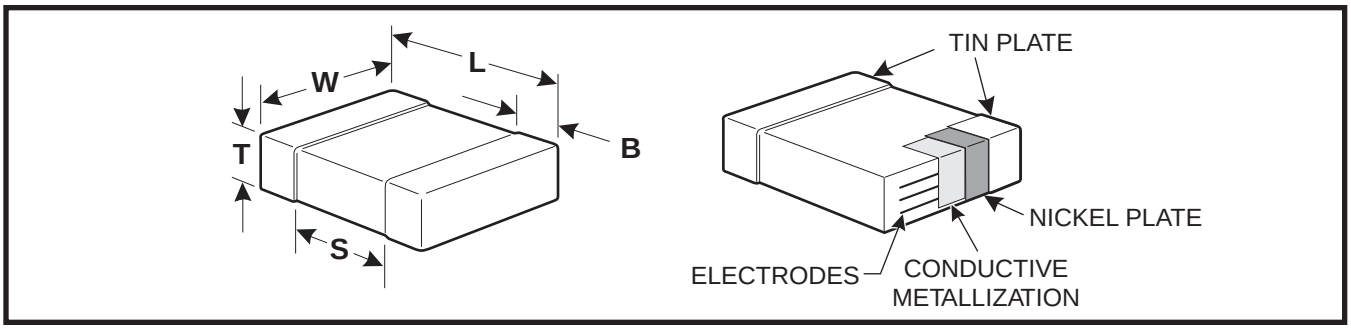
FEATURES

- C0G (NP0), X7R, X5R, Z5U and Y5V Dielectrics
- 10, 16, 25, 50, 100 and 200 Volts
- Standard End Metalization: Tin-plate over nickel barrier
- Available Capacitance Tolerances: ±0.10 pF; ±0.25 pF; ±0.5 pF; ±1%; ±2%; ±5%; ±10%; ±20%; and +80%-20%
- Tape and reel packaging per EIA481-1. (See page 59 for specific tape and reel information.) Bulk Cassette packaging (0402, 0603, 0805 only) per IEC60286-6 and EIAJ 7201.

CAPACITOR OUTLINE DRAWINGS



DIMENSIONS—MILLIMETERS AND (INCHES)

EIA SIZE CODE	METRIC SIZE CODE (Ref only)	L # LENGTH	W # WIDTH	T (EIA) # THICKNESS MAX.	B BANDWIDTH	S MIN. SEPARATION	MOUNTING TECHNIQUE
0402*	1005	1.0 (.04) ± .05(.002)	0.5 (.02) ± .05 (.002)	0.55 (.022)	0.20 (0.008)-0.40 (0.016)	0.3 (.012)	Solder Reflow
0603*	1608	1.6 (.063) ± 0.15 (.006)	0.8 (.032) ± 0.15 (.006)	0.9 (.035)	0.35 (.014) ±0.15 (.006)	0.7 (.028)	Solder Wave † or Solder Reflow
0805*	2012	2.0 (.079) ± 0.2 (.008)	1.25 (.049) ± 0.2 (.008)	1.3 (.051)	0.5 (.02) ±.25 (.010)	0.75 (.030)	
1206*	3216	3.2 (.126) ± 0.2 (.008)	1.6 (.063) ± 0.2 (.008)	1.5 (.059)	0.5 (.02) ±.25 (.010)	N/A	
1210*	3225	3.2 (.126) ± 0.2 (.008)	2.5 (.098) ± 0.2 (.008)	1.7 (.067)	0.5 (.02) ±.25 (.010)	N/A	
1812	4532	4.5 (.177) ± 0.3 (.012)	3.2 (.126) ± 0.3 (.012)	1.7 (.067)	0.6 (.024) ±.35 (.014)	N/A	Solder Reflow
1825*	4564	4.5 (.177) ± 0.3 (.012)	6.4 (.252) ± 0.4 (.016)	1.7 (.067)	0.6 (.024) ±.35 (.014)	N/A	
2220	5650	5.6 (.220) ± 0.4 (.016)	5.0 (.197) ± 0.4 (.016)	1.8 (.071)	0.6 (.024) ±.35 (.014)	N/A	
2225	5664	5.6 (.220) ± 0.4 (.016)	6.3 (.248) ± 0.4 (.016)	2.0 (.079)	0.6 (.024) ±.35 (.014)	N/A	

* Note: Indicates EIA Preferred Case Sizes (Tightened tolerances apply for 0402, 0603, and 0805 packaged in bulk cassette, see page 63.)
#Note: These thicknesses are EIA maximums. Most chips are considerably thinner. Consult factory for details. Also, some extended values may be slightly thicker than EIA maximums.
† For extended value 1210 case size – solder reflow only.

CAPACITOR ORDERING INFORMATION (Standard Chips - For Military see page 53)

C 0805 C 103 K 5 R A C*

CERAMIC

SIZE CODE

SPECIFICATION
C - Standard

CAPACITANCE CODE
Expressed in Picofarads (pF)
First two digits represent significant figures.
Third digit specifies number of zeros. (Use 9 for 1.0 through 9.9pF. Use 8 for 0.5 through 0.99pF)
(Example: 2.2pF = 229 or 0.50 pF = 508)

CAPACITANCE TOLERANCE

B – ±0.10pF	J – ±5%
C – ±0.25pF	K – ±10%
D – ±0.5pF	M – ±20%
F – ±1%	P – (GMV) – special order only
G – ±2%	Z – +80%, -20%

VOLTAGE

1 - 100V	3 - 25V
2 - 200V	4 - 16V
5 - 50V	8 - 10V
	9 - 6.3V

TEMPERATURE CHARACTERISTIC
Designated by Capacitance Change Over Temperature Range
G – C0G (NP0) (±30 PPM/°C)
R – X7R (±15%) (-55°C + 125°C)
P– X5R (±15%) (-55°C + 85°C)
U – Z5U (+22%, -56%) (+10°C + 85°C)
V – Y5V (+22%, -82%) (-30°C + 85°C)

FAILURE RATE LEVEL
A- Not Applicable

END METALLIZATION
C-Standard
(Tin-plated nickel barrier)

*** Part Number Example: C0805C103K5RAC (14 digits - no spaces)**

X7R CAPACITANCE RANGE – 0402, 0603, 0805, 1206

CAP.	CAP.	C0402*					C0603*							C0805*							C1206*						
PF	TOL.	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	100V	200V	6.3V	10V	16V	25V	50V	100V	200V	6.3V	10V	16V	25V	50V	100V	200V
150	K,M,J	151	151	151	151	151																					
180	K,M,J	181	181	181	181	181	181	181	181	181	181	181	181														
220	K,M,J	221	221	221	221	221	221	221	221	221	221	221	221	221	221	221	221	221	221	221							
270	K,M,J	271	271	271	271	271	271	271	271	271	271	271	271	271	271	271	271	271	271	271							
330	K,M,J	331	331	331	331	331	331	331	331	331	331	331	331	331	331	331	331	331	331	331							
390	K,M,J	391	391	391	391	391	391	391	391	391	391	391	391	391	391	391	391	391	391	391							
470	K,M,J	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471	471							
560	K,M,J	561	561	561	561	561	561	561	561	561	561	561	561	561	561	561	561	561	561	561							
680	K,M,J	681	681	681	681	681	681	681	681	681	681	681	681	681	681	681	681	681	681	681							
820	K,M,J	821	821	821	821	821	821	821	821	821	821	821	821	821	821	821	821	821	821	821							
1000	K,M,J	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102
1200	K,M,J	122	122	122	122	122	122	122	122	122	122	122		122	122	122	122	122	122	122	122	122	122	122	122	122	122
1500	K,M,J	152	152	152	152	152	152	152	152	152	152	152		152	152	152	152	152	152	152	152	152	152	152	152	152	152
1800	K,M,J	182	182	182	182		182	182	182	182	182	182		182	182	182	182	182	182	182	182	182	182	182	182	182	182
2200	K,M,J	222	222	222	222		222	222	222	222	222	222		222	222	222	222	222	222	222	222	222	222	222	222	222	222
2700	K,M,J	272	272	272	272		272	272	272	272	272	272		272	272	272	272	272	272	272	272	272	272	272	272	272	272
3300	K,M,J	332	332	332	332		332	332	332	332	332	332		332	332	332	332	332	332	332	332	332	332	332	332	332	332
3900	K,M,J	392	392	392	392		392	392	392	392	392	392		392	392	392	392	392	392	392	392	392	392	392	392	392	392
4700	K,M,J	472	472	472	472		472	472	472	472	472	472		472	472	472	472	472	472	472	472	472	472	472	472	472	472
5600	K,M,J	562	562	562	562		562	562	562	562	562			562	562	562	562	562	562	562	562	562	562	562	562	562	562
6800	K,M,J	682	682	682	682		682	682	682	682	682			682	682	682	682	682	682	682	682	682	682	682	682	682	682
8200	K,M,J	822	822	822	822		822	822	822	822	822			822	822	822	822	822	822		822	822	822	822	822	822	822
10,000	K,M,J	103	103	103	103		103	103	103	103	103			103	103	103	103	103	103		103	103	103	103	103	103	103
12,000	K,M,J						123	123	123	123	123#			123	123	123	123	123	123		123	123	123	123	123	123	123
15,000	K,M,J						153	153	153	153	153#			153	153	153	153	153	153		153	153	153	153	153	153	153
18,000	K,M,J						183	183	183	183	183#			183	183	183	183	183	183		183	183	183	183	183	183	183
22,000	K,M,J						223	223	223	223	223#			223	223	223	223	223	223		223	223	223	223	223	223	223
27,000	K,M,J						273	273	273	273				273	273	273	273	273			273	273	273	273	273	273	
33,000	K,M,J						333	333	333	333				333	333	333	333	333			333	333	333	333	333	333	
39,000	K,M,J						393	393	393	393				393	393	393	393	393			393	393	393	393	393	393	
47,000	K,M,J						473	473	473	473				473	473	473	473	473			473	473	473	473	473	473	
56,000	K,M,J						563	563	563	563				563	563	563	563	563#			563	563	563	563	563	563	
68,000	K,M,J						683	683	683	683				683	683	683	683	683#			683	683	683	683	683	683	
82,000	K,M,J						823	823	823	823				823	823	823	823	823#			823	823	823	823	823	823	
100,000	K,M,J						104#	104#	104#	104#				104	104	104	104	104#			104	104	104	104	104	104	
120,000	K,M,J						124#	124#	124#					124	124	124	124				124	124	124	124	124		
150,000	K,M,J						154#	154#	154#					154	154	154	154				154	154	154	154	154		
180,000	K,M,J						184#	184#	184#					184	184	184	184				184	184	184	184	184#		
220,000	K,M,J						224#	224#	224#					224	224	224	224				224	224	224	224	224#		
270,000	K,M,J													274	274	274	274				274	274	274	274			
330,000	K,M,J													334	334	334	334				334	334	334	334			
390,000	K,M,J													394	394	394	394				394	394	394	394			
470,000	K,M,J													474	474	474	474				474	474	474	474			
560,000	K,M,J													564	564	564					564	564	564	564			
680,000	K,M,J													684	684	684					684	684	684	684			
820,000	K,M,J													824	824	824					824	824	824	824			
1,000,000	K,M,J													105	105	105					105@	105@	105@	105@			
1,200,000	K,M,J																				125@	125@	125@				
1,500,000	K,M,J																				155@	155@	155@				
1,800,000	K,M,J																				185@	185@	185@				
2,200,000	K,M,J																				225@	225@	225@				

* Indicates EIA preferred chip sizes.
NOTE: For non-standard capacitance values or voltages, contact your local KEMET sales representative.
X7R dielectric - Extended Range Values - Cap and DF measured @ 0.5 Vrms.
@ maximum thickness 1.7mm

X7R CAPACITANCE RANGE – 1210, 1812, 1825, 2220, 2225

CAP.	CAP.	C1210*							C1812*			C1825*			C2220			C2225		
PF	TOL.	6.3V	10V	16V	25V	50V	100V	200V	50V	100V	200V	50V	100V	200V	50V	100V	200V	50V	100V	200V
2200	K,M,J	222	222	222	222	222	222	222												
2700	K,M,J	272	272	272	272	272	272	272												
3300	K,M,J	332	332	332	332	332	332	332												
3900	K,M,J	392	392	392	392	392	392	392												
4700	K,M,J	472	472	472	472	472	472	472												
5600	K,M,J	562	562	562	562	562	562	562												
6800	K,M,J	682	682	682	682	682	682	682	682	682	682									
8200	K,M,J	822	822	822	822	822	822	822	822	822	822									
10,000	K,M,J	103	103	103	103	103	103	103	103	103	103									
12,000	K,M,J	123	123	123	123	123	123	123	123	123	123									
15,000	K,M,J	153	153	153	153	153	153	153	153	153	153									
18,000	K,M,J	183	183	183	183	183	183	183	183	183	183									
22,000	K,M,J	223	223	223	223	223	223	223	223	223	223	223	223	223						
27,000	K,M,J	273	273	273	273	273	273	273	273	273	273	273	273	273						
33,000	K,M,J	333	333	333	333	333	333	333	333	333	333	333	333	333						
39,000	K,M,J	393	393	393	393	393	393	393	393	393	393	393	393	393						
47,000	K,M,J	473	473	473	473	473	473	473	473	473	473	473	473	473				473	473	473
56,000	K,M,J	563	563	563	563	563	563	563	563	563	563	563	563	563				563	563	563
68,000	K,M,J	683	683	683	683	683	683	683	683	683	683	683	683	683				683	683	683
82,000	K,M,J	823	823	823	823	823	823	823	823	823	823	823	823	823				823	823	823
100,000	K,M,J	104	104	104	104	104	104	104	104	104	104	104	104	104				104	104	104
120,000	K,M,J	124	124	124	124	124	124		124	124	124	124	124	124				124	124	124
150,000	K,M,J	154	154	154	154	154	154		154	154	154	154	154	154				154	154	154
180,000	K,M,J	184	184	184	184	184			184	184	184	184	184	184				184	184	184
220,000	K,M,J	224	224	224	224	224			224	224		224	224	224				224	224	224
270,000	K,M,J	274	274	274	274	274#			274	274		274	274	274	274	274	274	274	274	274
330,000	K,M,J	334	334	334	334	334#			334	334		334	334	334	334	334	334	334	334	334
390,000	K,M,J								394			394	394	394	394	394	394	394	394	394
470,000	K,M,J								474			474	474		474	474		474	474	474
560,000	K,M,J								564			564	564		564	564		564	564	
680,000	K,M,J								684			684	684		684	684		684	684	
820,000	K,M,J								824			824			824	824		824	824	
1,000,000	K,M,J								105			105			105			105	105	
1,200,000	K,M,J											125			125			125		
1,500,000	K,M,J											155			155			155		
1,800,000	K,M,J											185			185			185		
2,200,000	K,M,J											225			225			225		

*** Indicates EIA preferred chip sizes.**
NOTE: For non-standard capacitance values or voltages, contact your local KEMET sales representative.
50 Volt Ceramic Chips can be used for 63 volt applications.
Extended Range Values – Cap and DF measured @ 0.5 Vrms.