The Capacitance Company
KEMET CHARGED.

Product Bulletin

Surface Mount Ceramic Chip Capacitors
High Temperature 200ºC C0G MLCC

Benefits and Features:

No Piezoelectric Noise.
Extremely low ESR and ESL.
High Thermal Stability.
High Ripple Current Capability.
Preferred capacitance solution at line frequencies and into the MHz range.
No capacitance change with respect to applied rated DC voltage.
Minimal capacitance change with respect to temperature from -55ºC to +200ºC.
No capacitance decay with time.
Non-polar device.

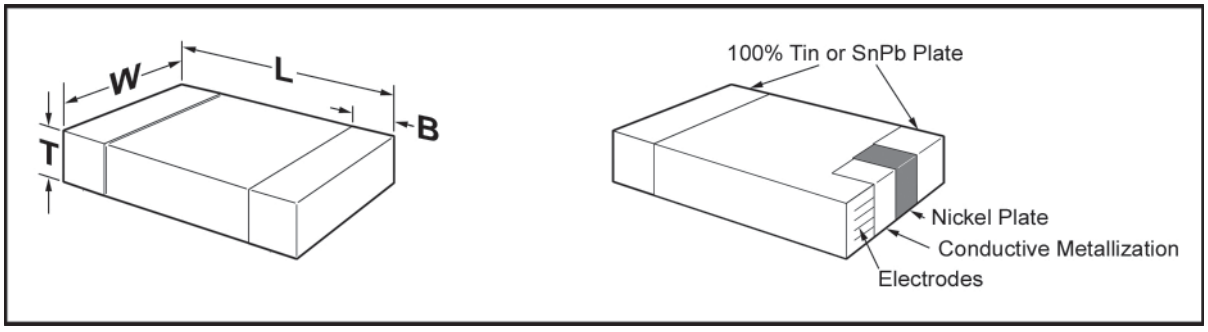
Applications:

Typical applications include critical timing, tuning, circuits requiring low loss, circuits with pulse, high current, decoupling, by-pass, filtering, transient voltage suppression, blocking and energy storage for use in extreme environments commonly present in applications such as down-hole exploration, aerospace engine compartments and geophysical probes.

KEMET's New High Temperature Surface Mount C0G MLCCs feature a robust and proprietary base metal dielectric system that offers industry-leading performance relative to capacitance and case size combined with capacitance stability at extreme temperatures up to +200ºC. This new platform promotes downsizing opportunities of existing High Temperature C0G technology, and offers replacement opportunities of existing X7R/BX/BR technologies.

Standard capacitance ratings for these devices range from 0.5 pF up to 0.22 µF in capacitance tolerance offerings of ±0.25pF, ±0.5pF, ±1%, ±2%, ±5%, ±10%, or ±20%. The Temperature Coefficient of Capacitance (TCC) is ±30ppm/°C from -55°C to +200°. Devices are available in DC voltage ratings of 10V, 16V, 25V, 50V and 100V, with a maximum dissipation factor of 0.10%. Seven standard EIA case size options are available which include –0603, 0805, 1206, 1210, and 1812- with either nickel barrier/tin or Sn/Pb terminations.

Outline Drawing



Dimensions - Millimeters (Inches)

EIA SIZE CODE	METRIC SIZE CODE	L LENGTH	W WIDTH	B BANDWIDTH	S SEPARATION minimum
0603	1608	1.6 (.063) ± .15 (.006)	0.8 (.032) ± .15 (.006)	0.35 (.014) ± .15 (.006)	0.7 (.028)
0805	2012	2.0 (.079) ± .20 (.008)	1.25 (.049) ± .20 (.008)	0.50 (.020) ± .25 (.010)	0.75 (.030)
1206	3216	3.2 (.126) ± .20 (.008)	1.6 (.063) ± .20 (.008)	0.50 (.020) ± .25 (.010)	N/A
1210	3225	3.2 (.126) ± .20 (.008)	2.5 (.098) ± .20 (.008)	0.50 (.020) ± .25 (.010)	N/A
1812	4532	4.5 (.177) ± .30 (.012)	3.2 (.126) ± .30 (.012)	0.60 (.024) ± .35 (.014)	N/A

© KEMET Electronics Corporation • P.O. Box 5928 • Greenville, SC 29606 (864) 963-6300 • www.kemet.com

Ordering Information

C	1210	H	124	J	5	G	A	C	TU
Ceramic	**Case Size (L"x W")**	**Specification/ Series**	**Capacitance Code (pF)**	**Capacitance Tolerance**	**Voltage**	**Dielectric**	**Failure Rate/ Design**	**End Metallization (Plated)**	**Packaging/Grade (C-Spec)***
	0603	H = High Temp (200ºC)	2 Sig. Digits +	C = ±0.25pF	8 = 10V	G = C0G	A = N/A	C = 100% Matte Sn	Blank = Bulk
	0805		Number of	D = ±0.5pF	4 = 16V			L = SnPb (5% min)	TU = 7" Reel Unmarked
	1206		Zeros*	F = ±1%	3 = 25V				TM = 7" Reel Marked
	1210		*Use 9 for 1.0 - 9.9pF	G = ±2%	6 = 35V				
	1812		*Use 8 for 0.5 - .99pF	J = ±5%	5 = 50V				
			ex. 2.2pF = 229	K = ±10%	1 = 100V				
			ex. 0.5pF = 508	M = ±20%	2 = 200V				

*Contact KEMET for availability and ordering details if you require additional reeling or packaging options.

Additional termination options may be available, contact KEMET for details.

Electrical Parameters/Characteristics

Operating Temperature Range:	-55°C to +200°C
Temperature Coefficient of Capacitance :	±30PPM/ºC (up to 200ºC)
Aging Rate (Max % Cap Loss/Decade Hour):	0%
Dielectric Withstanding Voltage:	250%
Dissipation Factor (DF) @ 25ºC:	.001 (0.10%) Max
Insulation Resistance (IR) Limit @ 25°C:	1000 megohm microfarads or 100GΩ
Insulation Resistance (IR) Limit @ 200°C:	10 megohm microfarads or 1GΩ

Capacitance and Dissipation Factor (DF) measured under the following conditions:
1kHz and 1 Vrms if capacitance >1000pF
1MHz and 1 Vrms if capacitance ≤1000pF

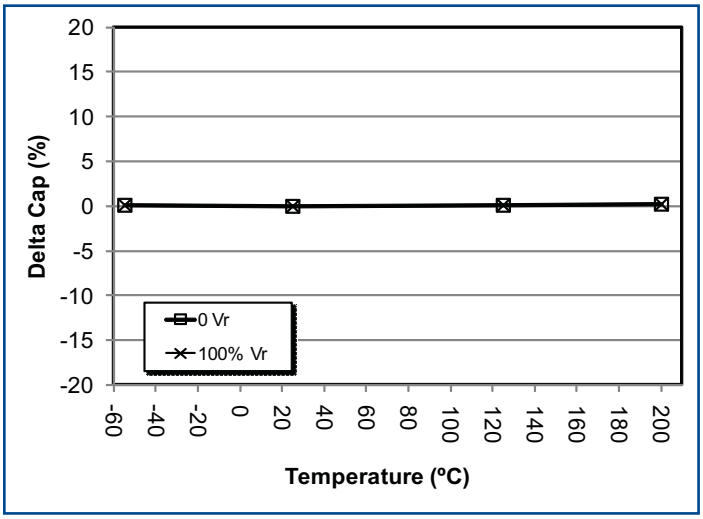
Qualification/Certification

RoHS-PRC (6/6) - 100% matte Sn termination

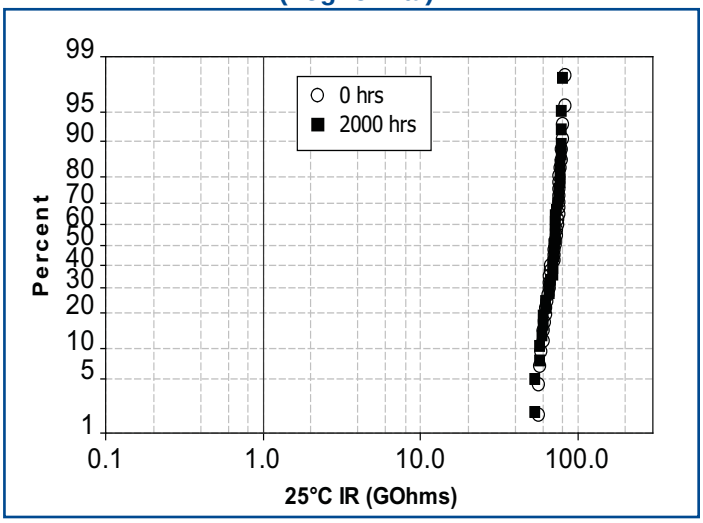
Product Qualification Test Plan	
RELIABILITY/ ENVIRONMENTAL TESTS per MIL-STD-202/JESD22	
High Temperature Life	200ºC, Rated Voltage, 2000 Hours.
Load Humidity	85ºC /85%RH, Rated Voltage, 1000 Hours.
Low Voltage Humidity	85ºC /85%RH, 1.5V, 1000 Hours.
Temperature Cycling	-55ºC to +200ºC, 50 Cycles.
Thermal Shock	-55ºC to +150ºC, 20s transfer, 15 min dwell, 300 Cycles.
Moisture Resistance	Cycled Temp / RH. 0V, 10 cycles @ 24 Hrs each.
PHYSICAL, MECHANICAL & PROCESS TESTS per MIL-STD 202/JIS-C-6429	
Resistance to Solvents	Include Aqueous wash chemical - OKEM Clean or equivalent.
Mechanical Shock and Vibration	Method 213: Figure 1, Condition F Method 204: 5 gs for 20 min,12 cycles.
Restistance to Soldering Heat	Condition B, no pre-heat of samples, Single Wave Solder.
Terminal Strength	Force of 1.8 kg for 60 seconds.
Board Flex	3mm minimum.

Electrical Characteristics

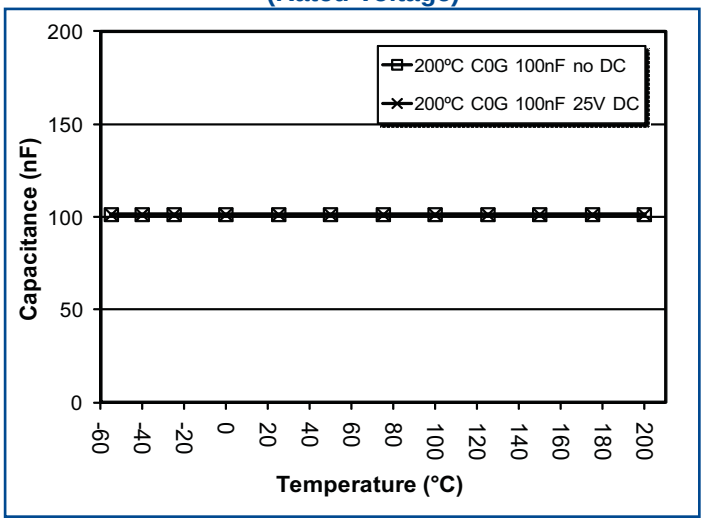
Delta Cap vs. Temperature (Typical)



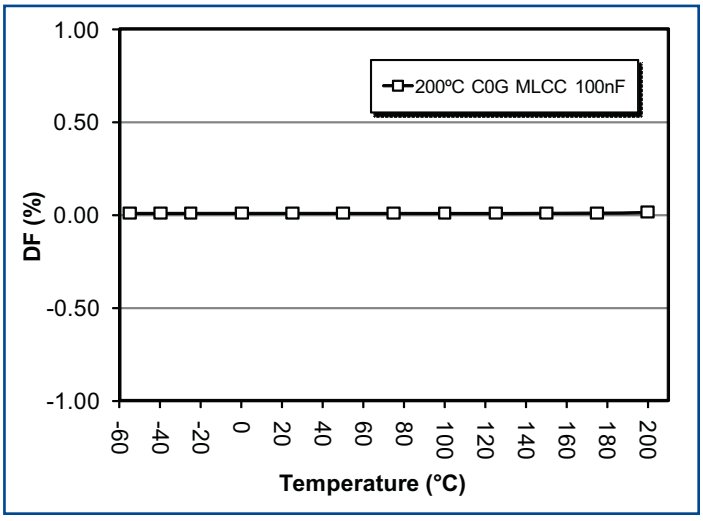
C1210H104J1GAC - Life Test IR Distribution (Lognormal)



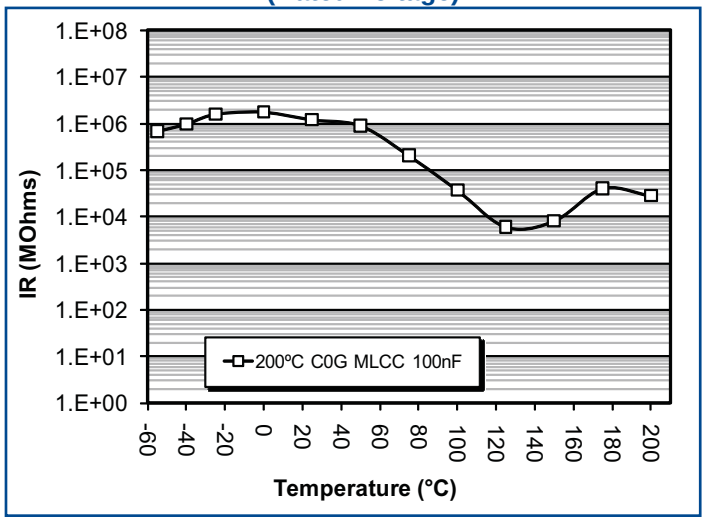
Capacitance vs. Temperature with 25V DC bias (Rated Voltage)



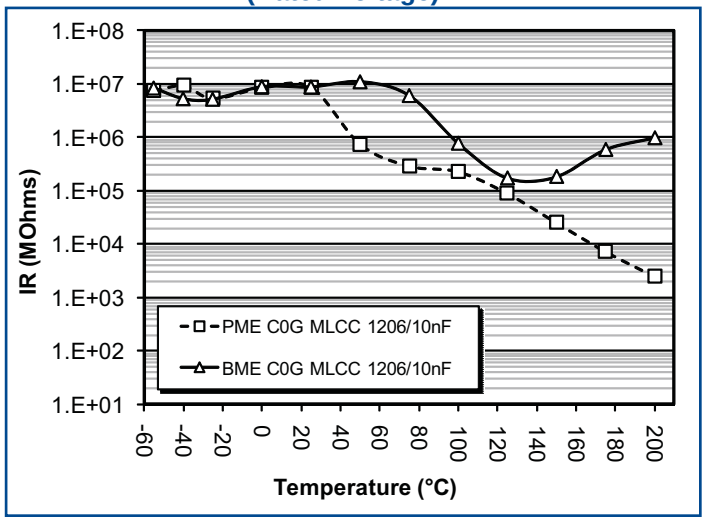
DF vs. Temperature without DC bias.



IR vs. Temperature with 25V DC bias (Rated Voltage)



BME vs. PME/IR vs. Temperature with 25V DC bias (Rated Voltage)



The Capacitance Company
KEMET
CHARGED.

High Temperature 200ºC (0603 - 1812 Case Sizes) C0G DIELECTRIC

Cap pF	Cap Code	Series	C0603						C0805						C1206						C1210						C1812	
		Voltage	10V	16V	25V	50V	100V	200V	10V	16V	25V	50V	100V	200V	10V	16V	25V	50V	100V	200V	10V	16V	25V	50V	100V	200V	50V	100V
		Voltage Code	8	4	3	5	1	2	8	4	3	5	1	2	8	4	3	5	1	2	8	4	3	5	1	2	5	1
		Cap Tolerance	Product Availability and Chip Thickness Codes - See Page 78 for Chip Thickness Dimensions																									
0.50-0.75	508-759	CD	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC														
1.0-2.4	109-249	CD	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
2.7	279	CD K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
3.0	309	CD K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
3.3	339	CD K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
3.6	369	CD K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
3.9	399	CD K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
4.3	439	CD K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
4.7	479	CD K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
5.1	519	CD K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
5.6	569	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
6.2	629	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
6.8	689	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
7.5	759	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
8.2	829	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
9.1	919	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
10	100	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
11	110	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
12	120	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
13	130	CD J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
15	150	CD G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
16	160	CD G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
18	180	CD G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
20	200	CD G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
22	220	CD G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
24	240	CD G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
27	270	D G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
30	300	D G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
33	330	D G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
36	360	D G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
39	390	D F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
43	430	D F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
47	470	D F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
51	510	D F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
56	560	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
62	620	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
68	680	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
75	750	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
82	820	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
91	910	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
100	101	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
110	111	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
120	121	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
130	131	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
150	151	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
160	161	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
180	181	F G J K M	CB	CB	CB	CB	CB	CB	DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
200	201	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
220	221	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
240	241	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
270	271	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
300	301	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
330	331	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
360	361	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
390	391	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
430	431	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
470	471	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DD	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
510	511	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
560	561	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
620	621	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EC	FB	FB	FB	FB	FB	FB		
680	681	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EC	FB	FB	FB	FB	FB	FB		
750	751	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EC	FB	FB	FB	FB	FB	FB		
820	821	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC	DC	EB	EB	EB	EB	EB	EC	FB	FB	FB	FB	FB	FB		
910	911	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DD	DD	EB	EB	EB	EB	EB	ED	FB	FB	FB	FB	FB	FB		
1,000	102	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DD	DD	EB	EB	EB	EB	EB	EE	FB	FB	FB	FB	FB	FB		
1,100	112	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC		EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
1,200	122	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC		EB	EB	EB	EB	EB	EB	FB	FB	FB	FB	FB	FB		
1,300	132	F G J K M	CB	CB	CB	CB	CB		DD	DD	DD	DD	DD		EB	EB	EB	EB	EC	EC	FB	FB	FB	FB	FB	FC		
1,500	152	F G J K M	CB	CB	CB	CB	CB		DD	DD	DD	DD	DD		EB	EB	EB	EB	ED	EC	FB	FB	FB	FB	FB	FE		
1,600	162	F G J K M	CB	CB	CB	CB	CB		DD	DD	DD	DD	DD		EB	EB	EB	EB	ED	ED	FB	FB	FB	FB	FB	FE		
1,800	182	F G J K M	CB	CB	CB	CB	CB		DD	DD	DD	DD	DD		EB	EB	EB	EB	ED	ED	FB	FB	FB	FB	FB	FE		
2,000	202	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC		EB	EB	EB	EB	ED	ED	FB	FB	FB	FB	FC	FE		
2,200	222	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC		EB	EB	EB	EB	EE	EE	FB	FB	FB	FB	FC	FG		
2,400	242	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC		EB	EB	EB	EB	EC	EC	FB	FB	FB	FB	FC	FC		
2,700	272	F G J K M	CB	CB	CB	CB	CB		DC	DC	DC	DC	DC		EB	EB	EB	EB	EC	EC	FB	FB	FB	FB	FC	FC		
3,000	302	F G J K M	CB	CB	CB	CB	CB		DD	DD	DD	DD	DC		EC	EC	EC	EC	EC		FB	FB	FB	FB	FC	FF		
3,300	332	F G J K M	CB	CB	CB	CB	CB		DD	DD	DD	DD	DC		EC	EC	EC	EC	EE		FB	FB	FB	FB	FF	FF		
3,600	362	F G J K M	CB	CB	CB	CB	CB		DD	DD	DD	DD	DC		EC	EC	EC	EC	EE		FB	FB	FB	FB	FF	FF		
3,900	392	F G J K M	CB	CB	CB	CB	CB		DE	DE	DE	DE	DC		EC	EC	EC	EC	EF		FB	FB	FB	FB	FF	FF		
4,300	432	F G J K M	CB	CB	CB	CB	CB		DE	DE	DE	DE	DC		EC	EC	EC	EC	EC		FB	FB	FB	FB	FF	FF		
4,700	472	F G J K M	CB	CB	CB	CB	CB		DE	DE	DE	DE	DC		EC	EC	EC	EC	EC		FF	FF	FF	FF	FG	FG		
5,100	512	F G J K M	CB	CB	CB	CB			DE	DE	DE	DE	DC		ED	ED	ED	ED	ED		FB	FB	FB	FB	FG	FG		
5,600	562	F G J K M	CB	CB	CB	CB			DC	DC	DC	DC	DC		ED	ED	ED	ED	ED		FB	FB	FB	FB	FG	FG		
6,200	622	F G J K M	CB	CB	CB	CB			DC	DC	DC	DC	DC		EB	EB	EB	EB	EB		FB	FB	FB	FB	FG			
6,800	682	F G J K M	CB	CB	CB	CB			DC	DC	DC	DC	DC		EB	EB	EB	EB	EB		FB	FB	FB	FB	FG			
7,500	752	F G J K M	CB	CB	CB	CB			DC	DC	DC	DC	DC		EB	EB	EB	EB	EB		FC	FC	FC	FC	FC			
8,200	822	F G J K M	CB	CB	CB				DC	DC	DC	DC	DC		EC	EC	EC	EC	EB		FC	FC	FC	FC	FC			
9,100	912	F G J K M	CB	CB	CB				DC	DC	DC	DC	DC		EC	EC	EC	EC	EB		FE	FE	FE	FE	FE			
10,000	103	F G J K M	CB	CB	CB				DC	DC	DC	DC	DD		ED	ED	ED	ED	EB		FF	FF	FF	FF	FF			
12,000	123	F G J K M							DC	DC	DC	DC	DE		EB	EB	EB	EB	EB		FG	FG	FG	FG	FB			
15,000	153	F G J K M							DC	DC	DC	DD	DG		EB	EB	EB	EB	EB		FG	FG	FG	FG	FB		GB	GB
18,000	183	F G J K M							DC	DC	DC	DD			EB	EB	EB	EB	EB		FB	FB	FB	FB	FB		GB	GB
22,000	223	F G J K M							DD	DD	DD	DF			EB	EB	EB	EB	EC		FB	FB	FB	FB	FB		GB	GB
27,000	273	F G J K M							DF	DF	DF				EB	EB	EB	EB	EE		FB	FB	FB	FB	FB		GB	GB
33,000	333	F G J K M							DG	DG	DG				EB	EB	EB	EB	EE		FB	FB	FB	FB	FB		GB	GB
47,000	473	F G J K M													EC	EC	EC	EE	EH		FB	FB	FB	FB	FE		GB	GB
56,000	563	F G J K M													ED	ED	ED	EF			FB	FB	FB	FB	FF		GB	GB
68,000	683	F G J K M													EF	EF	EF	EH			FB	FB	FB	FC	FG		GB	GB
82,000	823	F G J K M													EH	EH	EH	EH			FC	FC	FC	FF	FH		GB	GB
100,000	104	F G J K M													EH	EH	EH				FE	FE	FE	FG	FM		GB	GD
120,000	124	F G J K M																			FG	FG	FG	FH			GB	GH
150,000	154	F G J K M																			FH	FH	FH	FM			GD	GN
180,000	184	F G J K M																									GH	
220,000	224	F G J K M																									GK	
270,000	274	F G J K M																										
Cap pF	Cap Code	Voltage Code	8	4	3	5	1	2	8	4	3	5	1	2	8	4	3	5	1	2	8	4	3	5	1	2	5	1
		Voltage	10V	16V	25V	50V	100V	200V	10V	16V	25V	50V	100V	200V	10V	16V	25V	50V	100V	200V	10V	16V	25V	50V	100V	200V	50V	100V
		Series	C0603						C0805						C1206						C1210						C1812	

© KEMET Electronics Corporation • P.O. Box 5928 • Greenville, SC 29606 (864) 963-6300 • www.kemet.com

Chip Thickness / Packaging Quantities

Thickness Code Reference Chart
Packaging Quantity Based on Finished Chip Thickness Specifications

Thickness Code	Chip Size	Thickness ± Range (mm)	Qty per Reel 7" Plastic	Qty per Reel 13" Plastic	Qty per Reel 7" Paper	Qty per Reel 13" Paper	Qty per Bulk Cassette
AA	01005	0.20 ± 0.02	--	--	15000	--	--
AB	0201	0.30 ± 0.03	--	--	15000	--	--
BB	0402	0.50 ± 0.05	--	--	10000	50000	50000
CB	0603	0.80 ± 0.07	--	--	4000	10000	15000
CC	0603	0.80 ± 0.10	--	--	4000	10000	--
CD	0603	0.80 ± 0.15	--	--	4000	10000	--
DB	0805	0.60 ± 0.10	--	--	4000	10000	10000
DC	0805	0.78 ± 0.10	--	--	4000	10000	--
DD	0805	0.90 ± 0.10	--	--	4000	10000	--
DE	0805	1.00 ± 0.10	2500	10000	--	--	--
DF	0805	1.10 ± 0.10	2500	10000	--	--	--
DG	0805	1.25 ± 0.15	2500	10000	--	--	--
DH	0805	1.25 ± 0.20	2500	10000	--	--	--
DL	0805	0.95 ± 0.10	4000	10000	--	--	
EB	1206	0.78 ± 0.10	4000	10000	4000	10000	--
EC	1206	0.90 ± 0.10	4000	10000	--	--	--
ED	1206	1.00 ± 0.10	2500	10000	--	--	--
EE	1206	1.10 ± 0.10	2500	10000	--	--	--
EF	1206	1.20 ± 0.15	2500	10000	--	--	--
EG	1206	1.60 ± 0.15	2000	8000	--	--	--
EH	1206	1.60 ± 0.20	2000	8000	--	--	--
EJ	1206	1.70 ± 0.20	2000	8000	--	--	--
EK	1206	0.80 ± 0.10	2000	8000	--	--	--
EM	1206	1.25 ± 0.15	2500	10000	--	--	--
EN	1206	0.95 ± 0.10	4000	10000	--	--	--
FB	1210	0.78 ± 0.10	4000	10000	--	--	--
FC	1210	0.90 ± 0.10	4000	10000	--	--	--
FD	1210	0.95 ± 0.10	4000	10000	--	--	--
FE	1210	1.00 ± 0.10	2500	10000	--	--	--
FF	1210	1.10 ± 0.10	2500	10000	--	--	--
FG	1210	1.25 ± 0.15	2500	10000	--	--	--
FH	1210	1.55 ± 0.15	2000	8000	--	--	--
FJ	1210	1.85 ± 0.20	2000	8000	--	--	--
FK	1210	2.10 ± 0.20	2000	8000	--	--	--
FL	1210	1.40 ± 0.15	2000	8000	--	--	--
FM	1210	1.70 ± 0.20	2000	8000	--	--	--
FN	1210	1.85 ± 0.20	2000	8000	--	--	--
FO	1210	1.50 ± 0.20	2000	8000	--	--	--
FP	1210	1.60 ± 0.20	2000	8000	--	--	--
FR	1210	2.25 ± 0.20	2000	8000	--	--	--
FS	1210	2.50 ± 0.20	1000	4000	--	--	--
FT	1210	1.90 ± 0.20	1500	4000	--	--	--
GB	1812	1.00 ± 0.10	1000	4000	--	--	--
GC	1812	1.10 ± 0.10	1000	4000	--	--	--
GD	1812	1.25 ± 0.15	1000	4000	--	--	--
GE	1812	1.30 ± 0.10	1000	4000	--	--	--
GF	1812	1.50 ± 0.10	1000	4000	--	--	--
GG	1812	1.55 ± 0.10	1000	4000	--	--	--
GH	1812	1.40 ± 0.15	1000	4000	--	--	--
GJ	1812	1.70 ± 0.15	1000	4000	--	--	--
GK	1812	1.60 ± 0.20	1000	4000	--	--	--
GL	1812	1.90 ± 0.20	1000	4000	--	--	--
GM	1812	2.00 ± 0.20	1000	4000	--	--	--
GN	1812	1.70 ± 0.20	1000	4000	--	--	--
GO	1812	2.50 ± 0.20	500	2000	--	--	--
HB	1825	1.10 ± 0.15	1000	4000	--	--	--
HC	1825	1.15 ± 0.15	1000	4000	--	--	--
HD	1825	1.30 ± 0.15	1000	4000	--	--	--
HE	1825	1.40 ± 0.15	1000	4000	--	--	--
HF	1825	1.50 ± 0.15	1000	4000	--	--	--
HG	1825	1.60 ± 0.20	1000	4000	--	--	--
JB	2220	1.00 ± 0.15	1000	4000	--	--	--
JC	2220	1.10 ± 0.15	1000	4000	--	--	--
JD	2220	1.30 ± 0.15	1000	4000	--	--	--
JE	2220	1.40 ± 0.15	1000	4000	--	--	--
JF	2220	1.50 ± 0.15	1000	4000	--	--	--
JG	2220	1.70 ± 0.15	1000	4000	--	--	--
JH	2220	1.80 ± 0.15	1000	4000	--	--	--
JO	2220	2.40 ± 0.15	500	2000	--	--	--
JP	2220	1.60 ± 0.20	1000	4000	--	--	--
KB	2225	1.00 ± 0.15	1000	4000	--	--	--
KC	2225	1.10 ± 0.15	1000	4000	--	--	--
KD	2225	1.30 ± 0.15	1000	4000	--	--	--
KE	2225	1.40 ± 0.15	1000	4000	--	--	--
KF	2225	1.60 ± 0.20	1000	4000	--	--	--
LA	1808	1.40 ± 0.15	1000	4000	--	--	--
LB	1808	1.60 ± 0.15	1000	4000	--	--	--
LC	1808	2.00 ± 0.15	1000	4000	--	--	--
LD	1808	0.90 ± 0.10	2500	10000	--	--	--
MA	1632	0.80 ± 0.10	4000	10000	--	--	--

© KEMET Electronics Corporation • P.O. Box 5928 • Greenville, SC 29606 (864) 963-6300 • www.kemet.com

Soldering Process

All parts incorporate the standard KEMET barrier layer of pure nickel, with an overplate of pure tin to provide excellent solderability as well as resistance to leaching.

HMP solders ,e.g., Pb94, are recommended for high temperature applications.

Marking

These chips will be supplied unmarked. If required, they can be laser-marked as an extra option. Details on the marking format are included in KEMET Surface Mount catalog F3102.

In general, the information in the KEMET Surface Mount catalog F3102 applies to these capacitors. The information in this bulletin supplements that in the catalog.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Multilayer Ceramic Capacitors MLCC - Leaded ***category:***

Click to view products by Kemet ***manufacturer:***

Other Similar products are found below :

010-007220-002REV A M39014/01-1210V M39014/01-1281V M39014/01-1335V M39014/01-1571V M39014/01-1578V M39014/01-1593 M39014/02-1265V M39014/02-1347 M39014/02-1350 M39014/02-1356VTR1 M39014/22-0167 M39014/22-0734 87043-49 Q52-DK AR215F103K4RTR2-3323 C0603C309C5GACTU-CUT-TAPE C410C221K1G5TATR C420C102J1G5TATR C430C104M1U5TATR SL155C222MAB FK26X7R2E104KN006 CCR06CG183GRV CFB1/2C101J CFB1/2C102J CN20C102K M39014/01-1317 M39014/01-1572V M39014/01-1594V M39014/02-1236 M39014/02-1321V M39014/02-1345V M39014/22-0351 M39014/22-0695 M39014/220767 M39014/220788 M39014/22-1005 MA405E334MAA MD015A103KAB SL301E105MAB CCR05CG242FRV KTD101B684M32A0B00 CCR07CG473KR CCR05CG820JP TKC-TMC1206-05-1501-J?? TKC-TMC1206-05-1801-J TKC-TMC1206-05-20R0-F TKC-TMC1206-05-3901-J TKC-TMC1206-05-44R2-F TKC-TMC1206-05-4703-J??