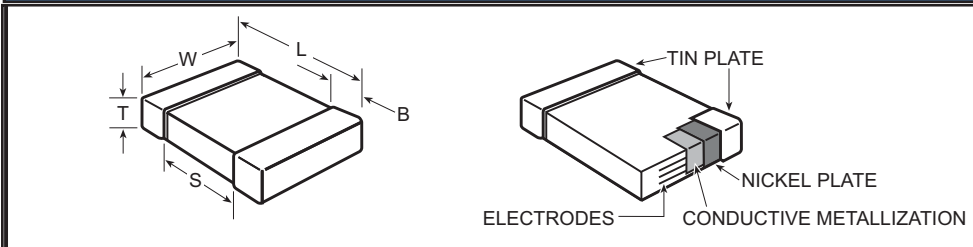


Fail-Safe Floating Electrode MLCC / FE-CAP / X7R Dielectric

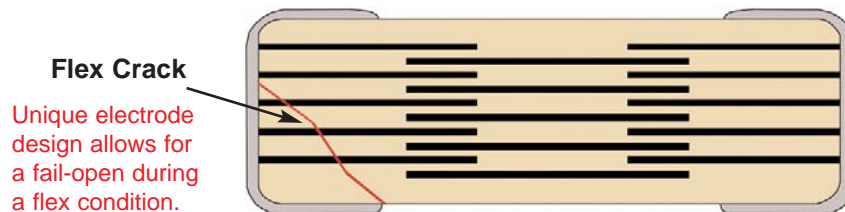
Outline Drawing



Product Description

The FE-CAP is a SMD MLCC utilizing a floating internal electrode design, wherein the electrodes are configured to form multiple capacitors in series within a single MLCC package. This not only yields improved voltage and ESD performance over standard designs, but also mitigates the risk of low-IR or short-circuit failures that can occur due to board flex. Combined with the stability of an X7R dielectric, the FE-CAP complements KEMET's Open Mode Devices by providing a fail-safe design optimized for low to mid range capacitance values.

FE-CAP Internal Design



Dimensions – Millimeters (Inches)

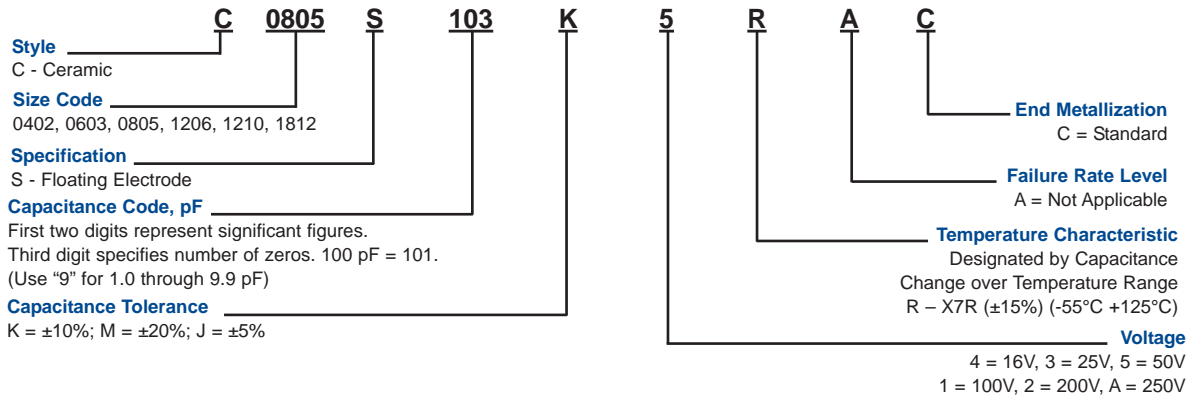
EIA Size Code	Metric Size Code	L Length	W Width	B Bandwidth	S Separation
0402	1005	1.0 (.04) ± 0.05 (.002)	0.5 (.02) ± 0.05 (.002)	0.20 (.008) -0.40 (.016)	0.30 (.012)
0603	1608	1.6 (.063) ± 0.15 (.006)	0.8 (.032) ± 0.15 (.006)	0.35 (.014) ± 0.15 (.006)	0.70 (.028)
0805	2012	2.0 (.079) ± 0.20 (.008)	1.25 (.049) ± 0.20 (.008)	0.05 (.02) ± 0.25 (.010)	0.75 (.030)
1206	3216	3.2 (.126) ± 0.20 (.008)	1.6 (.063) ± 0.20 (.008)	0.50 (.02) ± .25 (.010)	N/A
1210	3225	3.2 (.126) ± 0.20 (.008)	2.5 (.098) ± 0.20 (.008)	0.50 (.02) ± .25 (.010)	N/A
1812	4532	4.5 (.177) ± 0.30 (.012)	3.2 (.126) ± 0.30 (.012)	0.60 (.024) ± .35 (.014)	N/A

Refer to standard thickness dimensions and table located in the F3102 SMT catalog on pages 73, 74, and 77.

X7R Capacitance Range

CAP (pF)	CAP (nF)	CAP CODE	0402					0603					0805					1206					1210					1812												
			6.3	10	16	25	50	6.3	10	16	25	50	100	200	6.3	10	16	25	50	100	200	250	6.3	10	16	25	50	100	200	250	6.3	10	16	25	50	100	200	250		
150	0.15	151																																						
180	0.18	181																																						
220	0.22	221																																						
270	0.27	271																																						
330	0.33	331																																						
390	0.39	391																																						
470	0.47	471																																						
560	0.56	561																																						
680	0.68	681																																						
820	0.82	821																																						
1000	1.00	102																																						
1200	1.2	122																																						
1500	1.5	152																																						
1800	1.8	182																																						
2200	2.2	222																																						
2700	2.7	272																																						
3300	3.3	332																																						
3900	3.9	392																																						
4700	4.7	472																																						
5600	5.6	562																																						
6800	6.8	682																																						
8200	8.2	822																																						
10000	10	103																																						
12000	12	123																																						
15000	15	153																																						
18000	18	183																																						
22000	22	223																																						
27000	27	273																																						
33000	33	333																																						
39000	39	393																																						
47000	47	473																																						
56000	56	563																																						
68000	68	683																																						
82000	82	823																																						
100000	100	104																																						
120000	120	124																																						
150000	150	154																																						
180000	180	184																																						
220000	220	224																																						

Ordering Information



Electrical Parameters

As detailed in the KEMET Surface Mount Catalog F3102 for X7R, with following specific requirements based on room temperature (25°C) parameters:

- Operating Range: -55°C to +125°C, with no-bias capacitance shift limited to ± 15% over that range.
- Insulation Resistance (IR) measured after 2 minutes at rated voltage @ 25°C: Limit is 1,000 megohm microfarads or 100 gigohm, whichever is less.
- Capacitance and Dissipation Factor (DF) measured at 1kHz and 1 Vrms.

DF Limits are:

50 - 250 Volts	2.5%
16 - 25 Volts	3.5%

Soldering Process

These components are suitable for reflow and wave soldering. 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.

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.