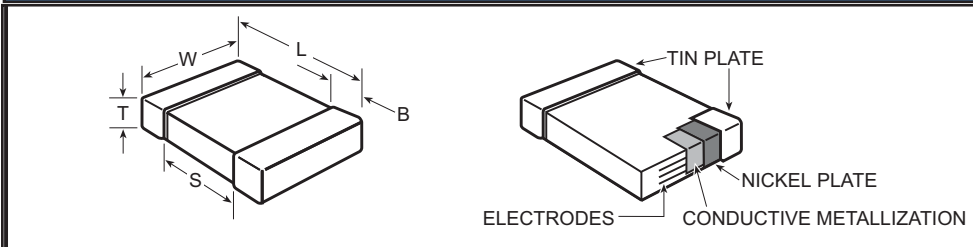


Fail-Safe Floating Electrode MLCC / FE-CAP / X7R Dielectric

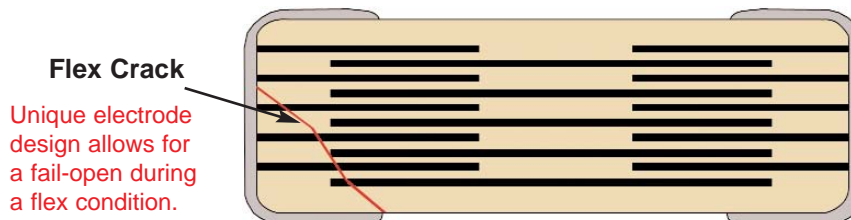
Outline Drawing



Product Description

The FE-CAP is a SMD MLCC which utilizes 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

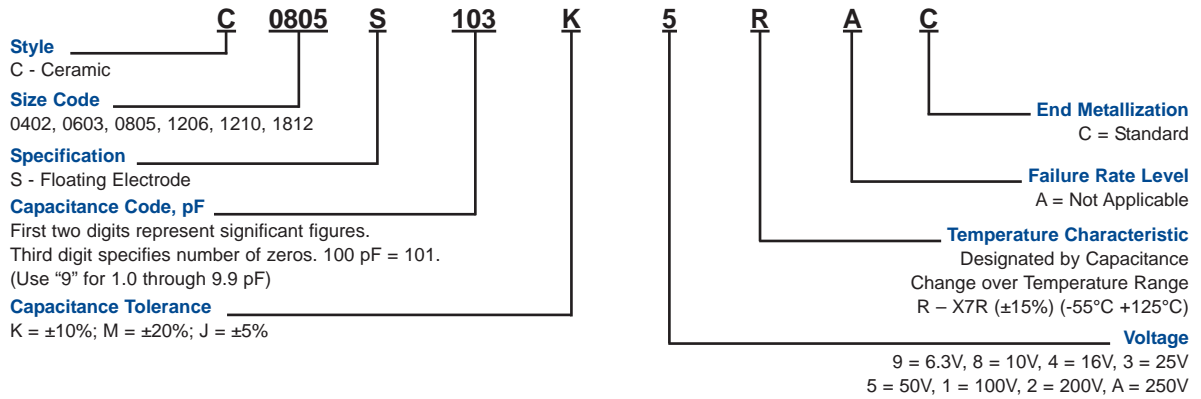


Dimensions – Millimeters (Inches)

| 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.

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 V_{rms}.
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.

Qualification/Certification

AEC-Q200 Rev. C - Automotive
RoHS 6 - 100% tin termination

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.

RoHS Compliant

