



Flex Crack Mitigation Solutions Multilayer Ceramic Capacitors



Why Choose KEMET

KEMET Electronics Corporation is a leading global supplier of electronic components. We offer our customers the broadest selection of capacitor technologies in the industry, along with an expanding range of electromechanical devices, electromagnetic compatibility solutions and supercapacitors. Our vision is to be the preferred supplier of electronic component solutions for customers demanding the highest standards of quality, delivery and service.

Features & Benefits

- Reduces catastrophic failures due to MLCC flex cracking that arise from board flex
- Reduces the likelihood of low IR or shorts due to flex cracking
- Flex stresses are channeled to component terminations
- Four flex crack mitigation solutions available including "Fail-Open" designs
- Can allow for up to 5mm of board flexibility
- Pb-Free and RoHS compliant

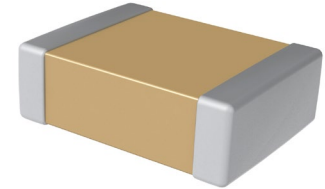
Product Checklist

- Is this application powered from a battery or mains?
- Is this part of a mission-critical or safety system?
- Is the PCB subject to high levels of flexure during assembly, mounting, or de-panelization?
- Are MLCCs being placed close to the PCB edges or near connectors/heavy components?
- Are mechanical or thermal stresses a concern?
- Is the application for high voltage or high temperature use?
- Is there a height restriction for components on the PCB?
- Are audible or microphonic vibrations a concern in the system?

For more information, samples and engineering kits, please visit us at www.kemet.com or call 1.877.myKEMET.

Applications

- **Automotive**
Battery line, engine control, safety, multimedia
- **Industrial**
Measurement, analytical, medical, power supply
- **Defense/Aerospace**
Display, instrumentation, navigation
- **Commercial**
Consumer electronics, mobile devices





KEMET Electrical/Physical Characteristics

Technology	Dielectric	Case Sizes/ Form Factor	Voltage Options	Capacitance	Target Value	Example
Fail Open Technology: Creates an isolation area where cracks will only produce opens not shorts						
Open Mode (CxxxxF)	X7R	0805 – 1812	16 – 200	1,000 pF – 6.8 μ F	Mid to High Capacitance	
Floating Electrode (FE-CAP) (CxxxxS)	X7R	0402 – 1812	6.3 – 250	150 pF – 0.22 μ F	Low to Mid Capacitance	
Flexible Termination Technology: Cracks are isolated to terminals, they will not propagate to active area						
FT-CAP (CxxxxX)	X7R, COG, Ultra Stable X8R, X8L	0603 – 2225	6.3 – 250	0.5 pF – 22 μ F	Low to High Capacitance	
High Voltage FT-CAP	X7R	0603 – 2225	500 – 3,000	10 pF – 560 nF	Low to High Capacitance	
	COG	0805 – 2225	500 – 3,000	1 pF – 39 nF		
High Voltage ArcShield FT-CAP	X7R	0603 – 2225	500 – 1,000	1,000 pF – 560 nF	Low to High Capacitance	
Hybrid Technology: A combination of Flexible Termination and Fail Open Technologies						
Flexible Termination + Open Mode FO-CAP (CxxxxJ)	X7R	0805 – 1812	16 – 200	1.0 pF – 6.8 μ F	Mid to High Capacitance	
Flexible Termination + Floating Electrode FF-CAP (CxxxxY)	X7R	0603 – 1812	6.3 – 250	180 pF – 0.22 μ F	Low to Mid Capacitance	



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Technology	Dielectric	Case Sizes/ Form Factor	Voltage Options	Capacitance	Target Value	Example
Mechanical Isolation Technology: Leaded and through-hole options to handle high-flexure conditions						
KPS (KEMET Power Solutions)	X7R	SMD	10 – 630	100 pF – 47 μ F	High Capacitance	
Goldmax (Radial Through-Hole)	COG, X7R, Z5U	Through-hole	25 – 3,000	1.0 pF – 560 nF	Low to High Capacitance	
Aximax (Axial Through-Hole)	COG, X7R, Z5U	Through-hole	25 – 250	1.0 pF – 4.7 μ F	Low to High Capacitance	