AEM®
INNOVATIVE CIRCUIT PROTECTION

Automotive Grade Surface-Mount Fuses

First SMD Fuses Specifically Designed for Automotive Applications

- AEC-Q200 qualified
- TS16949 certified
- Anti-sulfur construction
- 100% lead-free

AEM Components' AEC-Q200 qualified and ISO TS16949 certified fuses are setting a new standard for reliable performance in demanding automotive applications. Choose from AirMatrix wire-in-air fuses and SolidMatrix solid body fuses for optimum performance under the hood or in the cabin.

AirMatrix® Platform

QA 2410/1206

- Unique construction enhances reliability
- Hermetically sealed wire-in-air structure
- Highly-reliable end-cap construction
- Highest current rating in the industry, up to 20A, 250V
- Consistent electrical performance

SolidMatrix® Platform

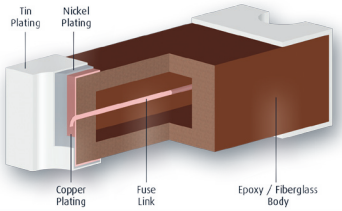
QF 1206/0603

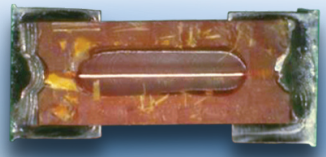
- Stable at high temperature and high stress
- Superior thermal and mechanical performance
- Operating temperature ranges -55 to 150°C
- Unique co-fired monolithic structure
- High-reliability anti-sulfur construction

AEM Components 6670 Cobra Way, San Diego, CA 92121, USA 858.750.6100 **www.aemcomponents.com**

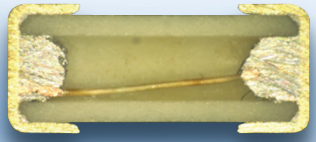
AirMatrix Automotive-Grade SMT Fuses Push the Performance Envelope

Thanks to its unique construction, the AEMs' AirMatrix fuse can achieve exceptional, repeatable performance in many high-stress automotive applications. The images below contrast AirMatrix construction with that of conventional wire-in-air fuses.



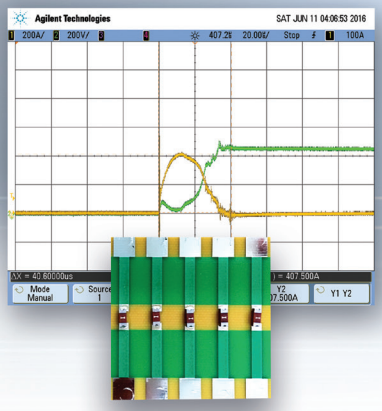


AEM AirMatrix

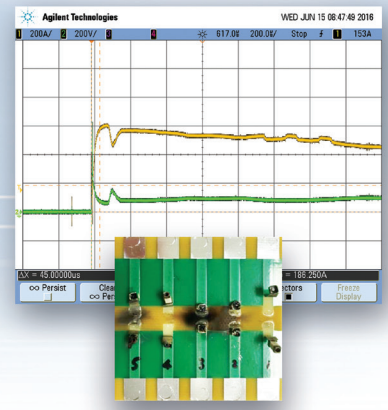


Competitor

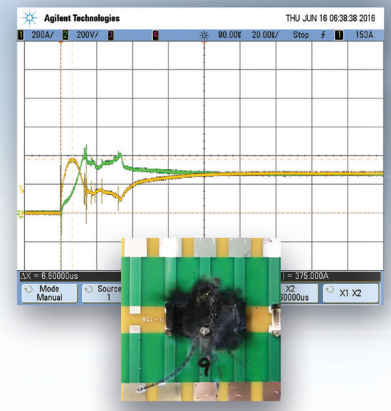
The fuse element in the AEM AirMatrix component is uniformly straight across the cavity and externally bonded to the endcap as shown in the actual cut-away photo and described in the illustration, above. Competitive units, depicted in the cut-away photo above on the right, utilize a solder bead inside a ceramic tube resulting in non-uniform positioning of the fusible element. Under high-stress conditions, the solder can vaporize, adding a secondary conductive path with serious consequences (see comparison figures, below).



AEM AirMatrix



Competitor A



Competitor B

AEM AirMatrix fuses and two traditional wire-in-air competitors' parts were tested while simulating a serious short-circuit event in an EV battery system. AEM AirMatrix fuses withstood 450V/450A conditions without any external damage while fuses from Competitor A at 250V/250A and Competitor B at 450V/450A exhibited catastrophic results. In the waveforms above, the current flow (yellow trace) through an AEM AirMatrix fuse drops to zero while Competitor A & B each display secondary current flow that ultimately results in pc board damage. The voltage (green trace) shows an open circuit for the AEM fuse.

	AirMatrix		SolidMatrix			
	QA2410F	QA1206F	QF1206F	QF1206H	QF0603F	QF0603H
Footprint	2410	1206	1206	1206	0603	0603
Characteristic	Fast Acting	Fast Acting	Fast Acting	Time Lag	Fast Acting	Time Lag
Rated Current (A)	0.5 - 20.0	1.5 - 15.0	0.5 - 8.0	1.0 - 8.0	0.5 - 6.0	1.0 - 8.0
Rated Voltage (V)	65 - 250	32 - 65	32 - 63	24 - 63	24 - 63	32
Safety Approvals	UL	UL	UL	UL	UL	UL
Standard	AEC-Q200	AEC-Q200	AEC-Q200	AEC-Q200	AEC-Q200	AEC-Q200

For more information and complete design information, visit:
www.aemcomponents.com/applications/solutions

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