FM13 High-Reliability Solid Body Fuses

AEM, Inc. is the sole U.S. manufacturer of solid body current limiting fuses produced utilizing thick film technology with subsequent screening and qualification for spacecraft/ satellite applications. AEM, Inc.'s Hi-Rel fuses have been selected by most major space programs and have been in orbit for decades with *zero failures*.

Applications

Used in military and commercial satellites and spacecraft including manned space vehicles

- Protection of power supplies, batteries and solar arrays
- Isolation of redundant and branch circuits
- Short circuit protection from fired squib and jettison circuitry

Features

- Consistent clearing times achieved at overload currents regardless of vacuum conditions
- Solid body construction without outgassing and not subjected to the de-rating factors of MIL-STD-975
- Solid body construction capable of withstanding greater vibration and shock exposure without damage
- Positive temperature coefficient of fuse element causing resistance to increase (prior to opening) thereby preventing absolute short to the power source
- Internal construction ensuring that arc, plasma and vapor are contained within the fuse package during overload current conditions
- Groups A/B data supplied with each shipment and Group C inspection optional
- High-reliability fuse series with millions of hours of life testing *without a failure*

Model FM13 Current Limiting Fuses

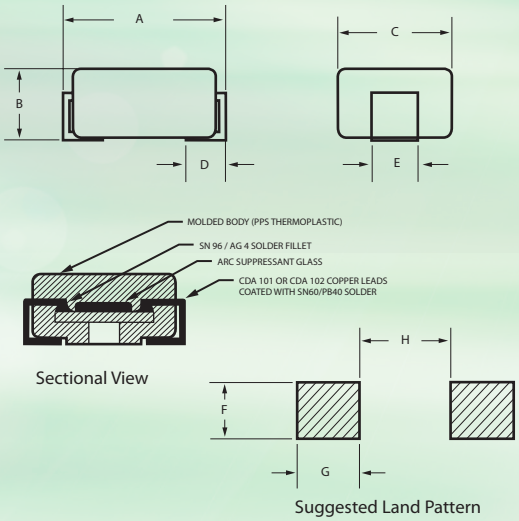


	Figure 1* (inches)	Figure 2* (inches)
A	.330 ± .010.	.475 ± .025
B	.160 Max	.250 Max
C	.235 ± .010	.430 ± .020
D	.075 ± .010	.145 ±.010
E	.094 ± .004	.203 ± .004
F	0.100 ± .010	0.210 ± .010
G	0.110 ± .010	0.180 ± .010
H	0.160 ± .010	0.180 ± .010

* See Table on Page 2

AEM, Inc.'s High Reliability Solid Body Fuses

ELECTRICAL CHARACTERISTICS

PIN Designation/Rating				DC Resistance (Ohms) Note 1			Overload Interrupt Time (Seconds) Nominal Rating - Note 2			Maximum I^2T (Ampere^2 seconds) Nominal Rating - Note 3		
Style	Characteristic	Maximum Voltage (VDC)	Current Rating (AMP)	Min.	Max.	Figure (1 or 2)	250% Nominal Rating	400% Nominal Rating	600% Nominal Rating	250% Nominal Rating	400% Nominal Rating	600% Nominal Rating
FM13	A	72V	1/8A	6.375	10.625	1	.005-30.0	.0005-.015	.000075-.003	2.93	0.004	0.002
FM13	A	72V	1/4A	1.875	3.125	1	.005-30.0	.0005-.015	.000075-.003	11.719	0.015	0.007
FM13	A	72V	3/8A	1.125	1.875	1	.005-.5	.0005-.015	.000075-.003	0.439	0.034	0.015
FM13	A	72V	1/2A	0.675	1.125	1	.005-.5	.0005-.015	.000075-.003	0.781	0.060	0.027
FM13	A	72V	3/4A	0.225	0.375	1	.005-.5	.0005-.015	.000075-.003	1.758	0.135	0.061
FM13	A	72V	1A	0.135	0.225	1	.005-.5	.0005-.015	.000075-.003	3.125	0.240	0.108
FM13	A	72V	1.5A	0.097	0.163	1	.005-.5	.0005-.015	.000075-.003	7.031	0.540	0.243
FM13	A	72V	2.0A	0.045	0.075	1	.005-.5	.0005-.015	.000075-.003	12.5	0.960	0.432
FM13	A	72V	3.0A	0.0262	0.0438	1	.005-.5	.0005-.015	.000075-.003	28.125	2.16	0.972
FM13	A	72V	4.0A	0.0195	0.0325	1	.005-.5	.0005-.015	.000075-.003	50.0	3.84	1.728
FM13	A	72V	5.0A	0.0135	0.0225	1	.005-.5	.0005-.015	.000075-.003	78.125	6.00	2.70
FM13	A	72V	6.0A	0.0100	0.0180	1	.005-.5	.0005-.015	.000075-.003	112.50	8.64	3.888
FM13	A	72V	7.5A	0.0070	0.0110	1	.005-.5	.0005-.015	.000075-.003	175.781	13.50	6.075
FM13	A	72V	10A	0.0046	0.0079	1	.005-.5	.0005-.015	.000075-.003	312.50	24.0	10.8
FM13	A	72V	15A	0.0040	0.0075	2	.005-.5	.0005-.015	.000075-.003	703.125	54.0	24.3
FM13	A	50V	20A	0.0020	0.0056	2	.005-.5	.0005-.015	.000075-.003	1250.0	96.0	43.2
FM13	A	125V	1/8A	6.375	10.625	1	.005-30.0	.0005-.015	.000075-.003	2.93	0.004	0.002
FM13	A	125V	1/4A	1.875	3.125	1	.005-30.0	.0005-.015	.000075-.003	11.719	0.015	0.007
FM13	A	125V	3/8A	1.125	1.875	1	.005-.5	.0005-.015	.000075-.003	0.439	0.034	0.015
FM13	A	125V	1/2A	0.675	1.125	2	.005-.5	.0005-.015	.000075-.003	0.781	0.060	0.027
FM13	A	125V	3/4A	0.225	0.375	2	.005-.5	.0005-.015	.000075-.003	1.758	0.135	0.061
FM13	A	125V	1A	0.090	0.270	2	.005-.5	.0005-.015	.000075-.003	3.125	0.240	0.108
FM13	A	125V	1.5A	0.0850	0.2250	2	.005-.5	.0005-.015	.000075-.003	7.031	0.540	0.243
FM13	A	125V	2.0A	0.0450	0.1350	2	.005-.5	.0005-.015	.000075-.003	12.5	0.960	0.432
FM13	A	125V	3.0A	0.0350	0.1050	2	.005-.5	.0005-.015	.000075-.003	28.125	2.16	0.972
FM13	A	125V	4.0A	0.0300	0.0900	2	.005-.5	.0005-.015	.000075-.003	50.0	3.84	1.728
FM13	A	125V	5.0A	0.0220	0.0680	2	.005-.5	.0005-.015	.000075-.003	78.125	6.00	2.70

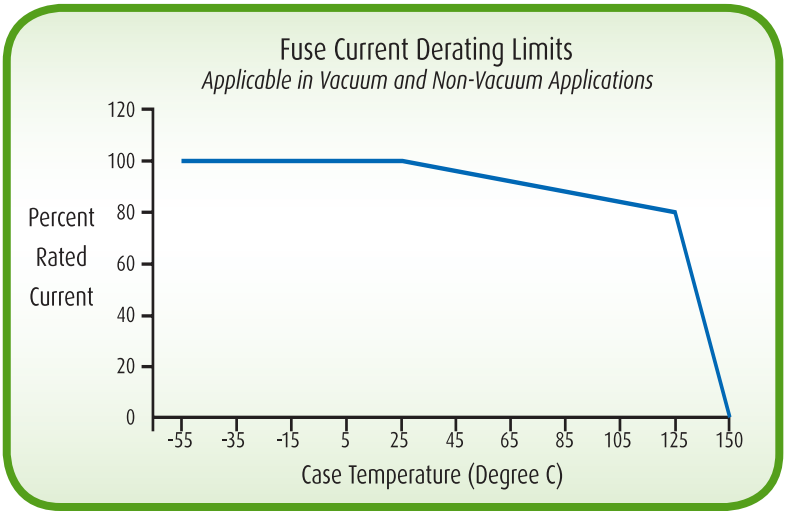
1/ DC resistance is measured with a test current less than 10 milliamperes of current or shall be calculated from the measured voltage drop at a current not exceeding 10% of the rated current of the fuse.

2/ Overloads interrupt times at -55°C and 250 percent overload current shall be as follows:

a. Fuse ratings greater than 1.5 amperes shall open in 5 seconds maximum.

b. Fuse ratings of 1.5 amperes and less shall meet the minimum required clearing time and the maximum clearing times will depend upon fuse mount conditions and heat mount heat sinking efficiency.

3/ Maximum current clearing I^2t at -55°C and 250 percent overload current may be greater than indicated. To calculate maximum I^2t at case temperature of -55°C and 250 percent overload current multiply the I^2 product by the maximum blow times indicated in note 2 above.



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