P600L 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 P600L Series Fuses have been selected by most major space programs and have been in orbit for the past 35 years with *zero failures*.

Applications

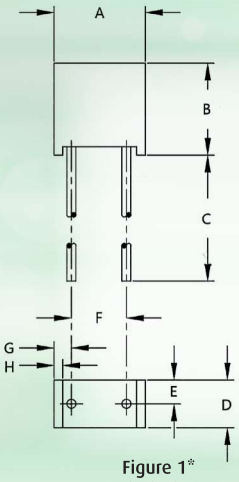
Used in military and commercial satellites and spacecraft including manned space vehicles

- 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 over 29 million hours of life testing *without a failure*
- Available as QPL Certified per MIL-PRF-23419/12

Model P600L Current Limiting Fuses



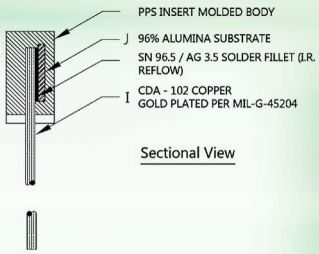


	Figure 1* (inches)	Figure 2* (inches)	Figure 3* (inches)
A	.280 max.	.380 max.	.380 max.
B	.270 max.	.410 max.	.410 max
C	1.50 min.	2.00 min.	2.00 min.
D	.145 max.	.210 max.	.210. max.
E	.070 typ.	.100 typ.	.100 typ.
F	.160 ± .010	.200 ± .010	.200 ± .010
G	.055 typ.	.085 typ.	.087 typ.
H	.025 typ.	.032 typ.	.032 typ.
I	.026 ± .001 Dia.	.051 ± .001 Dia.	.064 ± .001 Dia.
J	.020 typ.	.025 typ.	.025 typ.

* see table on page 2

AEM, Inc.'s High Reliability Solid Body Fuses

ELECTRICAL CHARACTERISTICS

Fuse Part Number/Rating			DC Resistance (Ohms) Note 1			Overload Interrupt Time (Seconds) Nominal Rating - Note 2			Maximum I^2T (Ampere^2 seconds) Nominal Rating - Note 3		
P600L Part No.	Maximum Voltage (VDC)	Current Rating (AMP)	Min.	Max.	Figure (1, 2, or 3)	250% Nominal Rating	400% Nominal Rating	600% Nominal Rating	250% Nominal Rating	400% Nominal Rating	600% Nominal Rating
P600L-72-1/8	72	1/8	6.375	10.625	1	.005-30.0	.0005-.015	.000075-.003	2.930	0.004	0.002
P600L-72-1/4	72	1/4	1.875	3.125	1	.005-30.0	.0005-.015	.000075-.003	11.719	0.015	0.007
P600L-72-3/8	72	3/8	1.125	1.875	1	.01-.300	.001-.015	.00015-.003	0.264	0.034	0.015
P600L-72-1/2	72	1/2	0.675	1.125	1	.01-.300	.001-.015	.00015-.003	0.469	0.060	0.027
P600L-72-3/4	72	3/4	0.225	0.375	1	.01-.300	.001-.015	.00015-.003	1.055	0.135	0.061
P600L-72-1.0	72	1.0	0.135	0.225	1	.01-.300	.001-.015	.00015-.003	1.875	0.240	0.108
P600L-72-1.5	72	1.5	0.097	0.163	1	.01-.300	.001-.015	.00015-.003	4.219	0.540	0.243
P600L-72-2.0	72	2.0	0.045	0.075	1	.01-.300	.001-.015	.00015-.003	7.500	0.960	0.432
P600L-72-3.0	72	3.0	0.0262	0.0438	1	.01-.300	.001-.015	.00015-.003	16.875	2.160	0.972
P600L-72-4.0	72	4.0	0.0195	0.0325	1	.01-.300	.001-.015	.00015-.003	30.000	3.840	1.728
P600L-72-5.0	72	5.0	0.0135	0.0225	1	.01-.300	.001-.015	.00015-.003	46.875	6.000	2.700
P600L-72-6.0	72	6.0	0.0112	0.0188	1	.01-.300	.001-.015	.00015-.003	67.500	8.640	3.888
P600L-72-7.5	72	7.5	0.0082	0.0138	1	.01-.300	.001-.015	.00015-.003	105.469	13.500	6.075
P600L-72-10.0	72	10.0	0.0063	0.0107	2	.01-.300	.001-.015	.00015-.003	187.500	24.000	10.800
P600L-72-15.0	72	15.0	0.004	0.007	2	.01-.300	.001-.015	.00015-.003	421.875	54.000	24.300
P600L-125-1/8	125	1/8	6.375	10.625	1	.005-30.0	.0005-.015	.000075-.003	2.930	0.004	0.002
P600L-125-1/4	125	1/4	1.875	3.125	1	.005-30.0	.0005-.015	.000075-.003	11.719	0.015	0.007
P600L-125-3/8	125	3/8	1.125	1.875	1	.01-.300	.001-.015	.00015-.003	0.264	0.034	0.015
P600L-125-1/2	125	1/2	0.675	1.125	2	.01-.300	.001-.015	.00015-.003	0.469	0.060	0.027
P600L-125-3/4	125	3/4	0.225	0.375	2	.01-.300	.001-.015	.00015-.003	1.055	0.135	0.061
P600L-125-1.0	125	1.0	0.090	0.270	2	.01-.300	.00075-.015	.00010-.003	1.875	0.240	0.108
P600L-125-1.5	125	1.5	0.085	0.225	2	.01-.300	.00075-.015	.00010-.003	4.219	0.540	0.243
P600L-125-2.0	125	2.0	0.045	0.135	2	.01-.300	.00075-.015	.00010-.003	7.500	0.960	0.432
P600L-125-3.0	125	3.0	0.035	0.105	2	.01-.300	.00075-.015	.00010-.003	16.875	2.160	0.972
P600L-125-4.0	125	4.0	0.030	0.090	2	.01-.300	.00075-.015	.00010-.003	30.000	3.840	1.728
P600L-125-5.0	125	5.0	0.022	0.068	2	.01-.300	.00075-.015	.00010-.003	46.875	6.000	2.700
P600L-50-20.0	50	20.0	0.0025	0.0050	3	.01-.300	.001-.015	.00015-.003	750.000	96.000	43.200

1/ DC Resistance is measured at current levels less than or equal to 10% of rated current.

2/ Overload interrupt times at -55°C and 250% overload current shall be as follows:
- a) Fuses with ratings less then 3/8 amperes shall open in 60 seconds maximum.
- b) Fuses with ratings from 3/8 to 1.0 ampere shall open in 10 seconds maximum.
- c) Fuses with ratings greater than 1.0 ampere shall open in 5 seconds maximum.

3/ Maximum I^2T at -55°C and 250% overload current may be greater than indicated. To calculate maximum I^2T at a case temperature of -55°C and 250% overload current, multiply the I^2 product by the maximum blow times indicated in Note 2 above.

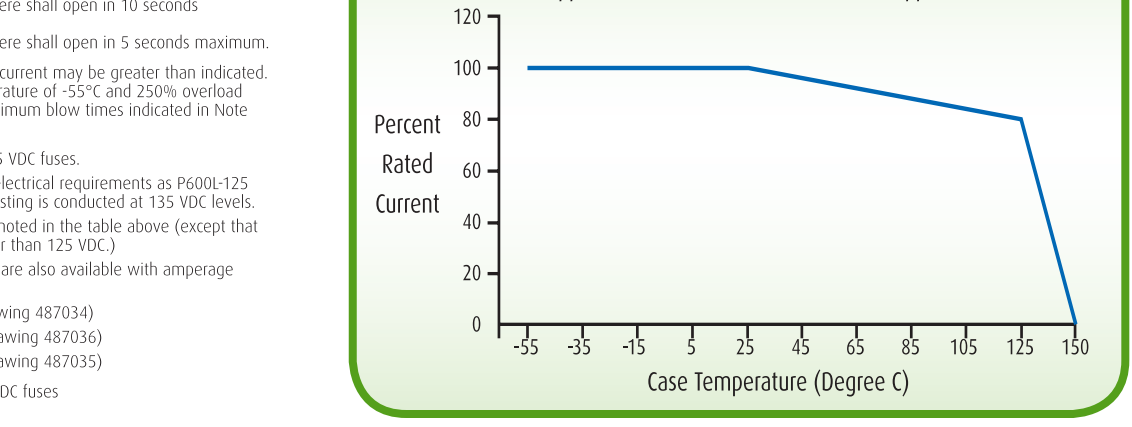
4/ P600L-125 options are also available as 135 VDC fuses.
- a) P600L-135 options will have the same electrical requirements as P600L-125 options except that overload current testing is conducted at 135 VDC levels.
- b) P600L-135 options will be packaged as noted in the table above (except that part marking will reflect 135 VDC rather than 125 VDC.)
- c) Nonstandard 125/135 VDC P600L fuses are also available with amperage ratings of 7.5, 10.0, and 15.0 amperes.

  P600L-125/135-7.5 (See AEM, Inc. drawing 487034)

  P600L-125/135-10.0 (See AEM, Inc. drawing 487036)

  P600L-125/135-15.0 (See AEM, Inc. drawing 487035)

5/ P600L-72 options are also available as 80 VDC fuses (See AEM, Inc. drawing 487072).



AEM, Inc.'s SK406 series is a modified lead configuration of the P600L, providing the design engineer additional flexibility of surface mounting the popular P600L series.

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AS9100

MIL-STD-790

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