



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

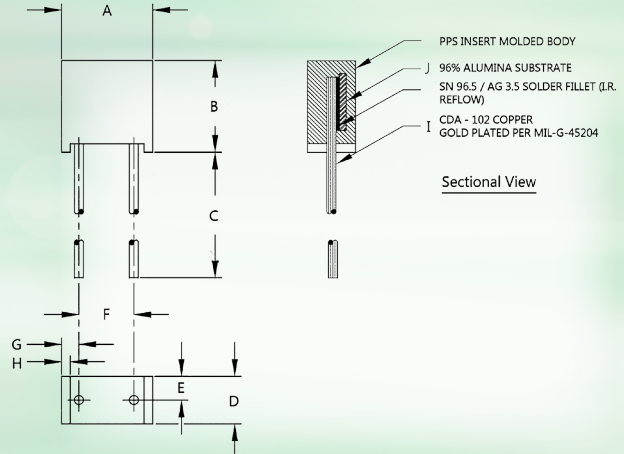
- Protection of power supplies, batteries and solar arrays
- Isolation of redundant and branch circuits
- Short circuit protection from fired squib and jettison circuitry

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. |

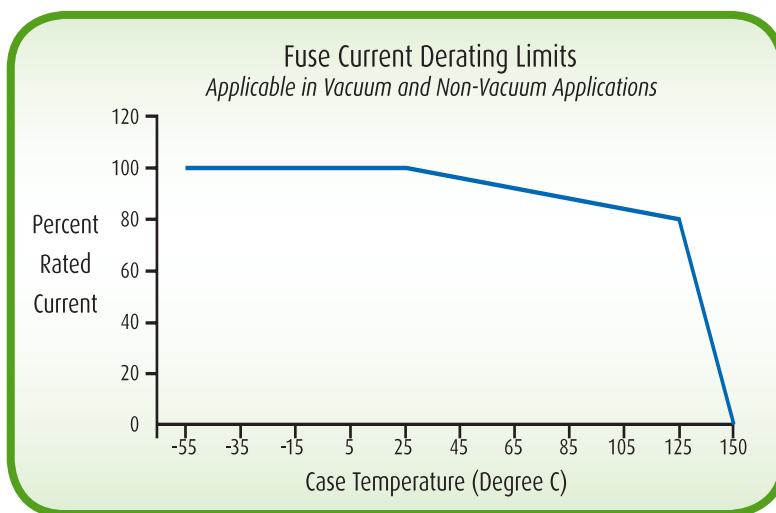
* see table on page 2

AEM, Inc.'s High Reliability Solid Body Fuses

ELECTRICAL CHARACTERISTICS

| Fuse Part Number/Rating | | | DC Resistance (Ohms) Note 1 | | Figure (1, 2, or 3) | Overload Interrupt Time (Seconds) Nominal Rating - Note 2 | | | Maximum I ² T (Ampere ² seconds) Nominal Rating - Note 3 | | |
|-------------------------|-----------------------|----------------------|--------------------------------|--------|---------------------|--|---------------------|---------------------|---|---------------------|---------------------|
| P600L Part No. | Maximum Voltage (VDC) | Current Rating (AMP) | Min. | Max. | | 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 |

- DC Resistance is measured at current levels less than or equal to 10% of rated current.
- Overload interrupt times at -55°C and 250% overload current shall be as follows:
 - Fuses with ratings less than 3/8 amperes shall open in 60 seconds maximum.
 - Fuses with ratings from 3/8 to 1.0 ampere shall open in 10 seconds maximum.
 - Fuses with ratings greater than 1.0 ampere shall open in 5 seconds maximum.
- Maximum I²T at -55°C and 250% overload current may be greater than indicated. To calculate maximum I²T at a case temperature of -55°C and 250% overload current, multiply the I² product by the maximum blow times indicated in Note 2 above.
- P600L-125 options are also available as 135 VDC fuses.
 - P600L-135 options will have the same electrical requirements as P600L-125 options except that overload current testing is conducted at 135 VDC levels.
 - P600L-135 options will be packaged as noted in the table above (except that part marking will reflect 135 VDC rather than 125 VDC.)
 - 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)
- 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.



AS9100



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