

January 16, 1998

TEL:805-498-2111 FAX:805-498-3804 WEB:<http://www.semtech.com>

AXIAL LEADED, HERMETICALLY SEALED, 500 WATT TRANSIENT VOLTAGE SUPPRESSORS

- Low dynamic impedance
- Hermetically sealed in Metoxilite fused metal oxide
- 500 Watt peak pulse power
- 1.5 Watt continuous
- Available in JAN, JANTX and JANTXV versions

QUICK REFERENCE DATA

- $V_{BR\ MIN} = 6.12 - 180V$
- $I_{(BR)} = 5 - 175mA$
- $V_{RWM} = 5.2 - 152V$
- $V_C\ MAX = 11 - 273V$

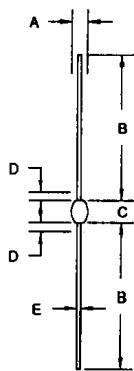
ELECTRIAL SPECIFICATIONS (@ 25°C UNLESS OTHERWISE SPECIFIED)

| Device Type | Minimum Breakdown Voltage $V_{(BR)} @ I_{(BR)}$ | Test Current $I_{(BR)}$ | Working Pk. Reverse Voltage V_{RWM} | Max. Reverse Current I_R | Maximum Clamping Voltage $V_C @ I_P$ | Maximum Pk. Pulse Current I_P $t_p = 8.3mS$ | Temp. Coeff of $V_{(BR)}$ α_{VZ} | Maximum Reverse Current $I_R @ 150^\circ C$ |
|-------------|---|-------------------------|---------------------------------------|----------------------------|--------------------------------------|--|--|---|
| | Volts | mA | Volts | μA | Volts | Amps | %/ $^\circ C$ | μA |
| 1N6102 | 6.12 | 175 | 5.2 | 100 | 11.0 | 45.4 | .05 | 4000 |
| 1N6103 | 6.75 | 175 | 5.7 | 50 | 11.8 | 42.4 | .06 | 750 |
| 1N6104 | 7.38 | 150 | 6.2 | 20 | 12.7 | 39.4 | .06 | 500 |
| 1N6105 | 8.19 | 150 | 6.9 | 20 | 14.0 | 35.7 | .06 | 300 |
| 1N6106 | 9.00 | 125 | 7.6 | 20 | 15.2 | 32.9 | .07 | 200 |
| 1N6107 | 9.90 | 125 | 8.4 | 20 | 16.3 | 30.7 | .07 | 200 |
| 1N6108 | 10.8 | 100 | 9.1 | 20 | 17.7 | 28.2 | .07 | 150 |
| 1N6109 | 11.7 | 100 | 9.9 | 20 | 19.0 | 26.3 | .08 | 150 |
| 1N6110 | 13.5 | 75 | 11.4 | 20 | 21.9 | 22.8 | .08 | 100 |
| 1N6111 | 14.4 | 75 | 12.2 | 20 | 23.4 | 21.4 | .08 | 100 |
| 1N6112 | 16.2 | 65 | 13.7 | 1 | 26.3 | 19.0 | .085 | 100 |
| 1N6113 | 18.0 | 65 | 15.2 | 1 | 29.0 | 17.2 | .085 | 100 |
| 1N6114 | 19.8 | 50 | 16.7 | 1 | 31.9 | 15.7 | .085 | 100 |
| 1N6115 | 21.6 | 50 | 18.2 | 1 | 34.8 | 14.4 | .09 | 100 |
| 1N6116 | 24.3 | 50 | 20.6 | 1 | 39.2 | 12.8 | .09 | 100 |
| 1N6117 | 27.0 | 40 | 22.8 | 1 | 43.6 | 11.5 | .09 | 100 |
| 1N6118 | 29.7 | 40 | 25.1 | 1 | 47.9 | 10.4 | .095 | 100 |
| 1N6119 | 32.4 | 30 | 27.4 | 1 | 52.3 | 9.6 | .095 | 100 |
| 1N6120 | 35.1 | 30 | 29.7 | 1 | 56.2 | 8.9 | .095 | 100 |
| 1N6121 | 38.7 | 30 | 32.7 | 1 | 62.0 | 8.1 | .095 | 100 |
| 1N6122 | 42.3 | 25 | 35.8 | 1 | 67.7 | 7.4 | .095 | 100 |
| 1N6123 | 45.9 | 25 | 38.8 | 1 | 73.5 | 6.8 | .095 | 100 |
| 1N6124 | 50.4 | 20 | 42.6 | 1 | 80.7 | 6.2 | .095 | 100 |
| 1N6125 | 55.8 | 20 | 47.1 | 1 | 89.3 | 5.6 | .100 | 100 |
| 1N6126 | 61.2 | 20 | 51.7 | 1 | 98.0 | 5.1 | .100 | 100 |
| 1N6127 | 67.5 | 20 | 56.0 | 1 | 108.1 | 4.6 | .100 | 100 |
| 1N6128 | 73.8 | 15 | 62.2 | 1 | 118.2 | 4.2 | .100 | 100 |
| 1N6129 | 81.9 | 15 | 69.2 | 1 | 131.1 | 3.8 | .100 | 100 |
| 1N6130 | 90.0 | 12 | 76.0 | 1 | 144.1 | 3.5 | .100 | 100 |
| 1N6131 | 99.0 | 12 | 83.6 | 1 | 158.5 | 3.2 | .100 | 100 |
| 1N6132 | 108.0 | 10 | 91.2 | 1 | 172.9 | 2.9 | .100 | 100 |
| 1N6133 | 117.0 | 10 | 98.8 | 1 | 187.3 | 2.7 | .100 | 100 |
| 1N6134 | 135.0 | 8 | 114.0 | 1 | 216.2 | 2.3 | .100 | 100 |
| 1N6135 | 144.0 | 8 | 121.6 | 1 | 228.8 | 2.2 | .100 | 100 |
| 1N6136 | 162.0 | 5 | 136.8 | 1 | 257.4 | 1.9 | .100 | 100 |
| 1N6137 | 180.0 | 5 | 152.0 | 1 | 286.0 | 1.7 | .100 | 100 |

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These parts are qualified to MIL-S-19500/516 and are preferred parts as listed in MIL-STD-701
They can be supplied fully released as JAN, JANTX and JANTXV versions.

* Parts listed are 10% tolerance. 5% tolerance can be ordered by placing an "A" suffix on part numbers, eg. 1N6110A



| DIM # | DIMENSIONS | | | | NOTE |
|-------|------------|------|--------|------|------|
| | MM | | INCHES | | |
| A | 2.1 | 3.6 | .085 | .140 | - |
| B | 25.4 | 33.0 | 1.00 | 1.30 | - |
| C | 3.5 | 4.7 | .140 | .185 | - |
| D | - | .80 | - | .030 | 1 |
| E | .66 | .84 | .026 | .033 | - |

NOTES:

1. LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

OPERATING TEMP -65°C to +175°C
STORAGE TEMP -65°C to +175°C

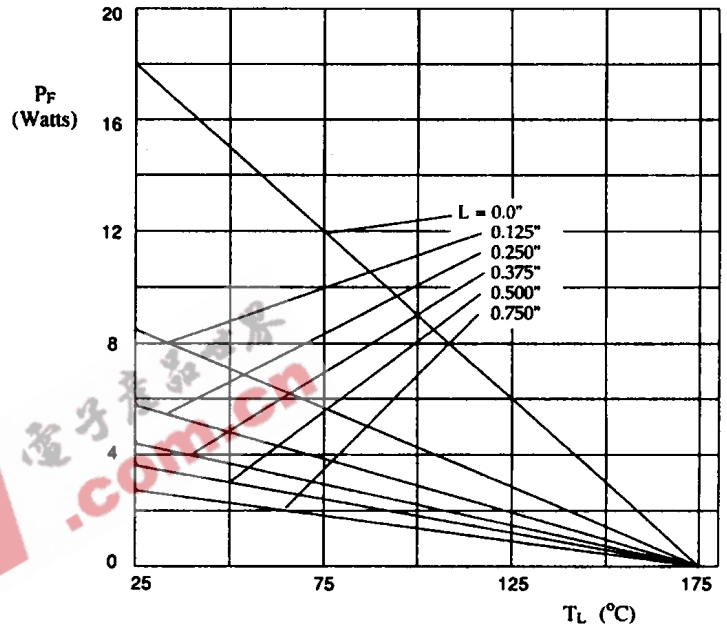


Figure 1. Maximum power versus lead temperature.

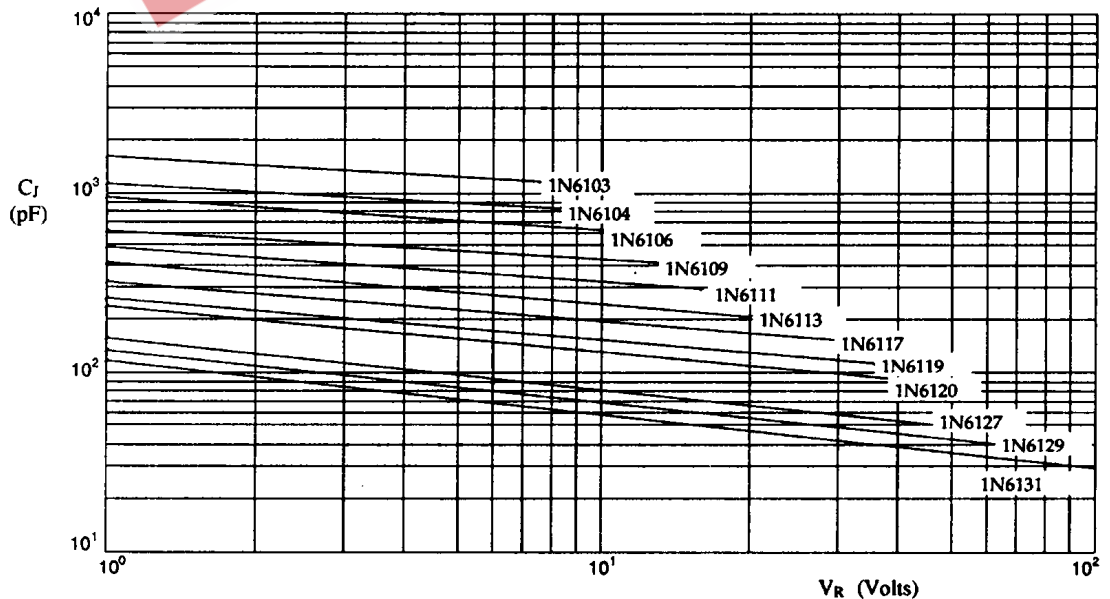


Fig 2. Typical junction capacitance versus reverse voltage.

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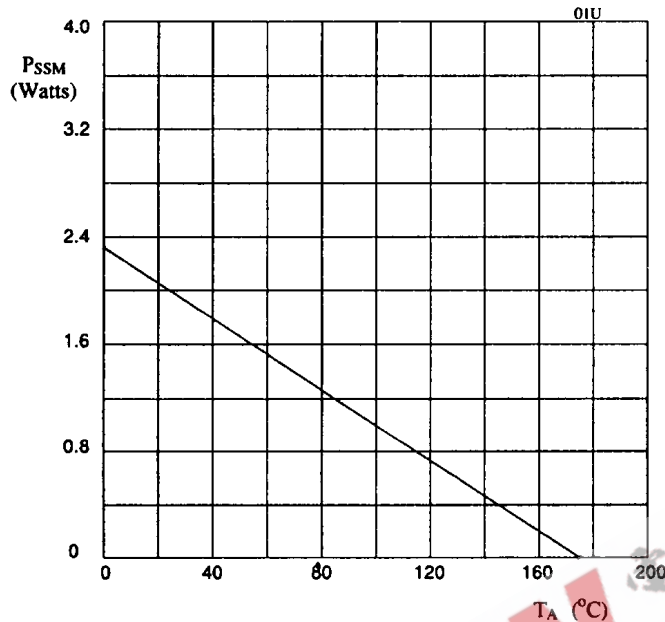


Fig 3. Steady state derating characteristic for free air mounting

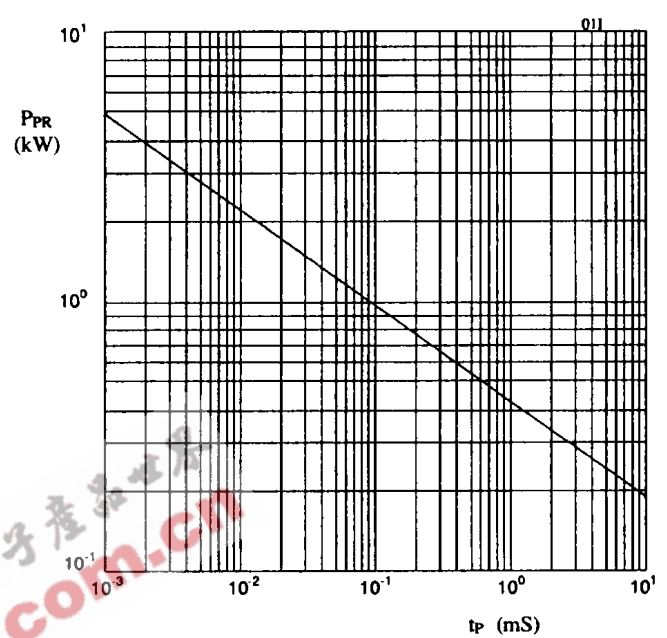


Fig 4. Peak pulse power versus pulse time.

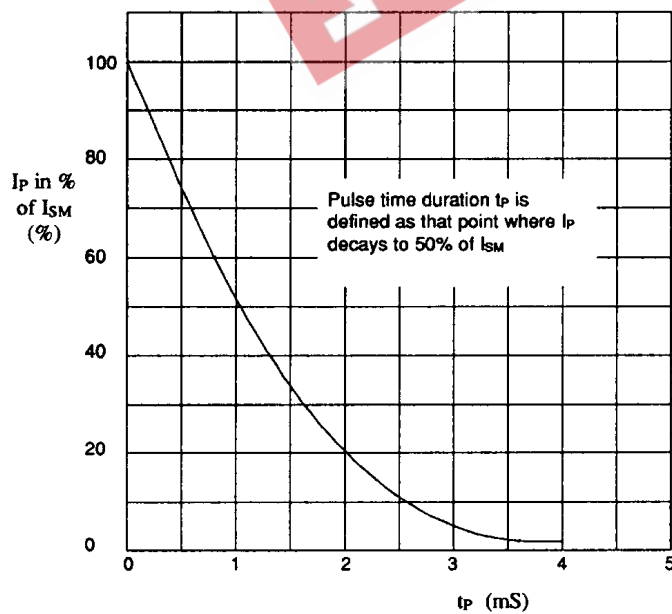


Fig 5. Pulse waveform

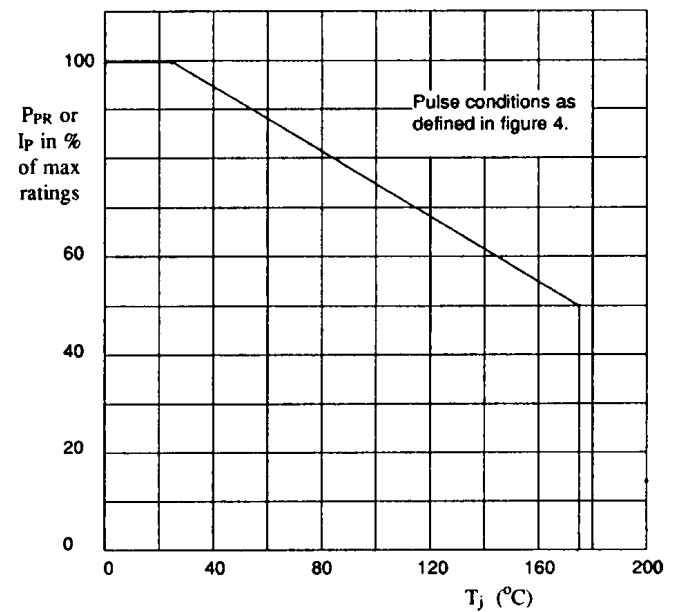


Fig 6. Pulse derating curve