

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

### QUICK REFERENCE DATA

- Low dynamic impedance
  - Hermetically sealed in Metoxillite fused metal oxide
  - 500 Watt peak pulse power
  - 1.5 Watt continuous
  - Available in JAN, JANTX, JANTXV and JANS versions
- $V_{BR\ MIN} = 6.12 - 180V$
  - $I_{(BR)} = 5 - 175mA$
  - $V_{RWM} = 5.2 - 152V$
  - $V_C\ MAX = 11 - 273V$

### ELECTRIAL SPECIFICATIONS (@ 25°C UNLESS OTHERWISE SPECIFIED)

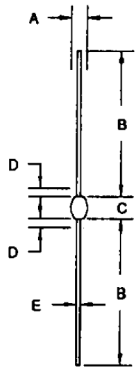
| Device Type | Minimum Breakdown Voltage $V_{(BR)} @ I_{(BR)}$ | Test Current $I_{(BR)}$ | Working Pk. Reverse Voltage $V_{RWM}$ | Max. Reverse Current $I_R$ | Maximum Clamping Voltage $V_C @ I_P$ | Maximum Pk. Pulse Current $I_P$<br>$t_P = 8.3mS$ | Temp. Coeff <sup>t</sup> of $V_{(BR)}$<br>$\alpha_{VZ}$ | Maximum Reverse Current $I_R @ 150^\circ C$ |
|-------------|---|-------------------------|---------------------------------------|----------------------------|--------------------------------------|--|---|---|
|             | Volts   | mA                      | Volts                                 | $\mu A$                    | Volts                                | Amps   | %/°C  | $\mu A$                                     |
| 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   |

January 16, 1998

These parts are qualified to MIL-PRF-19500/516 and are preferred parts as listed in MIL-STD-701

They can be supplied fully released as JAN, JANTX, JANTXV and JANS versions.

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



| DIM <sup>n</sup> | DIMENSIONS |      |        |      | NOTE |
|------------------|------------|------|--------|------|------|
|                  | MM         |      | INCHES |      |      |
| A                | 2.1        | 3.8  | .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:

- LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

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

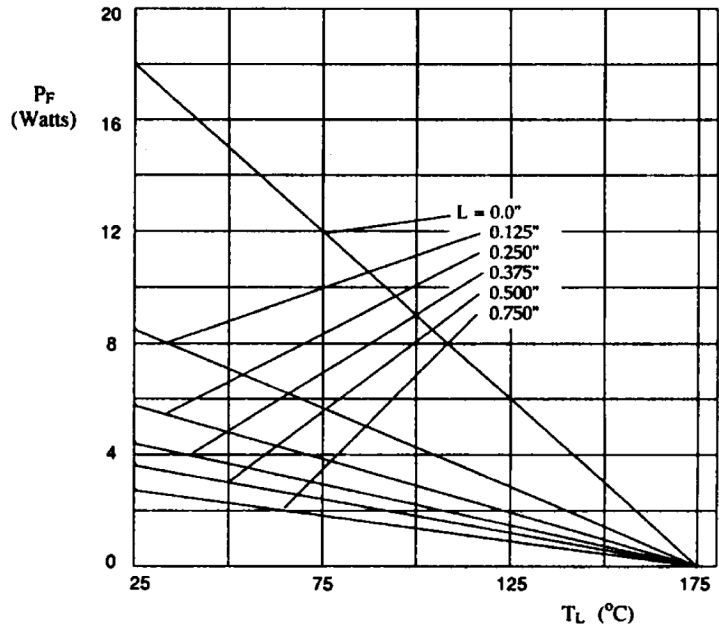


Figure 1. Maximum power versus lead temperature.

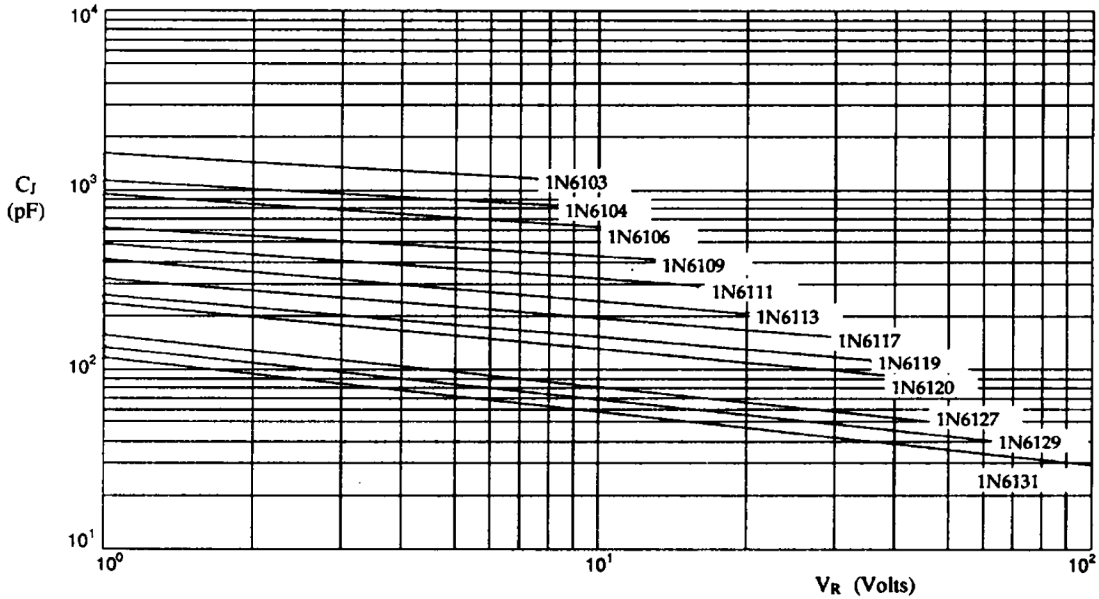


Fig 2. Typical junction capacitance versus reverse voltage.

January 16, 1998

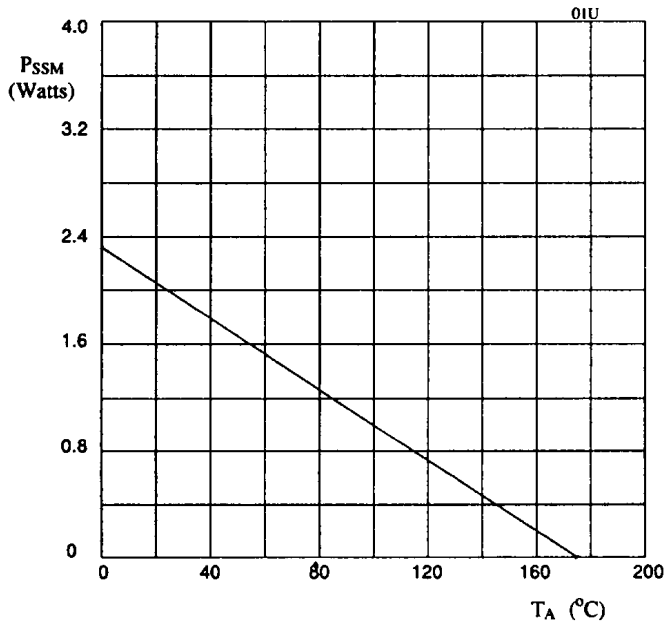


Fig 3. Steady state derating characteristic for free air mounting

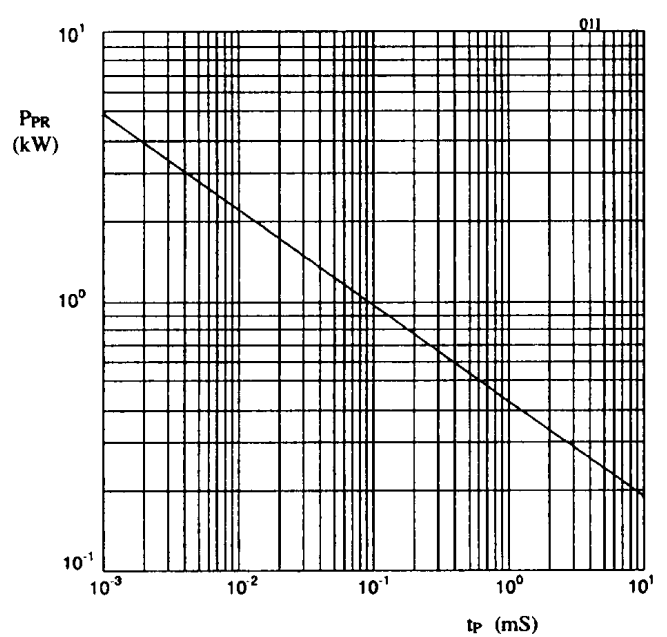


Fig 4. Peak pulse power versus pulse time.

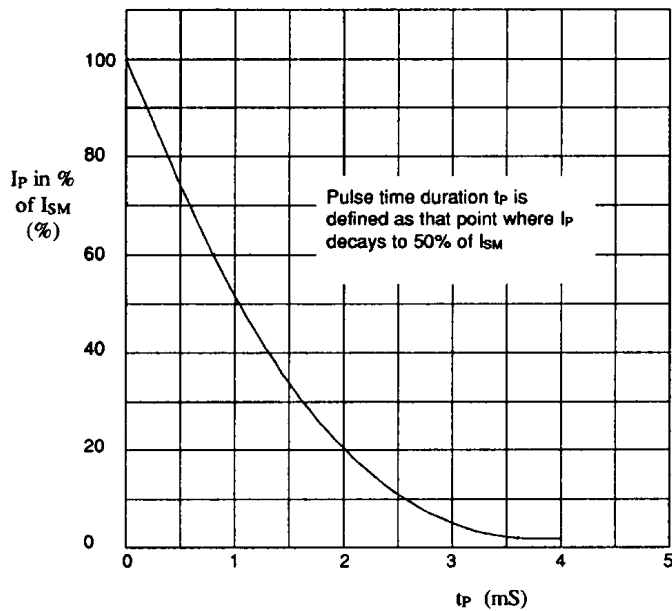


Fig 5. Pulse waveform

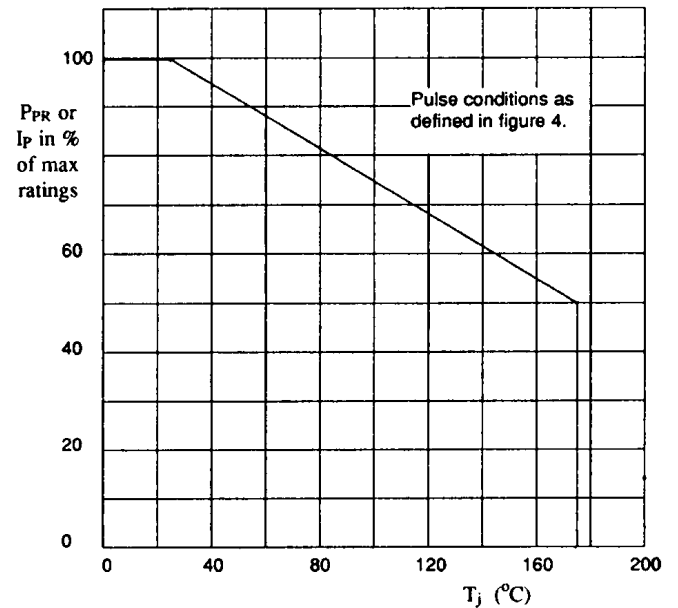


Fig 6. Pulse derating curve