

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

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

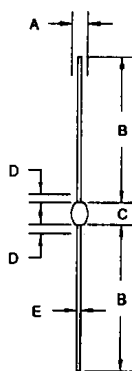
### ELECTRIAL SPECIFICATIONS (@ 25°C UNLESS OTHERWISE SPECIFIED)

| 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 $I_P$<br>$t_P = 8.3mS$ | Temp. Coeff of $V_{(BR)}$<br>$\alpha_{VZ}$ | Maximum Reverse Current $I_R @ 150^\circ C$ |
|-------------|---|-------------------------|---------------------------------------|----------------------------|--------------------------------------|--|--|---|
|             | Volts   | mA                      | Volts                                 | $\mu A$                    | Volts                                | Amps   | %/ $^\circ C$                              | $\mu A$                                     |
| 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   |

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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

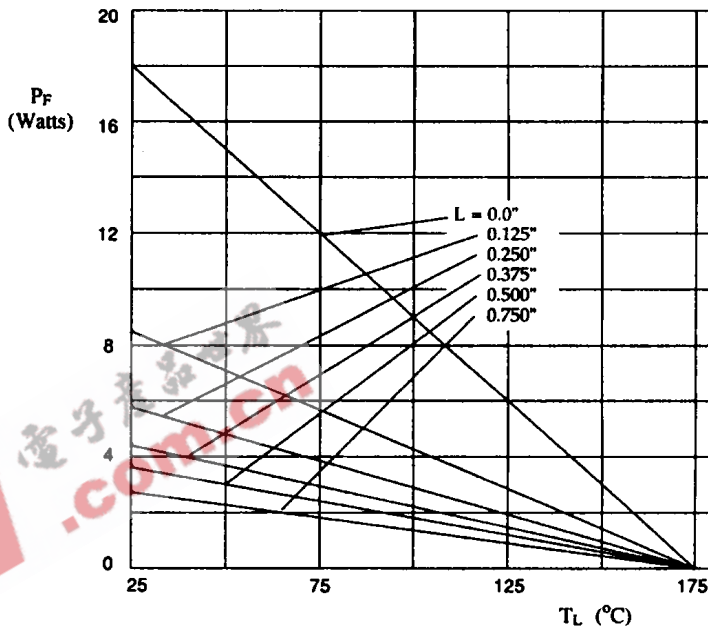


Figure 1. Maximum power versus lead temperature.

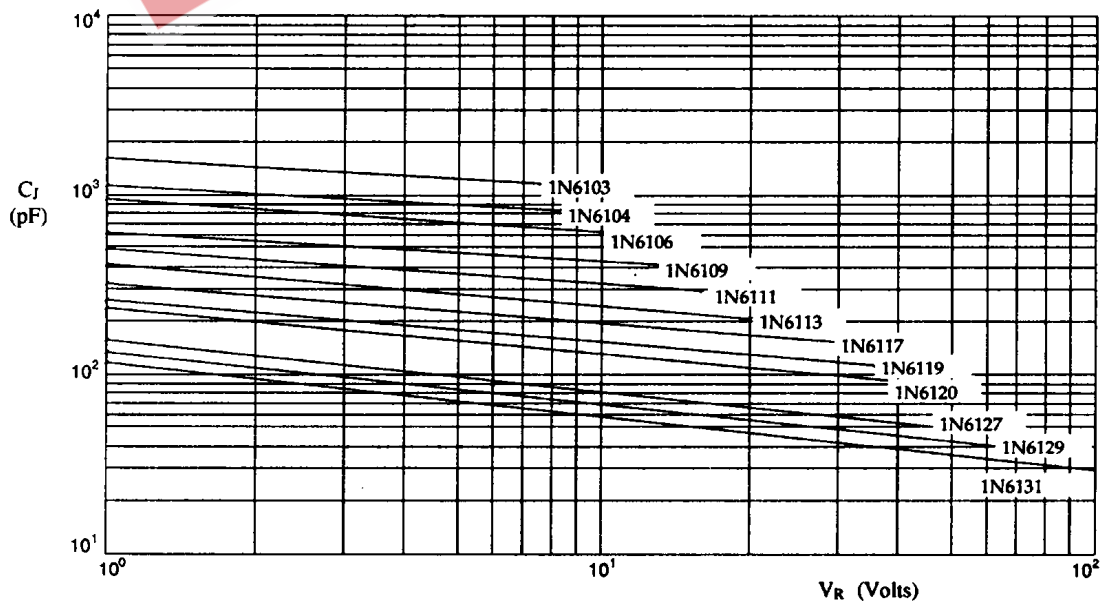


Fig 2. Typical junction capacitance versus reverse voltage.

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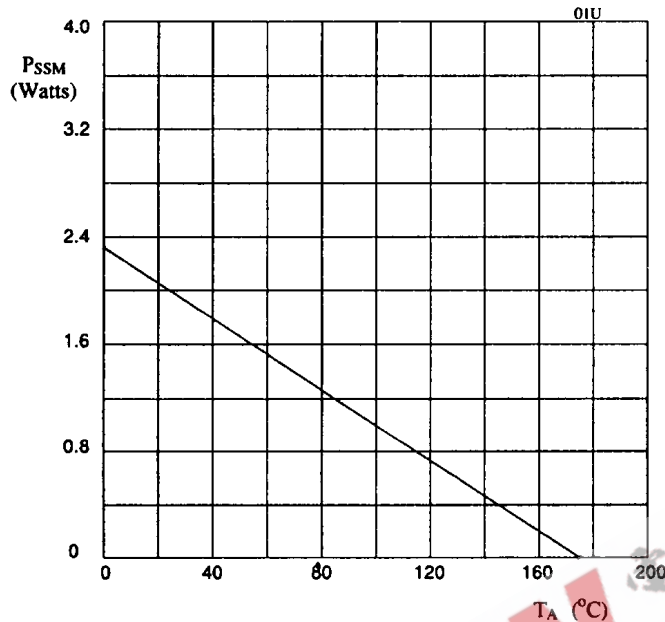


Fig 3. Steady state derating characteristic for free air mounting

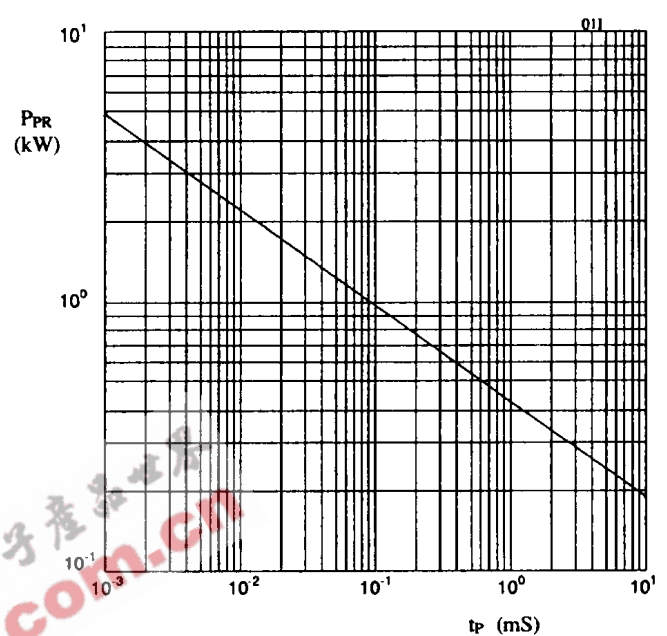


Fig 4. Peak pulse power versus pulse time.

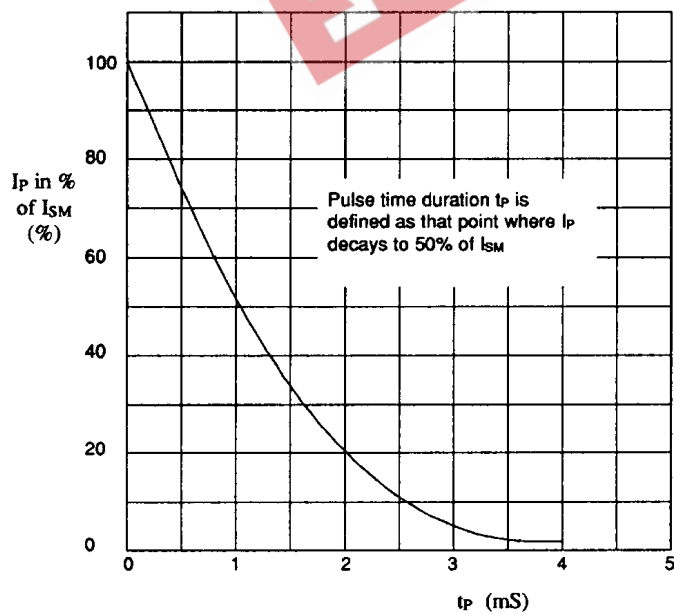


Fig 5. Pulse waveform

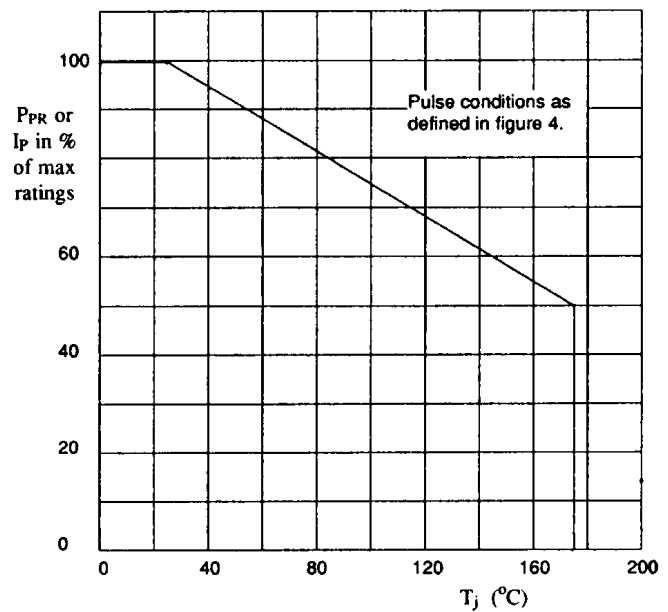


Fig 6. Pulse derating curve