

Microsemi Corp.
The diode experts

SANTA ANA, CA

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(714) 979-8220

ALSO AVAILABLE IN SURFACE MOUNT



1N6103-1N6137
1N6139-1N6173
1N6103A-1N6137A
1N6139A-1N6173A

FEATURES

- HIGH SURGE CAPACITY PROVIDES TRANSIENT PROTECTION FOR MOST CRITICAL CIRCUITS.
- TRIPLE LAYER PASSIVATION.
- SUBMINIATURE.
- METALLURGICALLY BONDED.
- VOIDLESS HERMETICALLY SEALED GLASS PACKAGE
- DYNAMIC IMPEDANCE AND REVERSE LEAKAGE LOWEST AVAILABLE.
- JAN/S/TX/TVX TYPES AVAILABLE PER MIL-S-19500/516.

MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C.
Storage Temperature: -65°C to +200°C.
Surge Power 500W & 1500W
Power @ TL = 75°C (%) 3.0W 500W Type
Power @ TL = 50°C (%) 5.0W 1500W Type

ELECTRICAL CHARACTERISTICS

| SERIES TYPE | BREAKDOWN VOLTAGE V(BR) MIN. | TEST CURRENT I _T mAdc | WORKING PEAK VOLTAGE V _{WM} Vdc | MAX LEAKAGE CURRENT I _D μAdc | MAX CLAMPING VOLTAGE V _C (MAX) V(pk) | MAX PEAK PULSE CURRENT I _p | | MAX. TEMP. COEF. OF V(BR) %/°C | | |
|-------------|------------------------------|----------------------------------|--|---|---|---------------------------------------|-------|--------------------------------|-------|------|
| | | | | | | A(pk) | A(pk) | | | |
| 500W | 1500W | Vdc | mAdc | Vdc | μAdc | V(pk) | A(pk) | A(pk) | %/°C | |
| 1N6103A | 1N6139A | 7.13 | 175 | 5.7 | 50 | 300 | 11.2 | 44.6 | 133.9 | .06 |
| 1N6104A | 1N6140A | 7.79 | 150 | 6.2 | 10 | 100 | 12.1 | 41.3 | 124.0 | .06 |
| 1N6105A | 1N6141A | 8.65 | 150 | 6.9 | 10 | 100 | 13.4 | 37.3 | 111.9 | .06 |
| 1N6106A | 1N6142A | 9.50 | 125 | 7.6 | 10 | 100 | 14.5 | 34.5 | 103.4 | .07 |
| 1N6107A | 1N6143A | 10.45 | 125 | 8.4 | 1 | 10 | 15.6 | 32.0 | 96.2 | .07 |
| 1N6108A | 1N6144A | 11.40 | 100 | 9.1 | 1 | 10 | 16.9 | 29.6 | 88.8 | .07 |
| 1N6109A | 1N6145A | 12.35 | 100 | 9.9 | 1 | 10 | 18.2 | 27.5 | 82.4 | .08 |
| 1N6110A | 1N6146A | 14.25 | 75 | 11.4 | 1 | 10 | 21.0 | 23.8 | 71.4 | .08 |
| 1N6111A | 1N6147A | 15.20 | 75 | 12.2 | 1 | 10 | 22.3 | 22.4 | 67.3 | .08 |
| 1N6112A | 1N6148A | 17.10 | 65 | 13.7 | 1 | 10 | 25.1 | 19.9 | 59.8 | .085 |
| 1N6113A | 1N6149A | 19.0 | 65 | 15.2 | 1 | 5 | 27.7 | 18.0 | 54.2 | .085 |
| 1N6114A | 1N6150A | 20.9 | 50 | 16.7 | 1 | 5 | 30.5 | 16.4 | 49.2 | .085 |
| 1N6115A | 1N6151A | 22.8 | 50 | 18.2 | 1 | 5 | 33.3 | 15.0 | 45.0 | .09 |
| 1N6116A | 1N6152A | 25.7 | 50 | 20.6 | 1 | 5 | 37.4 | 13.4 | 40.1 | .09 |
| 1N6117A | 1N6153A | 28.5 | 40 | 22.8 | 1 | 5 | 41.6 | 12.0 | 36.0 | .09 |
| 1N6118A | 1N6154A | 31.4 | 40 | 25.1 | 1 | 5 | 45.7 | 10.9 | 32.8 | .095 |
| 1N6119A | 1N6155A | 34.2 | 30 | 27.4 | 1 | 5 | 49.9 | 10.0 | 30.1 | .095 |
| 1N6120A | 1N6156A | 37.1 | 30 | 29.7 | 1 | 5 | 53.6 | 9.3 | 28.0 | .095 |
| 1N6121A | 1N6157A | 40.9 | 30 | 32.7 | 1 | 5 | 59.1 | 8.5 | 25.4 | .095 |
| 1N6122A | 1N6158A | 44.7 | 25 | 35.8 | 1 | 5 | 64.6 | 7.7 | 23.2 | .095 |
| 1N6123A | 1N6159A | 48.5 | 25 | 38.8 | 1 | 5 | 70.1 | 7.1 | 21.4 | .095 |
| 1N6124A | 1N6160A | 53.2 | 20 | 42.6 | 1 | 5 | 77.0 | 6.5 | 19.5 | .095 |
| 1N6125A | 1N6161A | 58.9 | 20 | 47.1 | 1 | 5 | 85.3 | 5.9 | 17.6 | .100 |
| 1N6126A | 1N6162A | 64.6 | 20 | 51.7 | 1 | 5 | 97.1 | 5.1 | 15.4 | .100 |
| 1N6127A | 1N6163A | 71.3 | 20 | 56.0 | 1 | 5 | 103.1 | 4.8 | 14.5 | .100 |
| 1N6128A | 1N6164A | 77.9 | 15 | 62.2 | 1 | 5 | 112.8 | 4.4 | 13.3 | .100 |
| 1N6129A | 1N6165A | 86.5 | 15 | 69.2 | 1 | 5 | 125.1 | 4.0 | 12.0 | .100 |
| 1N6130A | 1N6166A | 95.0 | 12 | 76.0 | 1 | 5 | 137.6 | 3.6 | 10.9 | .100 |
| 1N6131A | 1N6167A | 104.5 | 12 | 86.6 | 1 | 5 | 151.3 | 3.3 | 9.9 | .100 |
| 1N6132A | 1N6168A | 114.0 | 10 | 91.2 | 1 | 5 | 165.1 | 3.0 | 9.1 | .100 |
| 1N6133A | 1N6169A | 123.5 | 10 | 98.8 | 1 | 5 | 178.8 | 2.8 | 8.4 | .105 |
| 1N6134A | 1N6170A | 142.5 | 8 | 114.0 | 1 | 5 | 206.3 | 2.4 | 7.3 | .105 |
| 1N6135A | 1N6171A | 152.0 | 8 | 121.6 | 1 | 5 | 218.4 | 2.3 | 6.9 | .105 |
| 1N6136A | 1N6172A | 171.0 | 5 | 136.8 | 1 | 5 | 245.7 | 2.0 | 6.1 | .110 |
| 1N6137A | 1N6173A | 190.0 | 5 | 152.0 | 1 | 5 | 273.0 | 1.8 | 5.5 | .110 |
| Note 4 | | 1 | 1 | 1 | 2 | 3 | 1 | 2 | 3 | 1 |

NOTES: 1. Applies to both 500W and 1500W series. 2. Applies to only 500W series. 3. Applies to only 1500W series. 4. Non --A part has 5% higher max surge voltage, 5% lower V(BR) min., I_{SM}.

BIDIRECTIONAL TRANSIENT SUPPRESSORS

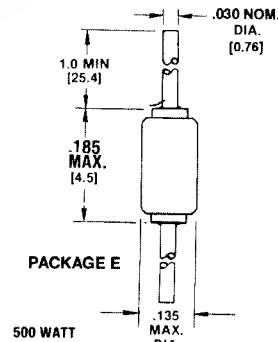


FIGURE 1 (NOTE 2)

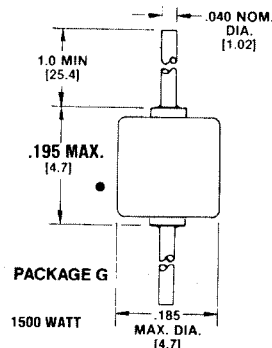


FIGURE 1A (NOTE 3)

MECHANICAL CHARACTERISTICS

Case: Hermetically sealed glass case.
Lead Material: Tinned copper or silver clad copper.
Marking: Body painted, alpha numeric.
Polarity: No marking with 4-13 bi directional devices.

1N6103-1N6137, 1N6139-1N6173, 1N6103A-1N6137A, 1N6139A-1N6173A

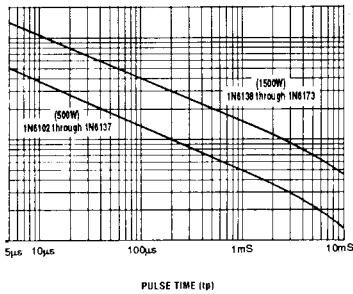


FIGURE 2
PEAK SURGE POWER vs. PULSE TIME

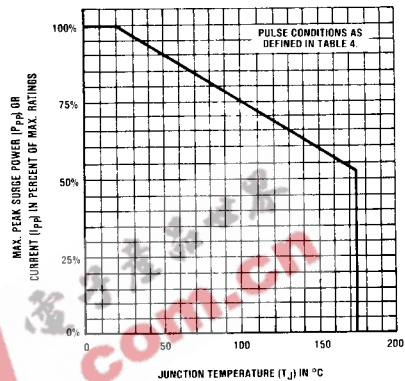


FIGURE 3
PULSE DERATING CURVE

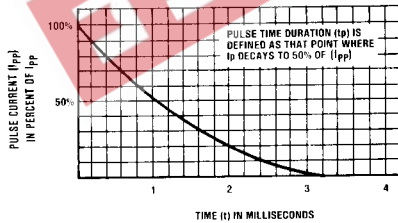


FIGURE 4
PULSE WAVE FORM

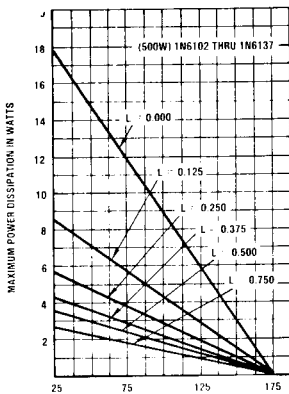


FIGURE 5
MAXIMUM POWER vs. LEAD TEMPERATURE

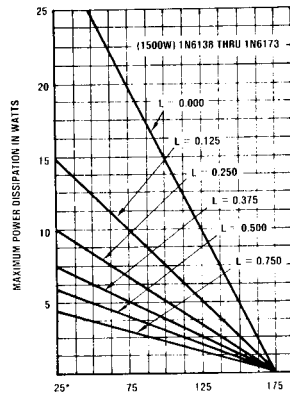


FIGURE 6
STEADY STATE DERATING CURVE
FOR FREE AIR MOUNTING

Maximum lead temperature in °C (T_L) at point "L" from body
(for maximum operating junction temperature with equal two-lead conditions).