

# RECTIFIERS

Military Approved, High Efficiency,  
2.5 Amp and 6.0 Amp

1N5802, 1N5804, 1N5806,  
1N5807, 1N5809, 1N5811  
JAN, JANTX & JANTXV

## FEATURES

- Qualified to MIL-S-19500/477
- PIV: to 150V
- Low Forward Voltage

## DESCRIPTION

This series of high efficiency power rectifiers are particularly applicable to switching regulator power supplies where extremely fast switching and low forward losses are most important.

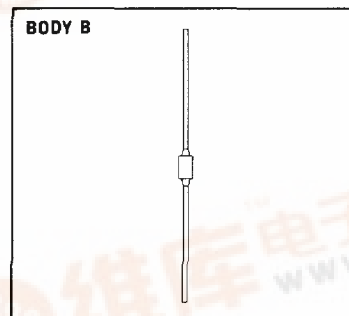
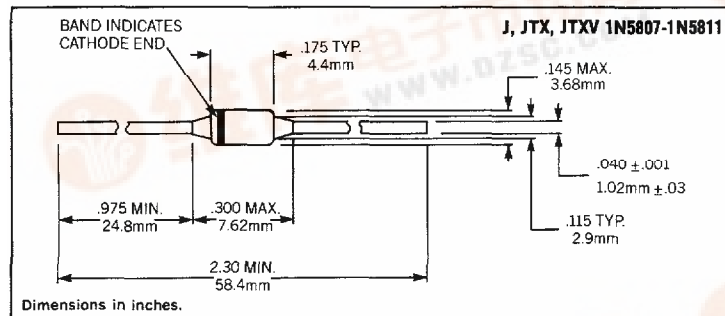
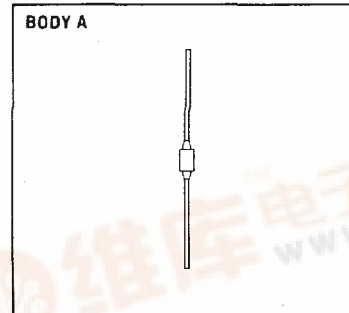
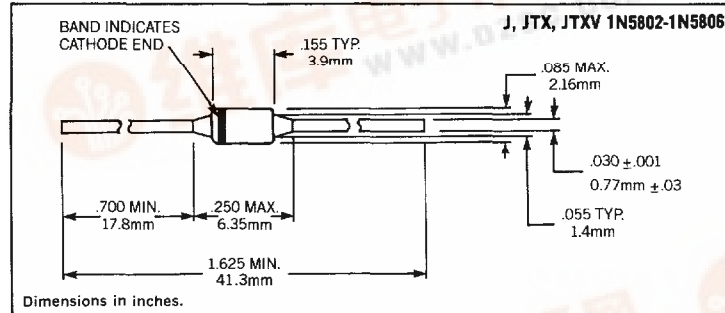
## ABSOLUTE MAXIMUM RATINGS

| Peak Inverse Voltage | 2.5A Series                | 6.A Series                 |
|----------------------|----------------------------|----------------------------|
| 50V                  | JAN, JANTX & JANTXV 1N5802 | JAN, JANTX & JANTXV 1N5807 |
| 100V                 | JAN, JANTX & JANTXV 1N5804 | JAN, JANTX & JANTXV 1N5809 |
| 150V                 | JAN, JANTX & JANTXV 1N5806 | JAN, JANTX & JANTXV 1N5811 |

|  | 2.5A SERIES     | 6A SERIES |
|--|-----------------|-----------|
| Maximum Average D.C. Output Current            |                 |           |
| @ $T_L = 75^\circ\text{C}$ , $L = 3/8"$        | 2.5A            | 6.0A      |
| @ $T_A = 55^\circ\text{C}$                     | 1.0A            | 3.0A      |
| Non-Repetitive Sinusoidal                      |                 |           |
| Surge Current (8.3ms)                          | 35A             | 125A      |
| Operating Temperature Range                    | -65°C to +175°C |           |
| Storage Temperature Range                      | -65°C to +200°C |           |
| Thermal Resistance, $\theta_{JL}$ @ $L = 3/8"$ | 59°C/W          | 35.5°C/W  |

See lead temperature derating curve

## MECHANICAL SPECIFICATIONS



THESE DEVICES ALSO AVAILABLE IN SURFACE MOUNT PACKAGE. SEE SECTION 10

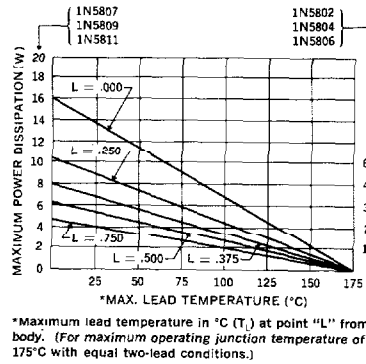
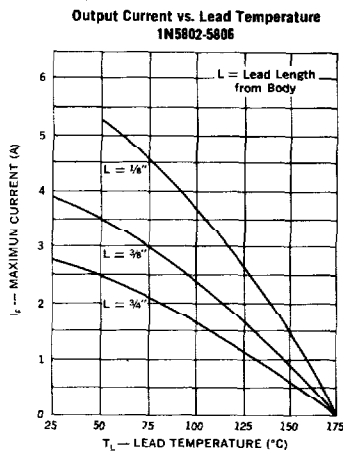
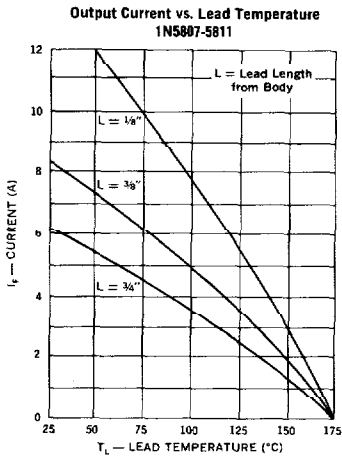
**Microsemi Corp.**  
**Watertown**  
The diode experts



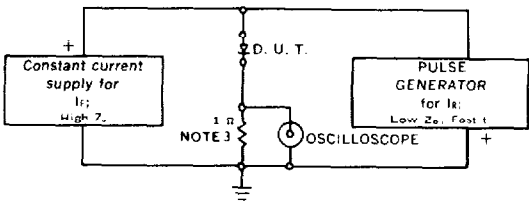
ELECTRICAL SPECIFICATIONS (at 25°C unless noted)

| Type                   | PIV  | Minimum Breakdown Voltage @ 100µA | Forward Voltage           |                       | Maximum Reverse Current @ PIV |       | Maximum Reverse Recovery Time   |
|------------------------|------|-----------------------------------|---------------------------|-----------------------|-------------------------------|-------|---|
|                        |      |                                   | @ 25°C                    | @ 100°C               | 25°C                          | 100°C |   |
| J, JTX, JTXV<br>1N5807 | 50V  | 60V                               | .875V Max.<br>@ 4A (pk)   | .8V Max.<br>@ 4A (pk) | 5µA                           | 150µA | 30ns<br>$I_F = I_R = 1.0A$<br>$I_{REC} = 0.1A$<br>$di/dt = 100A/\mu s \text{ min.}$ |
| J, JTX, JTXV<br>1N5809 | 100V | 110V                              | .925V Max.<br>@ 6A (pk)   |                       |                               |       |   |
| J, JTX, JTXV<br>1N5811 | 150V | 160V                              |                           |                       |                               |       |   |
| J, JTX, JTXV<br>1N5802 | 50V  | 60V                               | .875V Max.<br>@ 1A (pk)   | .8V Max.<br>@ 1A (pk) | 1µA                           | 50µA  | 25ns<br>$I_F = I_R = 0.5A$<br>$I_{REC} = 0.05A$<br>$di/dt = 65A/\mu s \text{ min.}$ |
| J, JTX, JTXV<br>1N5804 | 100V | 110V                              | .975V Max.<br>@ 2.5A (pk) |                       |                               |       |   |
| J, JTX, JTXV<br>1N5806 | 150V | 160V                              |                           |                       |                               |       |   |

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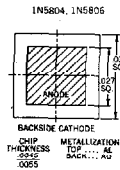
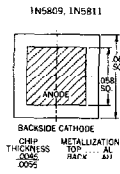
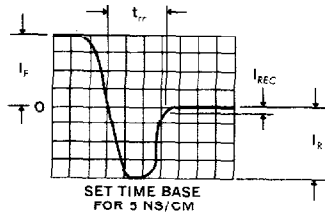


Reverse-Recovery Circuit

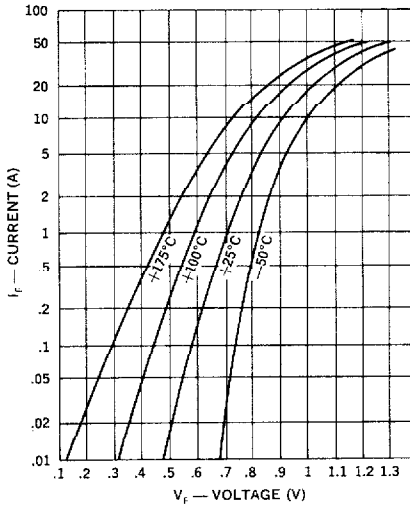


- NOTES:
- Oscilloscope: Rise time  $\leq 3ns$ ; input impedance = 50Ω.
  - Pulse Generator: Rise time  $\leq 8ns$ ; source impedance 10Ω.
  - Current viewing resistor, non-inductive, coaxial recommended.

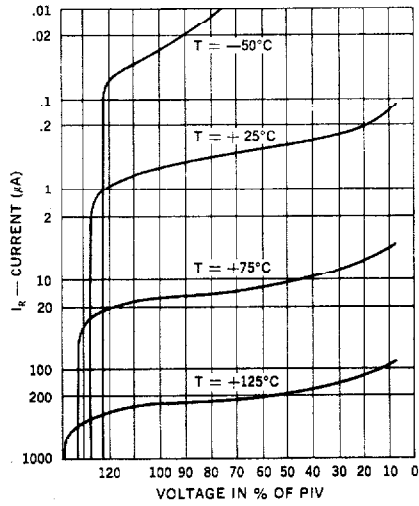
Characteristic Waveform



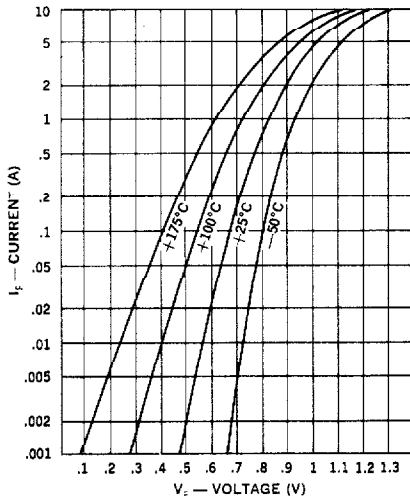
Typical Forward Current vs. Forward Voltage  
JAN & JANTX 1N5807-5811



Typical Reverse Current vs. Voltage  
JAN & JANTX 1N5807-5811



Typical Forward Current vs. Forward Voltage  
JAN & JANTX 1N5802-5806



Typical Reverse Current vs. Voltage  
JAN & JANTX 1N5802-5806

