

**ALSO AVAILABLE IN SURFACE MOUNT**

**Microsemi Corp.**  
The diode experts

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**1N5907 and 1N5908**



**FEATURES**

- 5.0 VOLTS REVERSE STAND-OFF VOLTAGE
- DESIGNED FOR TTL LOGIC PROTECTION
- 1500 WATTS PEAK PULSE POWER DISSIPATION

The 1N5907 TAZ, packaged in a hermetically sealed glass-to-metal package, is available in JAN, JANTX and JANTXV qualified to MIL-STD-19500/500. The 1N5907 and 1N5908 protect TTL, ECL, DTL, MOS and MSI integrated circuits requiring 5.0 volt or lower power supplies. These devices are rated for a peak pulse power of 1500 watts for 1 millisecond.

These devices are specified at high current pulses, such type that would be seen from inductive switching transients. They provide both protection from line transients as well as preventing transients from being injected onto the line. Both hermetic seal and molded types are available.

**MAXIMUM RATINGS**

1500 Watts of Peak Pulse Power dissipation at 25°C (see derating curve)  
 $t_{clamping}$  (0 volts to BV min): Less than  $1 \times 10^{-12}$  second (theoretical)  
 Operating and Storage temperatures: -65° to +175°C  
 Forward surge rating: half cycle 200amps, 1/120 second at 25°C  
 Steady State power dissipation:  
 1N5907 — 1.0 watt  
 1N5908 — 5.0 watts at  $T_L = 75^\circ C$ ,  
 Lead Length = 3/8"  
 Repetition rate (duty cycle): 1N5907 — .01%, 1N5908 — .05%

**ELECTRICAL CHARACTERISTICS @ 25°C**

JEDEC TYPE NUMBER	REVERSE STAND-OFF VOLTAGE (NOTE 1) VRM VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1 mA V(BR) VOLTS	MAXIMUM REVERSE LEAKAGE $I_{R0} @ V_{RM}$ $\mu A$	MAXIMUM CLAMPING VOLTAGE @ IPP1 (FIG. 3) VC VOLTS	PEAK PULSE CURRENT (FIG. 3) IPP1 A	MAXIMUM CLAMPING VOLTAGE @ IPP2 (FIG. 3) VC VOLTS	PEAK PULSE CURRENT (FIG. 3) IPP2 A	MAXIMUM CLAMPING VOLTAGE @ IPP3 (FIG. 3) VC VOLTS	PEAK PULSE CURRENT (FIG. 3) IPP3 A
*1N5907	5.0	6.0	300	7.6	30	8.0	60	8.5	120
1N5908	5.0	6.0	300	7.6	30	8.0	60	8.5	120

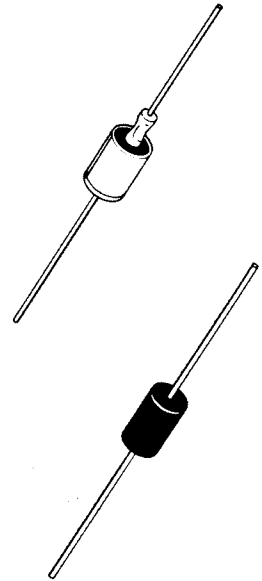
\* Available in JAN, JTX & JTXV per MIL-S-19500/500.

Clamping Factor: 1.33 at full rated power  
 1.20 at 50% rated power

Clamping Factor: The ratio of the actual  $V_C$  (Clamping Voltage) to the  $V_{(BR)}$  (Breakdown Voltage) as measured on a specific device.

Capacitance: 15,000 pF at 0 Volts (typical).

**TRANSIENT ABSORPTION ZENER**



**MECHANICAL CHARACTERISTICS**

CASE: Standard DO-13 package, metal, hermetically sealed. (1N5907)  
 Molded Case (1N5908)

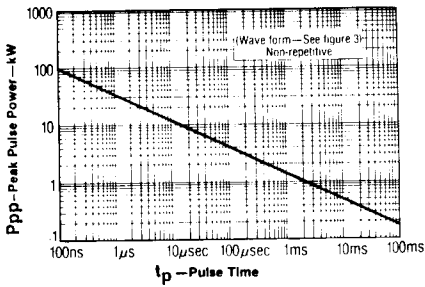
1N5908 (only) also available in surface mount

POLARITY: Cathode connected to case. Polarity indicated by diode symbol.

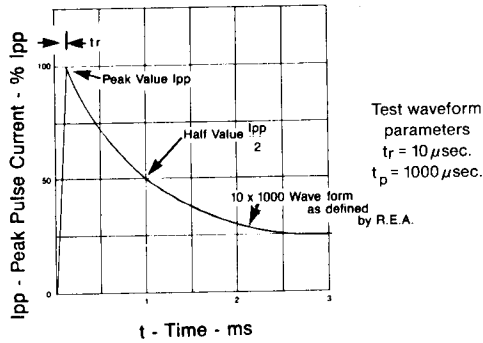
WEIGHT: 1.5 grams (Appx.)

MOUNTING POSITION: Any.

# 1N5907 and 1N5908

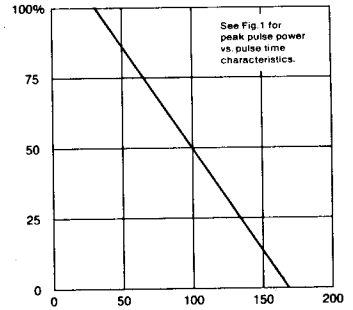


**FIGURE 1**  
PEAK PULSE POWER  
VS. PULSE TIME

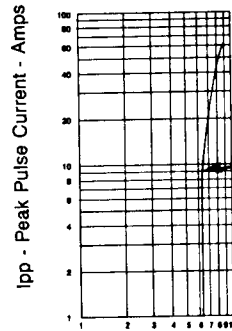


**FIGURE 3**  
PULSE WAVEFORM

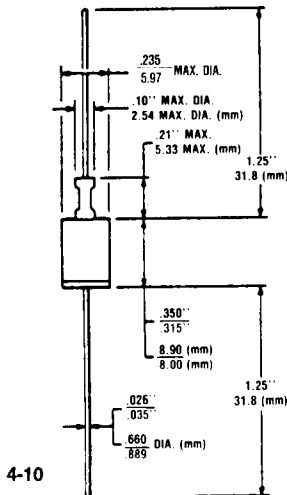
Peak Pulse Power (Pp) or Current (Ipp)  
in percent of 25°C rating



T - Temperature - °C  
**FIGURE 2**  
DERATING CURVE



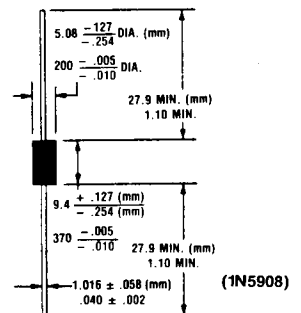
**FIGURE 4**  
TYPICAL CLAMPING VOLTAGE ( $V_C$ )  
VS. PEAK PULSE CURRENT ( $I_{PP}$ )



(1N5907) CASE DO-13

## PACKAGE DIMENSIONS

**Note 1:** A TAZ is normally selected according to the reverse "Stand Off Voltage"  $V_{RM}$  which should be equal to or greater than the DC or continuous peak operating voltage level.



(1N5908)

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