

HIGH RELIABILITY SILICON POWER RECTIFIER

Qualified per MIL-PRF-19500/162

- Glass Passivated Die
- Glass to Metal Seal Construction
- VRRM 200 to 1000 Volts

DEVICES

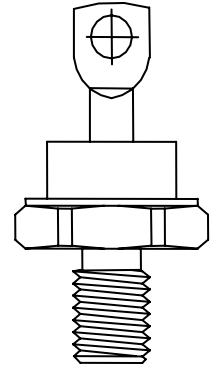
| | | | |
|---------------|---------------|----------------|----------------|
| 1N1614 | 1N4458 | 1N1614R | 1N4458R |
| 1N1615 | 1N4459 | 1N1615R | 1N4459R |
| 1N1616 | | 1N1616R | |

LEVELS

JAN
JANTX

ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

| Parameters / Test Conditions | Symbol | Value | Unit |
|--|-----------------|--|--------------------|
| Peak Repetitive Reverse Voltage | V_{RWM} | 200 | V |
| 1N1614 1N1614R | | 400 | |
| 1N1615 1N1615R | | 600 | |
| 1N1616 1N1616R | | 800 | |
| 1N4458 1N4458R | | 1000 | |
| Average Forward Current, $T_C = 150^\circ$ | I_F | 15 | A |
| Peak Surge Forward Current @ $t_p = 8.3\text{ms}$, half sinewave, $T_C = 150^\circ\text{C}$ | I_{FSM} | 100 | A |
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 4.5 | $^\circ\text{C/W}$ |
| Operating Case Temperature Range | T_j | -65°C to 175°C | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -65°C to 175°C | $^\circ\text{C}$ |



DO-203AA (DO-4)

ELECTRICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$, unless otherwise noted)

| Parameters / Test Conditions | Symbol | Min. | Max. | Unit | |
|---|----------|------|------|---------------|----------------|
| Forward Voltage $I_{FM} = 15\text{A}$, $T_C = 25^\circ\text{C}^*$ | V_{FM} | | 1.5 | V | |
| Reverse Current | I_{RM} | | 50 | μA | |
| $V_{RM} = 200$, $T_C = 25^\circ\text{C}$ | | | | | 1N1614 1N1614R |
| $V_{RM} = 400$, $T_C = 25^\circ\text{C}$ | | | | | 1N1615 1N1615R |
| $V_{RM} = 600$, $T_C = 25^\circ\text{C}$ | | | | | 1N1616 1N1616R |
| $V_{RM} = 800$, $T_C = 25^\circ\text{C}$ | | | | | 1N4458 1N4458R |
| $V_{RM} = 1000$, $T_C = 25^\circ\text{C}$ | | | | | 1N4459 1N4459R |
| Reverse Current | I_{RM} | | 500 | μA | |
| $V_{RM} = 200$, $T_C = 150^\circ\text{C}$ | | | | | 1N1614 1N1614R |
| $V_{RM} = 400$, $T_C = 150^\circ\text{C}$ | | | | | 1N1615 1N1615R |
| $V_{RM} = 600$, $T_C = 150^\circ\text{C}$ | | | | | 1N1616 1N1616R |
| $V_{RM} = 800$, $T_C = 150^\circ\text{C}$ | | | | | 1N4458 1N4458R |
| $V_{RM} = 1000$, $T_C = 150^\circ\text{C}$ | | | | | 1N4459 1N4459R |

* Pulse test: Pulse width 300 μsec , Duty cycle 2%

Note:

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GRAPHS

FIGURE 1

TYPICAL FORWARD CHARACTERISTICS

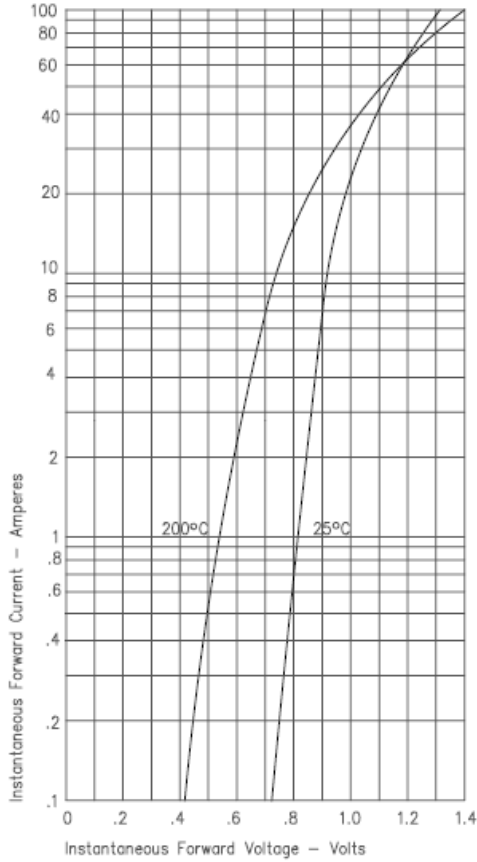


FIGURE 3

FORWARD CURRENT DERATING

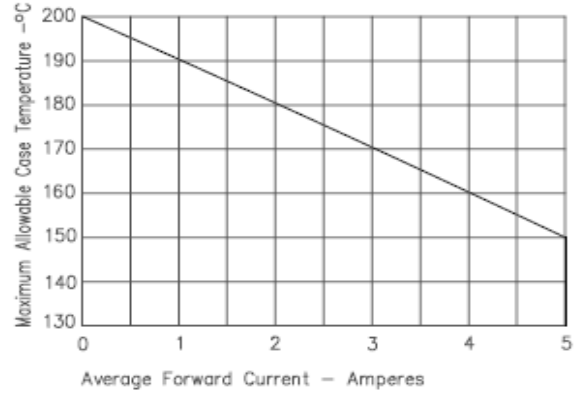


FIGURE 4

TRANSIENT THERMAL IMPEDANCE

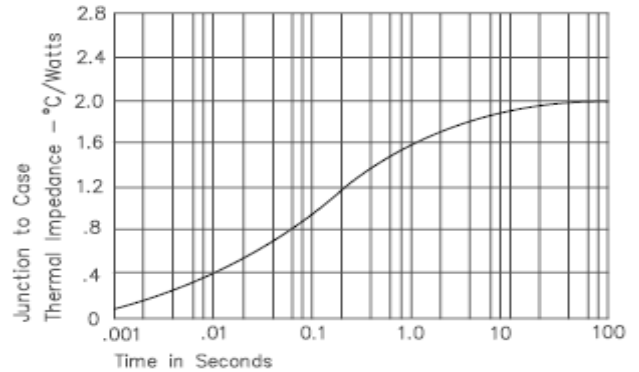
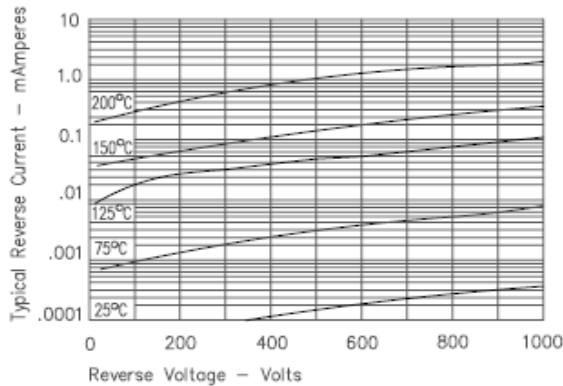


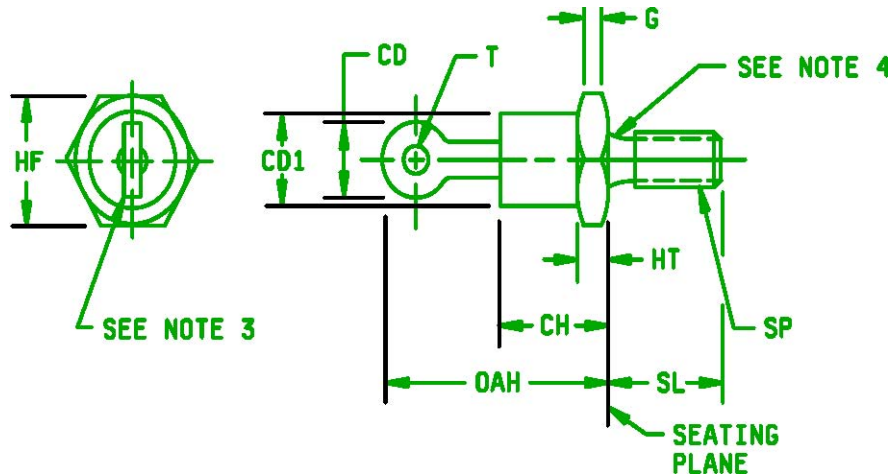
FIGURE 2

TYPICAL REVERSE CHARACTERISTICS



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PACKAGE DIMENSIONS



NOTES:

1. Dimensions are in inches.
2. Millimeter equivalents are given for general information only.
3. Angular orientation of this terminal is undefined.
4. Diameter of unthreaded portion .189 inch (4.80 mm) maximum; .163 inch (4.14 mm) minimum.
5. The A.S.A. thread reference is 10-32UNF2A (unplated).
6. The maximum diameter of plated threads shall be basic pitch diameter .169 inch (4.29 mm).
7. Unit shall not be damaged by torque of 15 inch-pound applied to 10-32NF2B nut assembled on thread.
8. Complete threads shall extend to within 2.5 threads of the seating plane.
9. Terminal end shape is unrestricted.
10. In accordance with ASME Y14.5M, diameters are equivalent to ϕx symbology.

| Symbol | Dimensions | | | | Notes |
|--------|------------|------|-------------|-------|-------|
| | Inches | | Millimeters | | |
| | Min | Max | Min | Max | |
| CD | | .250 | | 6.35 | 9 |
| CD1 | | .424 | | 10.77 | |
| CH | | .405 | | 10.29 | |
| G | .060 | | 1.52 | | |
| HF | .424 | .437 | 10.77 | 11.10 | |
| HT | .075 | .175 | 1.91 | 4.45 | |
| OAH | | .800 | | 20.32 | |
| SP | | | | | 6,7,8 |
| SL | .422 | .453 | 10.72 | 11.51 | |
| T | .060 | | 1.52 | | |

Physical dimensions