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## 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

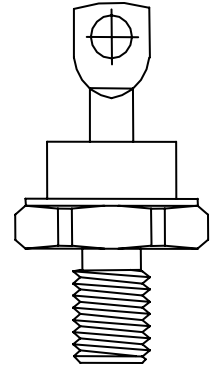
<b>1N1614</b>	<b>1N4458</b>	<b>1N1614R</b>	<b>1N4458R</b>
<b>1N1615</b>	<b>1N4459</b>	<b>1N1615R</b>	<b>1N4459R</b>
<b>1N1616</b>		<b>1N1616R</b>	

### 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	$^\circ\text{C}/\text{W}$
Operating Case Temperature Range	$T_j$	$-65^\circ\text{C}$ to $175^\circ\text{C}$	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	$-65^\circ\text{C}$ to $175^\circ\text{C}$	$^\circ\text{C}$



**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	$\mu\text{A}$	
$V_{RM} = 200$ , $T_C = 25^\circ\text{C}$					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	$\mu\text{A}$	
$V_{RM} = 200$ , $T_C = 150^\circ\text{C}$					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  $\mu\text{sec}$ , Duty cycle 2%

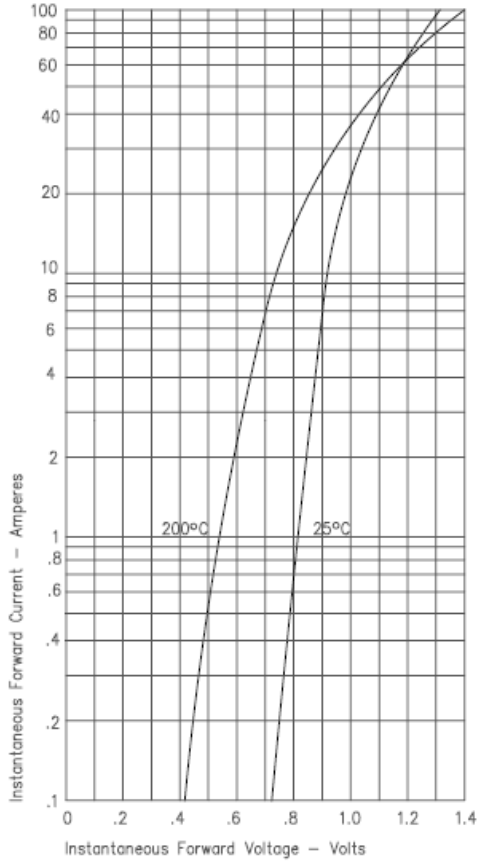
**Note:**

## HIGH RELIABILITY SILICON POWER RECTIFIER

### ▶ GRAPHS

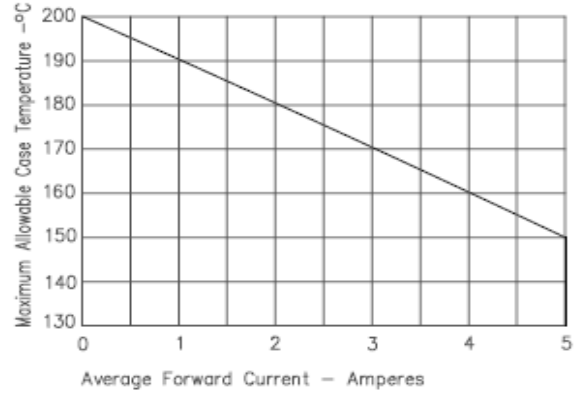
**FIGURE 1**

**TYPICAL FORWARD CHARACTERISTICS**



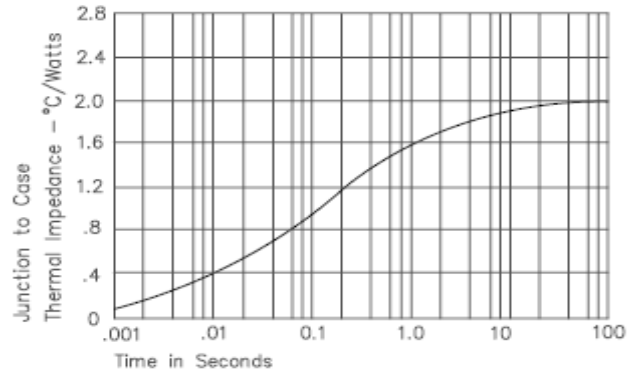
**FIGURE 3**

**FORWARD CURRENT DERATING**



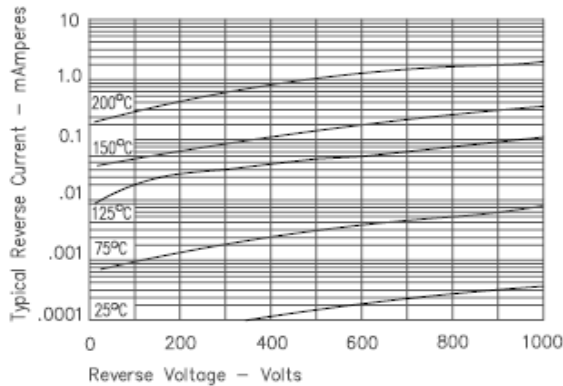
**FIGURE 4**

**TRANSIENT THERMAL IMPEDANCE**



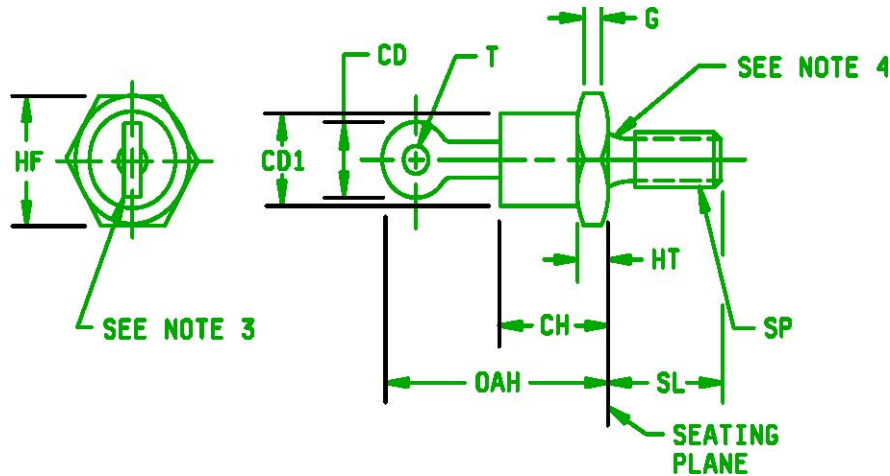
**FIGURE 2**

**TYPICAL REVERSE CHARACTERISTICS**



## HIGH RELIABILITY SILICON POWER RECTIFIER

### 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  $\phi x$  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