

## MECHANICAL and PACKAGING

- CASE: Hermetically sealed glass case package.
- TERMINALS: Tin/lead plated or RoHS compliant matte-tin (on commercial grade only) over copper clad steel. Solderable per MIL-STD-750, method 2026.
- POLARITY: Cathode end is banded.
- MOUNTING: The axial coefficient of expansion (COE) of this device is approximately +6PPM/°C. The COE of the mounting surface system should be selected to provide a suitable match with this device.
- MARKING: Part number.
- TAPE & REEL option: Standard per EIA-296. Consult factory for quantities.
- WEIGHT: 0.2 grams.
- See [Package Dimensions](#) on last page.

## PART NOMENCLATURE

**JAN 1N4148 UR -1 (e3)**

### Reliability Level

JAN = JAN level  
JANTX = JANTX level  
JANTXV = JANTXV level  
See 1N6642US for JANS level  
Blank = Commercial grade

### JEDEC type number

(see [Electrical Characteristics](#) table)

### RoHS Compliance

e3 = RoHS compliant (on commercial grade only)  
Blank = non-RoHS compliant

### Metallurgically Bonded

### MELF Surface Mount

## SYMBOLS & DEFINITIONS

Symbol	Definition
$I_R$	Reverse Current: The maximum reverse (leakage) current that will flow at the specified voltage and temperature.
$I_o$	Average Rectified Forward Current: The output current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
$t_{rr}$	Reverse Recovery Time: The time interval between the instant the current passes through zero when changing from the forward direction to the reverse direction and a specified decay point after a peak reverse current occurs.
$V_F$	Forward Voltage: The forward voltage the device will exhibit at a specified current (typically shown as maximum value).
$V_R$	Reverse Voltage: The reverse voltage dc value, no alternating component.
$V_{RWM}$	Working Peak Reverse Voltage: The maximum peak voltage that can be applied over the operating temperature range excluding all transient voltages (ref JESD282-B). Also sometimes known as PIV.

## ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise noted

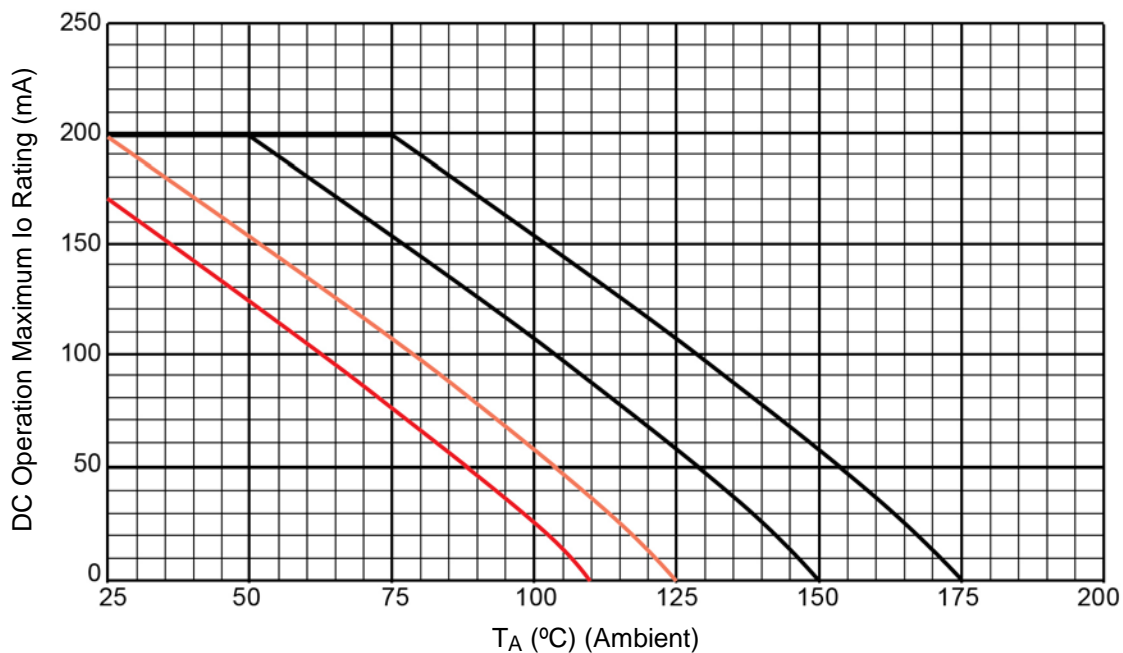
FORWARD VOLTAGE $V_{F1}$ @ $I_F=10$ mA	FORWARD VOLTAGE $V_{F2}$ @ $I_F=100$ mA	REVERSE RECOVERY TIME $t_{rr}$ (Note 1)	FORWARD RECOVERY TIME $t_{fr}$ (Note 2)	REVERSE CURRENT $I_{R1}$ @ 20 V	REVERSE CURRENT $I_{R2}$ @ 75 V	REVERSE CURRENT $I_{R3}$ @ 20 V $T_A=150^\circ\text{C}$	REVERSE CURRENT $I_{R4}$ @ 75 V $T_A=150^\circ\text{C}$	CAPACITANCE C (Note 3)	CAPACITANCE C (Note 4)
V	V	ns	ns	nA	$\mu\text{A}$	$\mu\text{A}$	$\mu\text{A}$	pF	pF
0.8	1.2	5	20	25	0.5	35	75	4.0	2.8

**NOTE 1:**  $I_F = I_R = 10$  mA,  $R_L = 100$  Ohms.

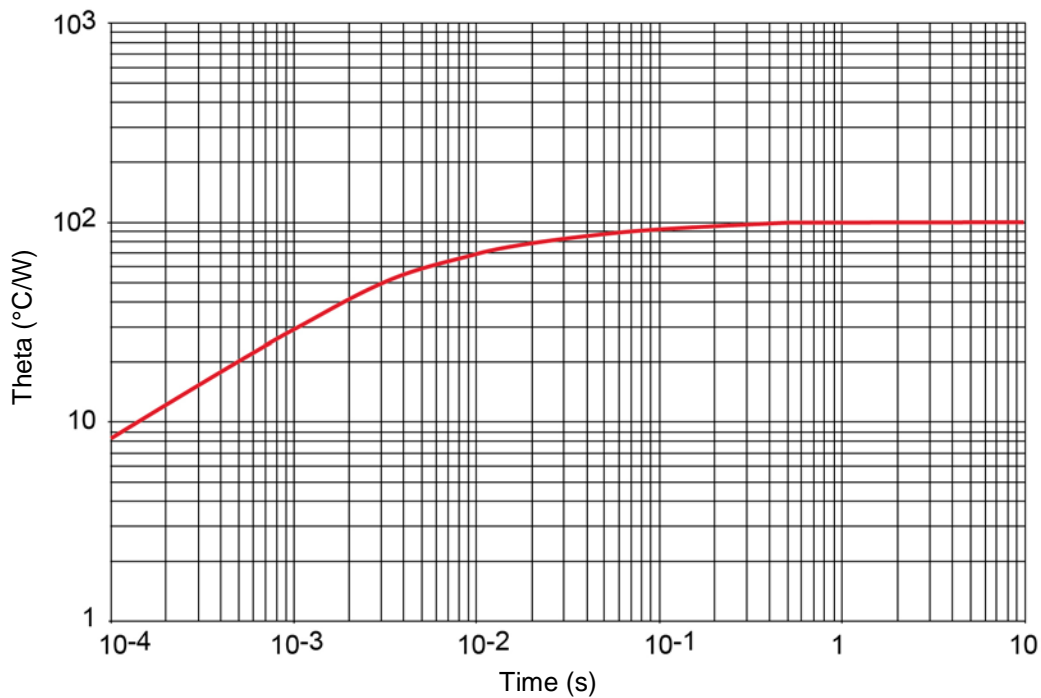
**NOTE 2:**  $I_F = 50$  mA.

**NOTE 3:**  $V_R = 0$  V,  $f = 1$  MHz,  $V_{SIG} = 50$  mV (pk to pk).

**NOTE 4:**  $V_R = 1.5$  V,  $f = 1$  MHz,  $V_{SIG} = 50$  mV (pk to pk).

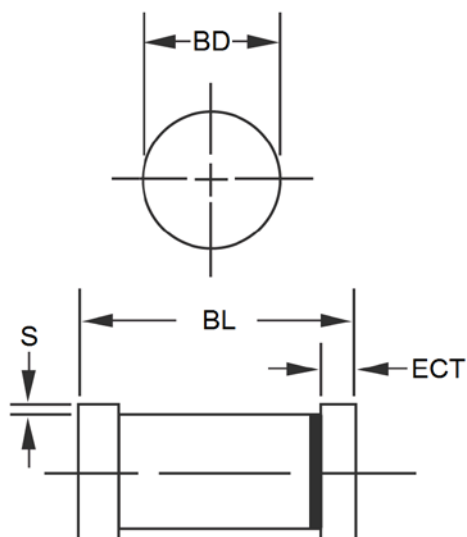
**GRAPHS**


**FIGURE 1 – Temperature – Current Derating**



**FIGURE 2 – Thermal Impedance**

## PACKAGE DIMENSIONS

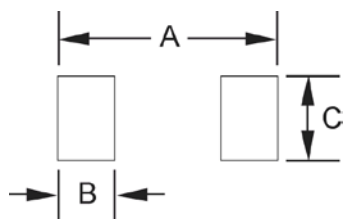


DIM	INCH		MILLIMETERS	
	MIN	MAX	MIN	MAX
<b>BD</b>	0.063	0.067	1.60	1.70
<b>BL</b>	0.130	0.146	3.30	3.71
<b>ECT</b>	0.016	0.022	0.41	0.56
<b>S</b>	.001 min		0.03 min	

### NOTES:

1. Dimensions are in inches. Millimeters are given for general information only.
2. Dimensions are pre-solder dip.
3. Referencing to dimension S, minimum clearance of glass body to mounting surface on all orientations.
4. In accordance with ASME Y14.5M, diameters are equivalent to  $\Phi$ x symbology.

## PAD LAYOUT



	INCH	mm
<b>A</b>	.200	5.08
<b>B</b>	.055	1.40
<b>C</b>	.080	2.03