

**MECHANICAL and PACKAGING**

- CASE: Hermetically sealed glass 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 indicated by band.
- 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 -1 (e3)**

**Reliability Level**

JAN = JAN level  
 JANTX = JANTX level  
 JANTXV = JANTXV level  
 MSP (reference JANS)  
 See 1N6642 for JANS level  
 Blank = Commercial grade

**RoHS Compliance**

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

**Metallurgically Bonded**
**JEDEC type number**

(see [Electrical Characteristics](#) table)

**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**

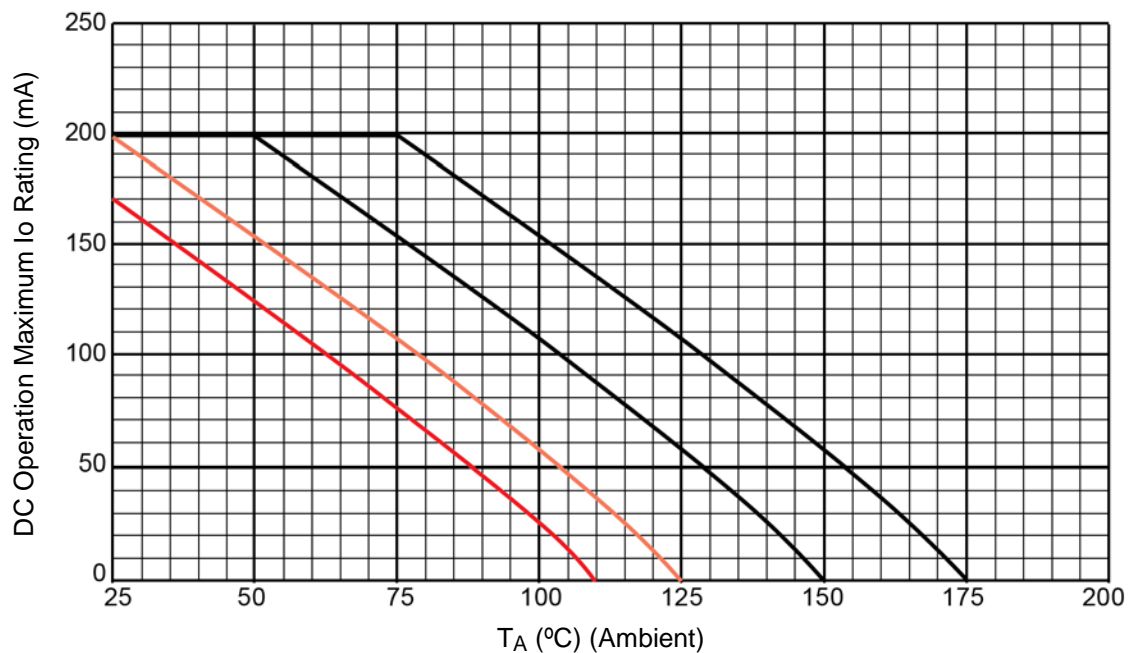
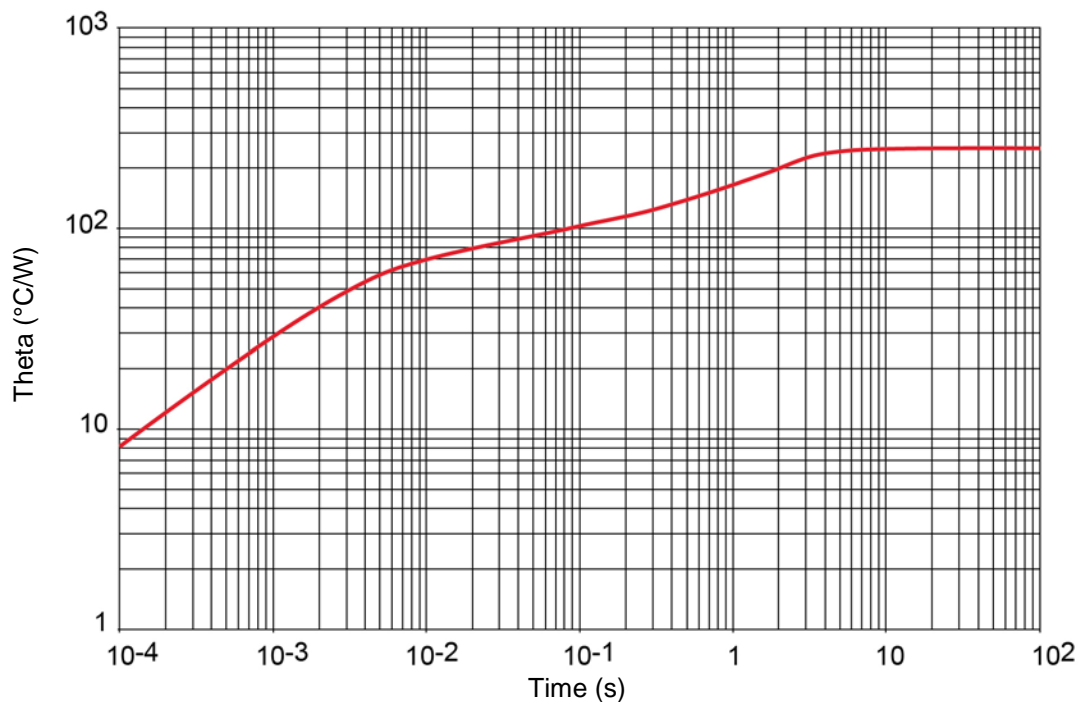
FORWARD VOLTAGE $V_{F1}$ @ $I_F=10$ mA	FORWARD VOLTAGE $V_{F2}$ @ $I_F=100$ mA	REVERSE RECOVERY TIME $t_{rr}$ (Note 1)	FORWARD RECOVERY TIME $t_{fr}$ (Note 2)	REVERSE CURRENT $I_{R1}$ @ 20 V	REVERSE CURRENT $I_{R2}$ @ 75 V	REVERSE CURRENT $I_{R3}$ @ 20 V $T_A=150^\circ\text{C}$	REVERSE CURRENT $I_{R4}$ @ 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

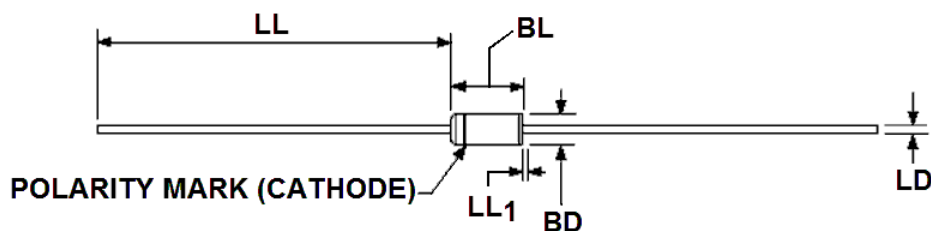
**NOTE 1:**  $I_F = I_R = 10$  mA,  $R_L = 100$  Ohms.

**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**


Ltr	Dimensions				Notes
	Inch		Millimeters		
	Min	Max	Min	Max	
BD	.056	.075	1.42	1.91	3
BL	.140	.180	3.56	4.57	3
LD	.018	.022	0.46	0.56	
LL	1.000	1.500	25.40	38.10	
LL <sub>1</sub>		.050		1.27	4

**NOTES:**

1. Dimensions are in inch.
2. Millimeters are given for general information only.
3. Package contour optional within BD and length BL. Heat slugs, if any, shall be included within this cylinder but shall not be subject to minimum limit of BD. The BL dimension shall include the entire body including slugs.
4. Within this zone lead, diameter may vary to allow for lead finishes and irregularities other than heat slugs.
5. In accordance with ASME Y14.5M, diameters are equivalent to  $\Phi$ x symbology.