

HIGH-RELIABILITY PRODUCTS**Features**

- Low reverse leakage current
- Hermetically sealed in fused metal oxide
- Good thermal shock resistance
- Low forward voltage drop

These products are qualified to MIL-PRF-19500/578.

They can be supplied fully released as JAN, JANTX, JANTXV and JANS.

Quick reference data

$$V_{BR} = 75 - 150V$$

$$t_{rr} = 4.5 - 6.0ns$$

$$I_o = 300mA, T_A = 75^{\circ}C$$

$$V_F = 1.1 - 1.2V$$

Absolute Maximum Rating

Electrical specifications @ $T_A = 25^{\circ}C$ unless otherwise specified.

Parameter	Symbol	1N6638	1N6642	1N6643	Units
Breakdown Voltage	V_{BR}	150	100	75	V
Working Reverse Voltage	V_{RWM}	125	75	50	V
Operating Current @75 °C , lead length 0.375"	I_o	300	300	300	mA
Non-Repetitive Surge Current (tp = 8.3ms, @25 °C)	I_{FSM}	2.5	2.5	2.5	A
Storage Temperature Range	T_{STG}	-65 to +175			°C

Electrical Characteristics (T=25°C unless otherwise specified)

Parameter	Symbol	1N6638	1N6642	1N6643	Units
Forward Voltage Drop max. at 10mA, $T_j = 25^\circ\text{C}$	V_{F1}	0.8	0.8	0.8	V
Forward Voltage Drop max. $T_j = 25^\circ\text{C}$	V_{F2}	1.1 @ $I_F = 200\text{mA}$	1.2 @ $I_F = 100\text{mA}$	1.2 @ $I_F = 100\text{mA}$	V
Reverse Current max. $I_{R1} @ V_R = 20\text{V}$ $I_{R2} @ V_R = V_{RWM}$ $I_{R3} @ V_R = 20\text{V}, T_A = 150^\circ\text{C}$ $I_{R4} @ V_R = V_{RWM}, T_A = 150^\circ\text{C}$	I_{R1} I_{R2} I_{R3} I_{R4}	35 500 50 100	25 500 50 100	50 500 75 100	nA nA uA uA
Forward Recovery Time max. $I_F = 200\text{mA}$	t_{fr}	20	20	20	ns
Reverse Recovery Time max. $I_{RM} = I_F = 10\text{mA}$	t_{rr}	4.5	5.0	6.0	ns
Junction Capacitance typ. $V_R = 0\text{V}$	C_{T1}	2.5	5.0	5.0	pF

Thermal Characteristics

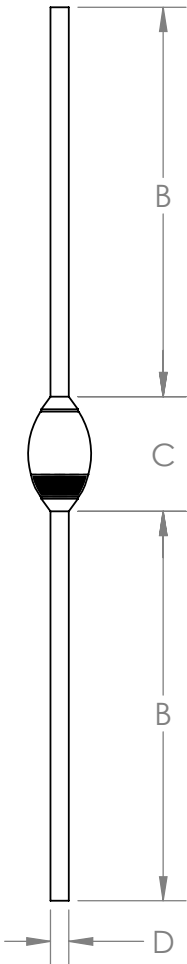
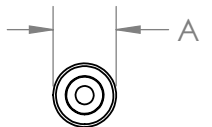
Parameter	Symbol	1N6638	1N6642	1N6643	Units
Thermal Resistance-Junction to Lead Lead length = 0.375"	$R_{\theta JL}$	150			$^\circ\text{C/W}$

Ordering Information

Part Number	Description
1N6638 1N6642 1N6643	Axial leaded hermeticallysealed ⁽¹⁾

Note:
(1) Available in bulk and tape and reel packaging. Please consult factory for quantities.

Outline Drawing



Dimensions				
DIM	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.056	0.08	1.42	2.03
B	1.0	1.5	25.4	38.1
C	0.13	0.18	3.3	4.57
D	0.018	0.022	0.46	0.56



IMPORTANT NOTICE

Information relating to this product and the application or design described herein is believed to be reliable, however such information is provided as a guide only and Semtech assumes no liability for any errors in this document, or for the application or design described herein. Semtech reserves the right to make changes to the product or this document at any time without notice. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. Semtech warrants performance of its products to the specifications applicable at the time of sale, and all sales are made in accordance with Semtech's standard terms and conditions of sale.

SEMTECH PRODUCTS ARE NOT DESIGNED, INTENDED, AUTHORIZED OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT APPLICATIONS, DEVICES OR SYSTEMS, OR IN NUCLEAR APPLICATIONS IN WHICH THE FAILURE COULD BE REASONABLY EXPECTED TO RESULT IN PERSONAL INJURY, LOSS OF LIFE OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. INCLUSION OF SEMTECH PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE UNDERTAKEN SOLELY AT THE CUSTOMER'S OWN RISK. Should a customer purchase or use Semtech products for any such unauthorized application, the customer shall indemnify and hold Semtech and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs damages and attorney fees which could arise.

The Semtech name and logo are registered trademarks of the Semtech Corporation. All other trademarks and trade names mentioned may be marks and names of Semtech or their respective companies. Semtech reserves the right to make changes to, or discontinue any products described in this document without further notice. Semtech makes no warranty, representation or guarantee, express or implied, regarding the suitability of its products for any particular purpose. All rights reserved.

© Semtech 2016

Contact Information

Semtech Corporation
200 Flynn Road, Camarillo, CA 93012
Phone: (805) 498-2111, Fax: (805) 498-3804
www.semtech.com