

- 1N6638US, 1N6642US, 1N6643US AVAILABLE IN JAN, JANTX, JANTXV AND JANS PER MIL-PRF-19500/578
- 1N6638U, 1N6642U, 1N6643U AVAILABLE IN JAN, JANTX, JANTXV AND JANS PER MIL-PRF-19500/578
- SWITCHING DIODES
- NON-CAVITY GLASS PACKAGE
- METALLURGICALLY BONDED

1N6638U & US  
1N6642U & US  
1N6643U & US

## MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C  
Storage Temperature: -65°C to +175°C  
Operating Current: 300 mA  
Derating: 4.6 mA/°C Above  $T_{EC} = +110^{\circ}\text{C}$   
Surge Current:  $I_{FSM} = 2.5\text{A}$ , half sine wave,  $P_W = 8.3\text{ms}$

ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified.

TYPES	$V_{BR}$ @ $I_R$ =100 $\mu\text{A}$	$V_{RWM}$	$V_{F1}$ $I_{FM}$ =10 mA (Pulsed)	$V_{F2}$ @ $I_{F2}$ (Pulsed)		$t_{fr}$ $I_F$ =50 mA	$t_{rr}$ $I_R = 10\text{ mA}$ $I_F = 10\text{ mA}$ $I_{REC} = 1\text{ mA}$
	V (pk)	V (pk)	V dc	V dc	mA	ns	ns
1N6638U & US	150	125	0.8	1.1	200	20	4.5
1N6642U & US	100	75	0.8	1.2	100	20	5.0
1N6643U & US	75	50	1.0	1.2	100	20	6.0

TYPES	$I_{R1}$	$I_{R2}$	$I_{R3}$	$I_{R4}$	$C_{T1}$	$C_{T2}$
	$V_R = 20\text{ V}$ nA dc	@ $V_R = V_{RWM}$ $\mu\text{A}$ dc	$V_R = 20\text{ V}$ $T_A = 150^{\circ}\text{C}$ $\mu\text{A}$ dc	$V_R = V_{RWM}$ $T_A = 150^{\circ}\text{C}$ $\mu\text{A}$ dc	$V_R = 0\text{V}$ pF	$V_R = 1.5\text{V}$ pF
1N6638U & US	35	0.5	50	100	2.5	2.0
1N6642U & US	25	0.5	50	100	5.0	2.8
1N6643U & US	50	0.5	75	160	5.0	2.8

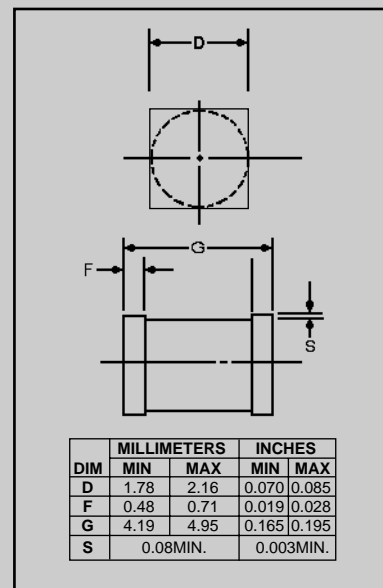


FIGURE 1

## DESIGN DATA

**CASE:** D-5D, Hermetically sealed glass case, per MIL-PRF- 19500/578

**LEAD FINISH:** Tin / Lead

**THERMAL RESISTANCE:** ( $R_{\theta JEC}$ ): 50 °C/W maximum at L = 0

**THERMAL IMPEDANCE:** ( $Z_{\theta JX}$ ): 25 °C/W maximum

**POLARITY:** Cathode end is banded.

**MOUNTING SURFACE SELECTION:**  
The Axial Coefficient of Expansion (COE) of this device is approximately + 4PPM / °C. The COE of the Mounting Surface System should be selected to provide a suitable match with this device.



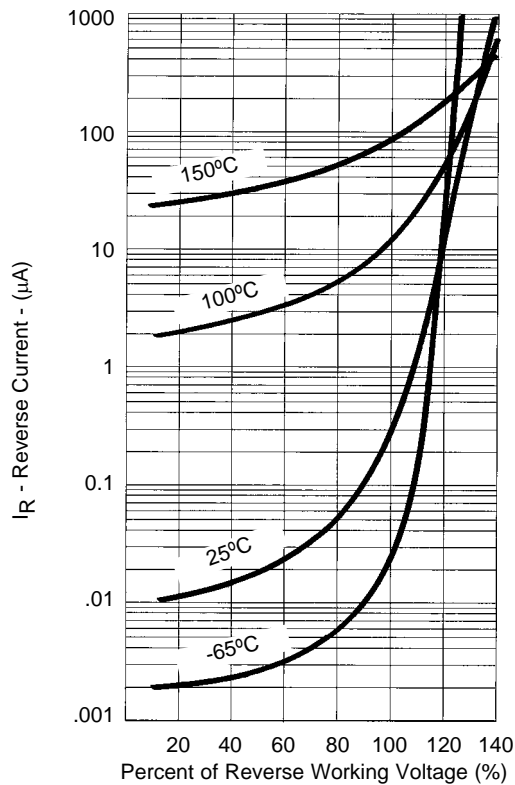
6 LAKE STREET, LAWRENCE, MASSACHUSETTS 01841  
PHONE (978) 620-2600  
WEBSITE: <http://www.microsemi.com>

FAX (781) 689-0803

# IN6638U&US, IN6642U&US and IN6643U&US



**FIGURE 2**  
Typical Forward Current  
vs Forward Voltage



**FIGURE 3**  
Typical Reverse Current  
vs Reverse Voltage

**NOTE :** All temperatures shown on graphs are junction temperatures