

- 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        | $V_{BR}$<br>@ $I_R$<br>=100 $\mu\text{A}$ | $V_{RWM}$ | $V_{F1}$<br>$I_{FM}$<br>=10 mA<br>(Pulsed) | $V_{F2}$ @ $I_{F2}$<br>(Pulsed) |     | $t_{fr}$<br>$I_F$<br>=50 mA | $t_{rr}$<br>$I_R = 10\text{ mA}$<br>$I_F = 10\text{ mA}$<br>$I_{REC} = 1\text{ mA}$ |
|--------------|---|-----------|--|---------------------------------|-----|-----------------------------|---|
|              | 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        | $I_{R1}$                     | $I_{R2}$                              | $I_{R3}$   | $I_{R4}$   | $C_{T1}$                | $C_{T2}$                  |
|--------------|------------------------------|---------------------------------------|--|--|-------------------------|---------------------------|
|              | $V_R = 20\text{ V}$<br>nA dc | @ $V_R = V_{RWM}$<br>$\mu\text{A}$ dc | $V_R = 20\text{ V}$<br>$T_A = 150^{\circ}\text{C}$<br>$\mu\text{A}$ dc | $V_R = V_{RWM}$<br>$T_A = 150^{\circ}\text{C}$<br>$\mu\text{A}$ dc | $V_R = 0\text{V}$<br>pF | $V_R = 1.5\text{V}$<br>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                       |

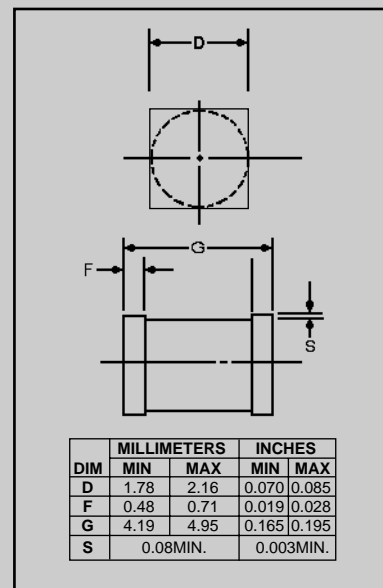


FIGURE 1

## 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.

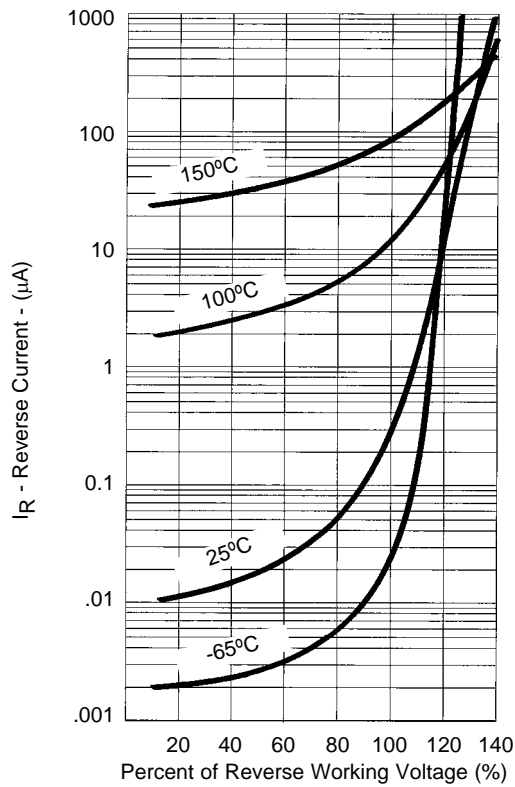
**MOUNTING SURFACE SELECTION:**  
The Axial Coefficient of Expansion (COE) of this device is approximately + 4PPM / °C. The COE of the Mounting Surface System should be selected to provide a suitable match with this device.



# 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