

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 | | | $^\circ\text{C}/\text{W}$ |

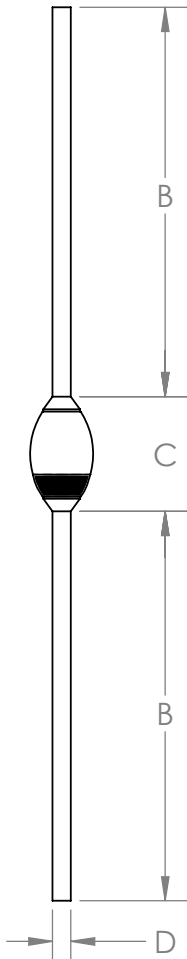
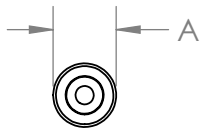
Ordering Information

| Part Number | Description |
|----------------------------|---|
| 1N6638 1N6642 1N6643 | Axial leaded hermetically sealed ⁽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 |



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