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SILICON EPITAXIAL PLANAR DIODE

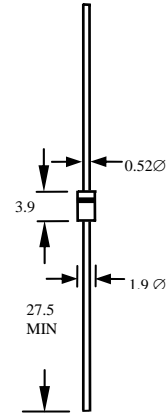
1N4148-LFR

FEATURES

- FAST SWITCHING
- SMALL SIZE
- ROHS

MECHANICAL DATA

- CASE: GLASS, DO35, DIMENSIONS IN MILLIMETERS
- LEADS: SOLDERABLE PER MIL-STD-202, METHOD 208
- POLARITY: CATHODE INDICATED BY COLOR BAND
- WEIGHT: 0.13 GRAMS



| RATINGS | SYMBOL | 1N4148-LFR | UNITS |
|--|-----------|---------------|------------------|
| REVERSE VOLTAGE | V_R | 75 | V |
| PEAK REVERSE VOLTAGE | V_{RM} | 100 | V |
| RECTIFIED CURRENT (AVERAGE) HALF WAVE RECTIFICATION WITH RESIST LOAD AT $T_{amb}=25\text{ }^\circ\text{C}$ AND $f \geq 50\text{HZ}$ (NOTE 1) | I_O | 150 | mA |
| SURGE FORWARD CURRENT AT $T < 1\text{ s}$ AND $T_J=25\text{ }^\circ\text{C}$ | I_{FSM} | 500 | mA |
| POWER DISSIPATION AT $T_{amb}=25\text{ }^\circ\text{C}$ | P_{TOT} | 500 | mW |
| JUNCTION TEMPERATURE | T_J | 200 | $^\circ\text{C}$ |
| STORAGE TEMPERATURE RANGE | T_S | - 55 TO + 200 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS ($A_T T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

| CHARACTERISTICS @ $T_J = 25\text{ }^\circ\text{C}$ | SYMBOL | MIN | TYP | MAX | UNITS |
|---|-----------|------|-----|------|---------------|
| FORWARD VOLTAGE AT $I_F=10\text{mA}$ | V_F | - | - | 1 | V |
| LEAKAGE CURRENT AT $V_R=20\text{V}$ | I_R | - | - | 25 | nA |
| AT $V_R=75\text{V}$ | I_R | - | - | 5 | μA |
| AT $V_R=20\text{V } T_J=150\text{ }^\circ\text{C}$ | I_R | - | - | 50 | μA |
| REVERSE BREAKDOWN VOLTAGE TESTED WITH $100\mu\text{A}$ PULSES | V_R | 100 | - | - | V |
| CAPACITANCE AT $V_F=V_R=0$ | C_{TOT} | - | - | 4 | PF |
| VOLTAGE RISE WHEN SWITCHING ON TESTED WITH 50mA FORWARD PULSES $TP=0.1\mu\text{s}$ RISE TIME $< 30\text{ns}$ $F_p=5$ TO 100 KHZ | V_{FR} | - | - | 2.5 | V |
| REVERSE RECOVERY TIME FROM $I_F=10\text{mA}$ TO $I_R=1\text{mA } V_R=6\text{V } R_L=100\Omega$ | T_{RR} | - | - | 4 | nS |
| THERMAL RESISTANCE JUNCTION TO AMBIENT AIR (NOTE 1) | R_{THA} | - | - | 0.35 | K / mW |
| RECTIFICATION EFFICIENCY AT $f=100\text{ MHZ } V_{RF}=2\text{V}$ | N_V | 0.45 | - | - | - |

NOTE:

1. LEADS KEPT AT AMBIENT TEMP. AT 8mm LENGTH

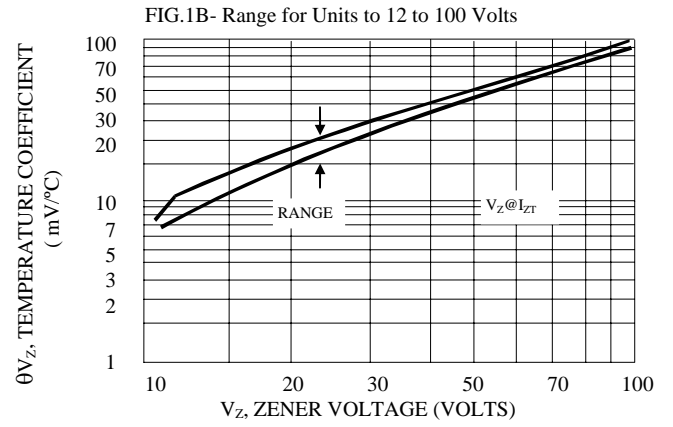
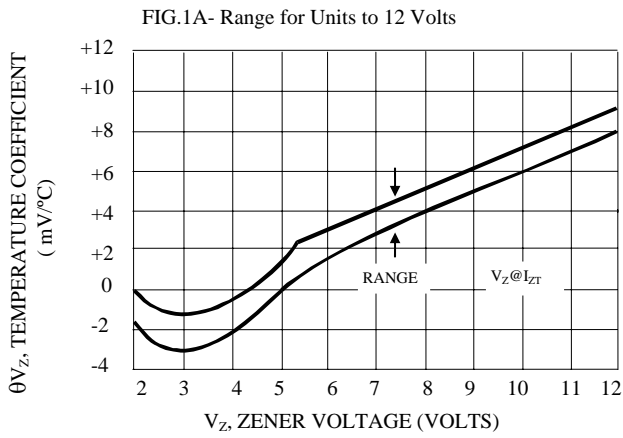


Figure 2. Temperature Coefficients (-55°C to +150°C temperature change; 90% of the units are in the ranges indicated.)

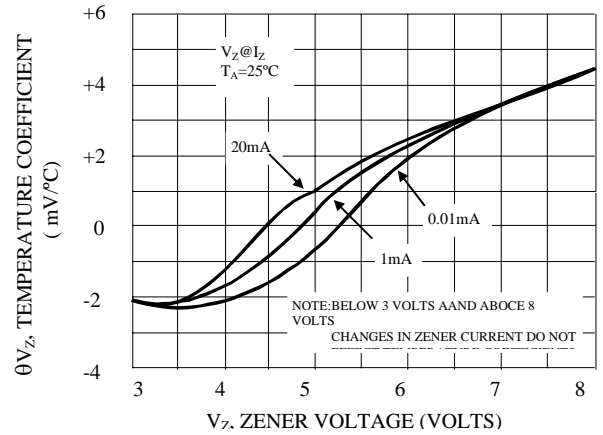
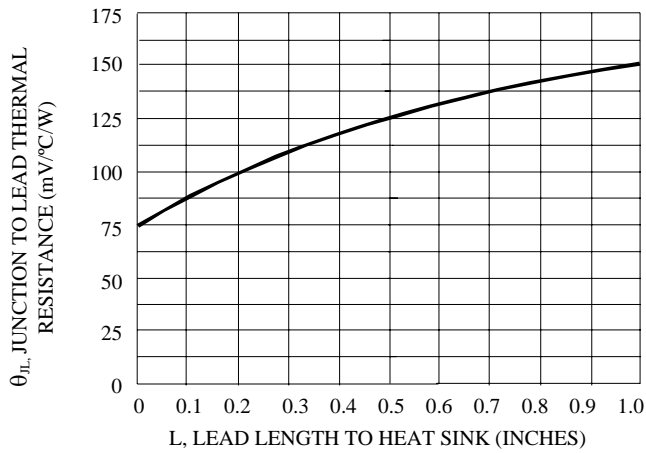


Figure 3. Typical Thermal Resistance versus Lead Length

Figure 4. Effect of Zener Current

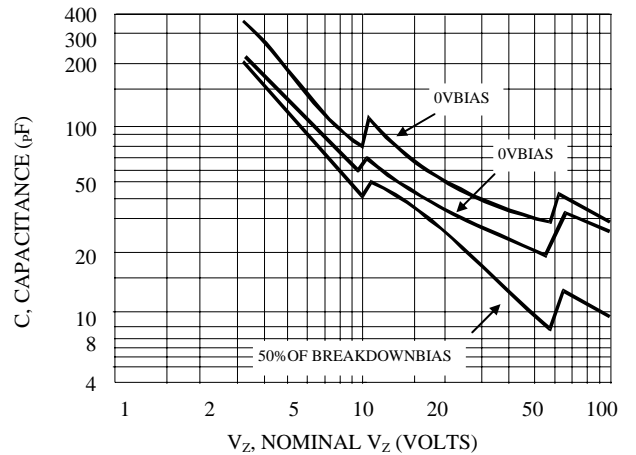
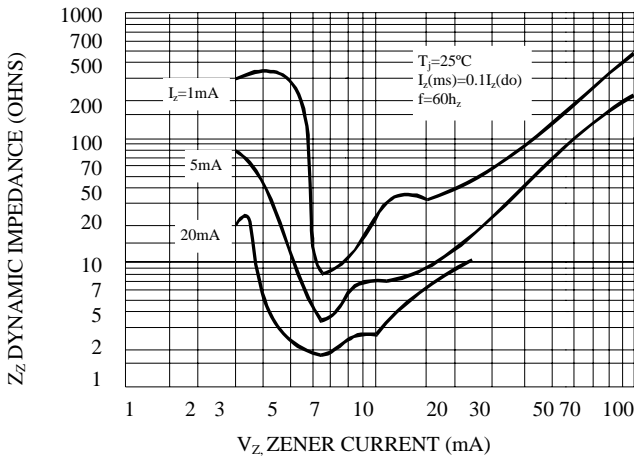


Figure 7 - Power Temperature Derating Curve

