

Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diodes
- Low forward voltage drop
- High forward current capability
- AEC-Q101 qualified
- Material categorization:
for definitions of compliance please see
www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

- High speed switch and general purpose use in computer and industrial applications

MECHANICAL DATA

Case: MiniMELF SOD-80

Weight: approx. 31 mg

Cathode band color: black

Packaging codes/options:

08/2.5K per 7" reel (8 mm tape), 12.5K/box

18/10K per 13" reel (8 mm tape), 10K/box

PARTS TABLE

| PART | ORDERING CODE | TYPE MARKING | INTERNAL CONSTRUCTION | REMARKS |
|----------|----------------------------|--------------|-----------------------|---------------|
| LL4150-M | LL4150-M-08 or LL4150-M-18 | - | Single diode | Tape and reel |

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---------------------------------|-----------------------|-------------|-------|------|
| Repetitive peak reverse voltage | | V_{RRM} | 50 | V |
| Reverse voltage | | V_R | 50 | V |
| Peak forward surge current | $t_p = 1 \mu\text{s}$ | I_{FSM} | 4 | A |
| Forward continuous current | | I_F | 600 | mA |
| Average forward current | $V_R = 0$ | $I_{F(AV)}$ | 300 | mA |
| Power dissipation | | P_{tot} | 500 | mW |

THERMAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|--|---------------------------------------|------------|-------------|--------------------|
| Thermal resistance junction to ambient air | On PC board 50 mm x 50 mm x 1.6 mm | R_{thJA} | 300 | K/W |
| Junction temperature | | T_j | 175 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | -65 to +175 | $^{\circ}\text{C}$ |
| Operating temperature range | | T_{op} | -55 to +175 | $^{\circ}\text{C}$ |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | |
|--|---|----------|-------|------|-------|---------------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Forward voltage | $I_F = 1\text{ mA}$ | V_F | 0.540 | | 0.620 | V |
| | $I_F = 10\text{ mA}$ | V_F | 0.660 | | 0.740 | V |
| | $I_F = 50\text{ mA}$ | V_F | 0.760 | | 0.860 | V |
| | $I_F = 100\text{ mA}$ | V_F | 0.820 | | 0.920 | V |
| | $I_F = 200\text{ mA}$ | V_F | 0.870 | | 1 | V |
| Reverse current | $V_R = 50\text{ V}$ | I_R | | | 100 | nA |
| | $V_R = 50\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ | I_R | | | 100 | μA |
| Diode capacitance | $V_R = 0, f = 1\text{ MHz}, V_{HF} = 50\text{ mV}$ | C_D | | | 2.5 | pF |
| Reverse recovery time | $I_F = I_R = 10\text{ mA to } 100\text{ mA}, I_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$ | t_{rr} | | | 4 | ns |

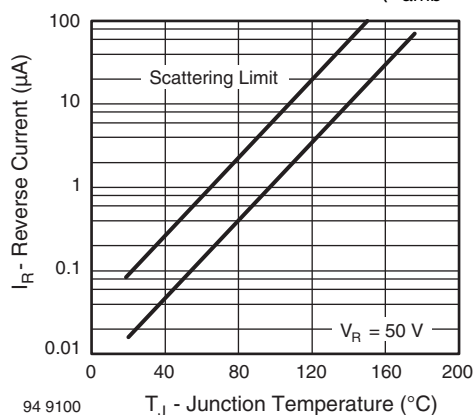
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

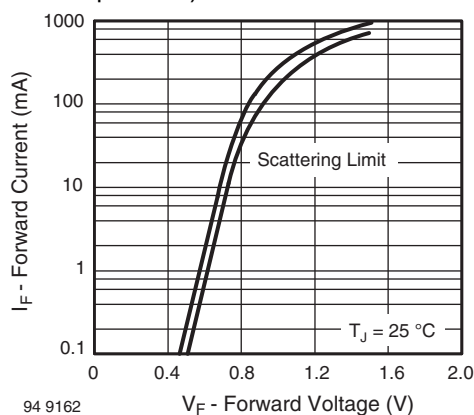
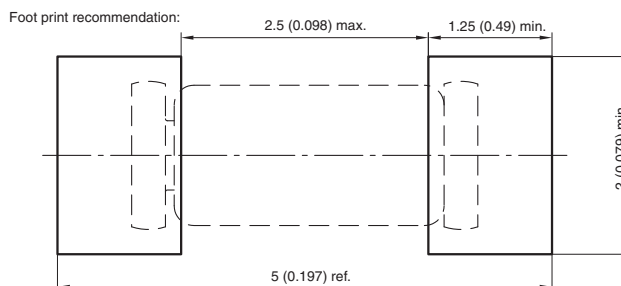
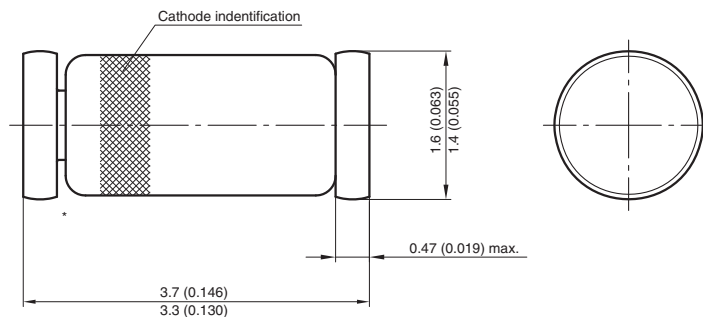


Fig. 2 - Forward Current vs. Forward Voltage

PACKAGE DIMENSIONS in millimeters (inches): **MiniMELF SOD-80**


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