



# 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](http://www.vishay.com/doc?99912)



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### 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 | CIRCUIT CONFIGURATION | REMARKS       |
| LL4150-M    | LL4150-M-08 or LL4150-M-18 | -            | Single                | Tape and reel |

| ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                       |                    |       |      |
|---------------------------------------------------------------------------------|-----------------------|--------------------|-------|------|
| PARAMETER                                                                       | TEST CONDITION        | SYMBOL             | VALUE | UNIT |
| Repetitive peak reverse voltage                                                 |                       | V <sub>RRM</sub>   | 50    | V    |
| Reverse voltage                                                                 |                       | V <sub>R</sub>     | 50    | V    |
| Peak forward surge current                                                      | t <sub>p</sub> = 1 μs | I <sub>FSM</sub>   | 4     | A    |
| Forward continuous current                                                      |                       | I <sub>F</sub>     | 600   | mA   |
| Average forward current                                                         | V <sub>R</sub> = 0    | I <sub>F(AV)</sub> | 300   | mA   |
| Power dissipation                                                               |                       | P <sub>tot</sub>   | 500   | mW   |

| THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                                       |                   |             |      |
|--------------------------------------------------------------------------------|---------------------------------------|-------------------|-------------|------|
| PARAMETER                                                                      | TEST CONDITION                        | SYMBOL            | VALUE       | UNIT |
| Thermal resistance junction to ambient air                                     | On PC board<br>50 mm x 50 mm x 1.6 mm | R <sub>thJA</sub> | 300         | K/W  |
| Junction temperature                                                           |                                       | T <sub>j</sub>    | 175         | °C   |
| Storage temperature range                                                      |                                       | T <sub>stg</sub>  | -65 to +175 | °C   |
| Operating temperature range                                                    |                                       | T <sub>op</sub>   | -55 to +175 | °C   |

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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   | $\mu\text{A}$ |
| 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            |

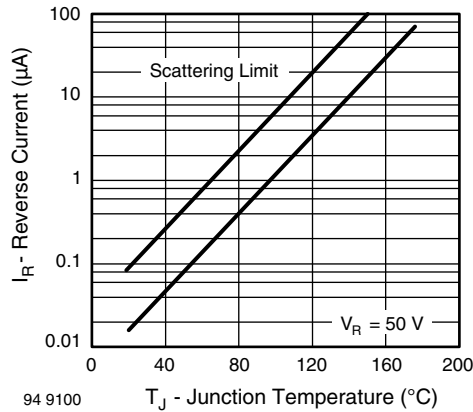
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

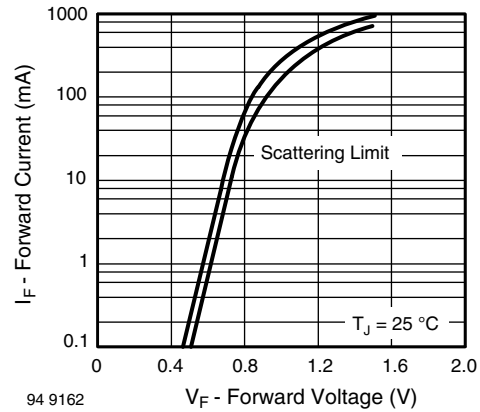
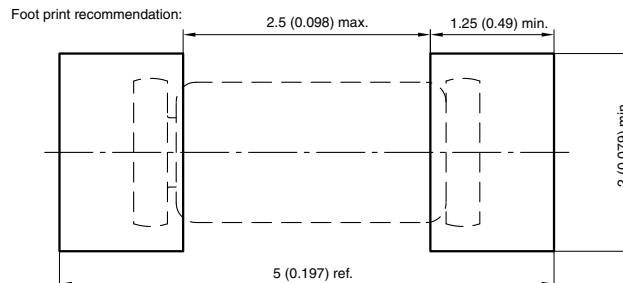
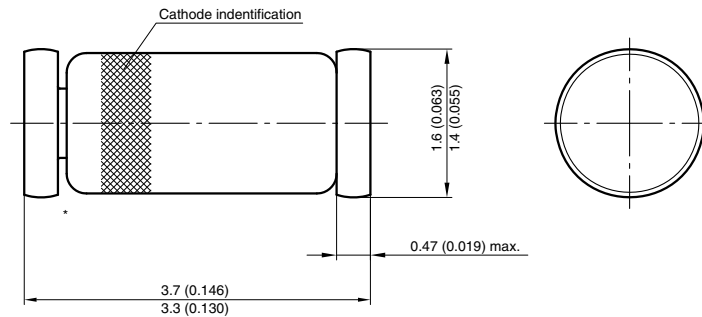


Fig. 2 - Forward Current vs. Forward Voltage

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


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