

## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Low forward voltage drop
- High forward current capability
- QuadroMELF package
- 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:** QuadroMELF (SOD-80)

**Weight:** approx. 34 mg

**Cathode band color:** black

**Packaging codes / options:**

GS18/10K per 13" reel (8 mm tape), 10K/box

GS08/2.5K per 7" reel (8 mm tape), 12.5K/box

| PARTS TABLE |                          |              |                       |               |
|-------------|--------------------------|--------------|-----------------------|---------------|
| PART        | ORDERING CODE            | TYPE MARKING | CIRCUIT CONFIGURATION | REMARKS       |
| LS4150      | LS4150GS18 or LS4150GS08 | -            | Single                | Tape and reel |

| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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  | $t_p = 1\text{ }\mu\text{s}$ | $I_{FSM}$   | 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 ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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 | $R_{thJA}$ | 300         | K/W                |
| Junction temperature   |                                       | $T_j$      | 175         | $^{\circ}\text{C}$ |
| Storage temperature range  |                                       | $T_{stg}$  | -65 to +175 | $^{\circ}\text{C}$ |

| <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  | $I_F = I_R = 10\text{ mA to } 100\text{ mA},$<br>$i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$ | $t_{rr}$ |       |      | 4     | ns            |

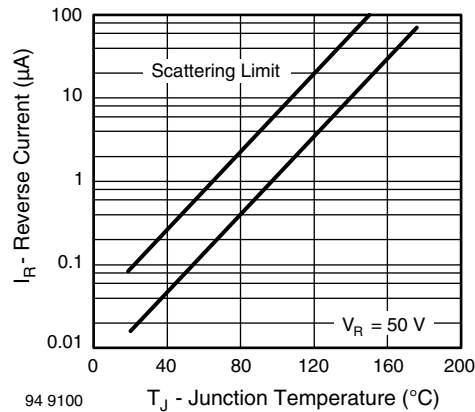
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

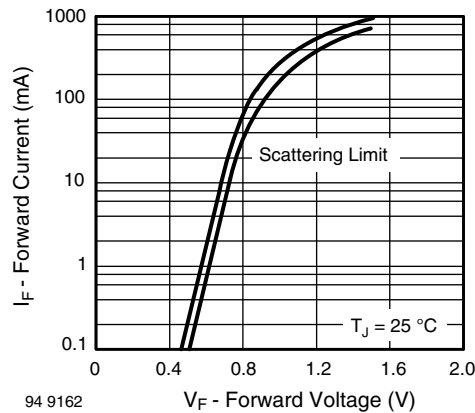
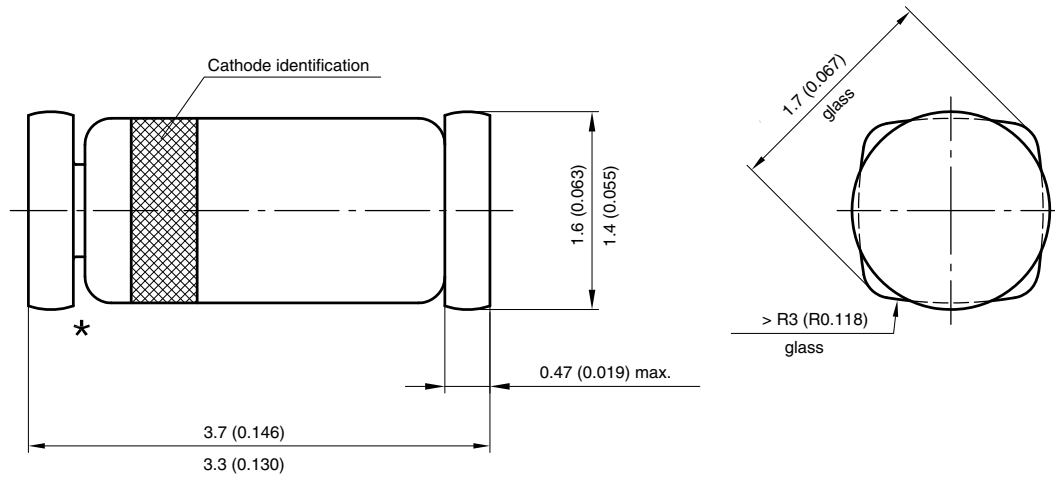
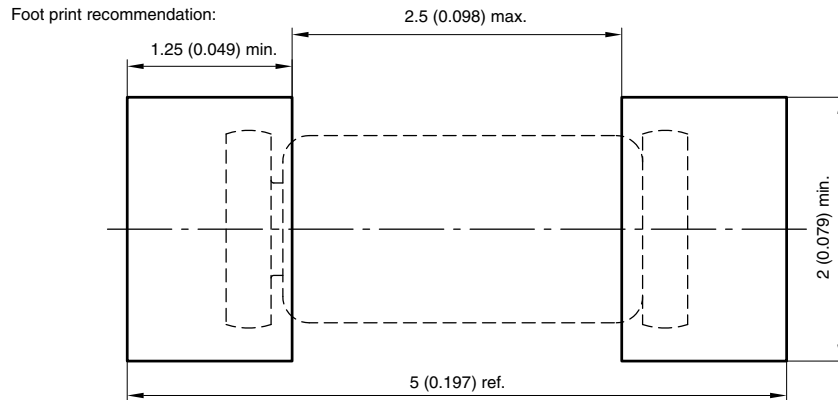


Fig. 2 - Forward Current vs. Forward Voltage

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



\* The gap between plug and glass can be either on cathode or anode side



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