

## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Electrical data identical with the device 1N4151
- QuadroMELF package
- AEC-Q101 qualified
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### APPLICATIONS

- Extreme fast switches

### 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 | INTERNAL CONSTRUCTION | REMARKS       |
| LS4151      | LS4151-GS18 or LS4151GS08 | -            | Single diode          | 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   |                              | $V_{RRM}$   | 75    | V    |
| Reverse voltage   |                              | $V_R$       | 50    | V    |
| Peak forward surge current  | $t_p = 1\text{ }\mu\text{s}$ | $I_{FSM}$   | 2     | A    |
| Repetitive peak forward current   |                              | $I_{FRM}$   | 500   | mA   |
| Forward continuous current  |                              | $I_F$       | 300   | mA   |
| Average forward current   | $V_R = 0$                    | $I_{F(AV)}$ | 150   | 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 | $R_{thJA}$ | 500           | 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  | $I_F = 50\text{ mA}$   | $V_F$      |      | 0.880 |      | V             |
| Reverse voltage  | $V_R = 50\text{ V}$  | $I_R$      |      |       | 50   | nA            |
|  | $V_R = 50\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$                                     | $I_R$      |      |       | 50   | $\mu\text{A}$ |
| Breakdown voltage  | $I_R = 5\text{ }\mu\text{A}, t_p/T = 0.01,$<br>$t_p = 0.3\text{ ms}$                       | $V_{(BR)}$ | 75   |       |      | V             |
| Diode capacitance  | $V_R = 0, f = 1\text{ MHz},$<br>$V_{HF} = 50\text{ mV}$                                    | $C_D$      |      |       | 2    | pF            |
| Reverse recovery time  | $I_F = I_R = 10\text{ mA},$<br>$i_R = 1\text{ mA}$   | $t_{rr}$   |      |       | 4    | ns            |
|  | $I_F = 10\text{ mA}, V_R = 6\text{ V},$<br>$i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$ | $t_{rr}$   |      |       | 2    | ns            |

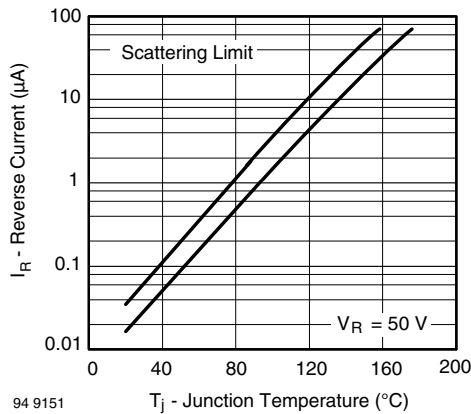
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

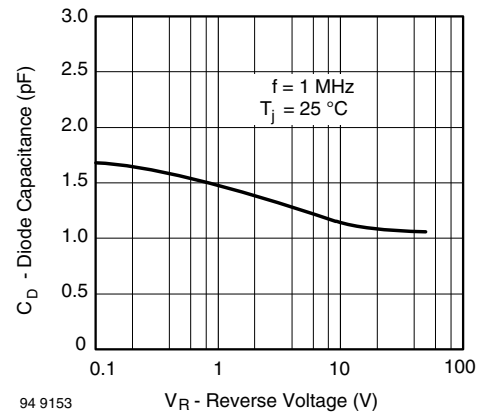


Fig. 3 - Diode Capacitance vs. Reverse Voltage

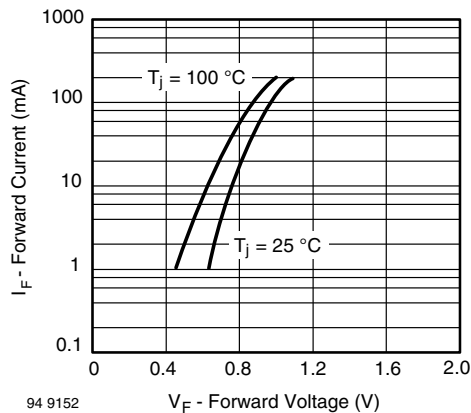
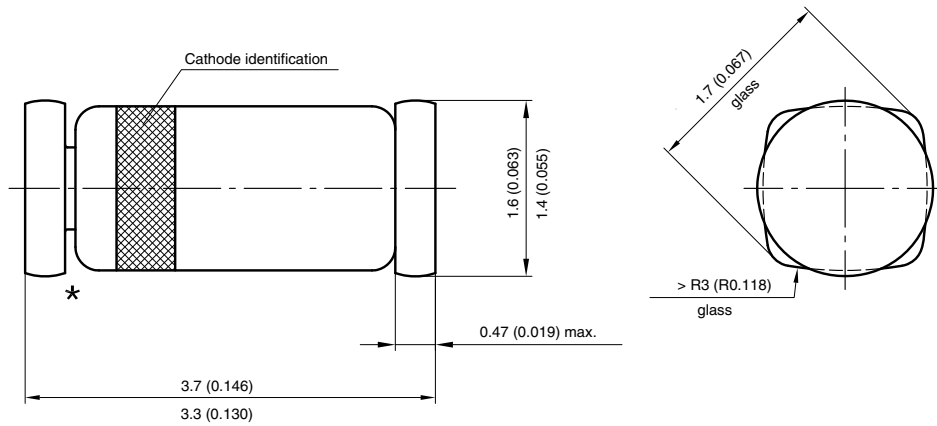


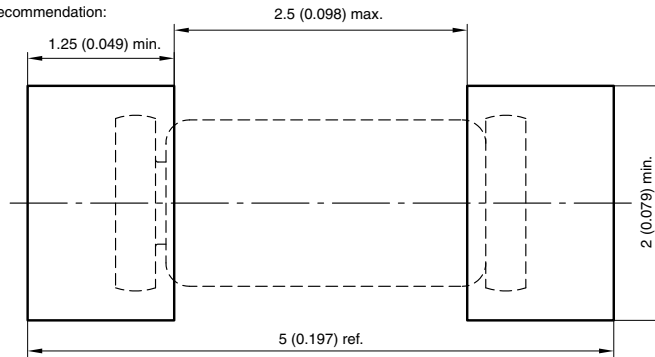
Fig. 2 - Forward Current vs. Forward Voltage

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



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

Foot print recommendation:



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 Document no.:6.560-5006.01-4  
 96 12071



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