

Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Electrical data identical with the device 1N4154
- QuadroMELF package
- AEC-Q101 qualified
- Material categorization:
For definitions of compliance please see 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 |
|--------|--------------------------|--------------|-----------------------|---------------|
| LS4154 | LS4154GS18 or LS4154GS08 | - | 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} | 35 | V |
| Reverse voltage | | V_R | 25 | V |
| Peak forward surge current | $t_p = 1\ \mu\text{s}$ | 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 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 | $^{\circ}\text{C}$ |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | |
|--|--|------------|------|------|------|---------------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Forward voltage | $I_F = 30\text{ mA}$ | V_F | | | 1000 | mV |
| Reverse voltage | $V_R = 25\text{ V}$ | I_R | | | 100 | nA |
| | $V_R = 25\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ | I_R | | | 100 | μA |
| Breakdown voltage | $I_R = 5\text{ }\mu\text{A}, t_p/T = 0.01,$ $t_p = 0.3\text{ ms}$ | $V_{(BR)}$ | 35 | | | V |
| Diode capacitance | $V_R = 0, f = 1\text{ MHz},$ $V_{HF} = 50\text{ mV}$ | C_D | | | 4 | pF |
| Reverse recovery time | $I_F = I_R = 10\text{ mA}, i_R = 1\text{ mA}$ | t_{rr} | | | 4 | ns |
| | $I_F = 10\text{ mA}, V_R = 6\text{ V},$ $i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$ | t_{rr} | | | 2 | ns |

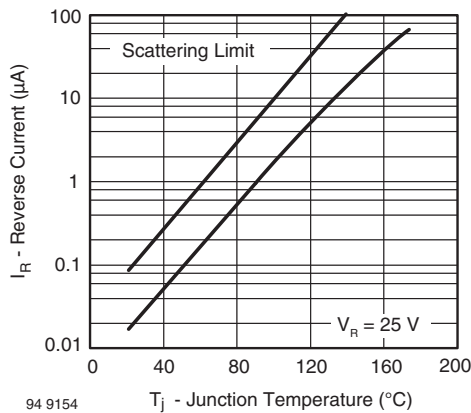
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

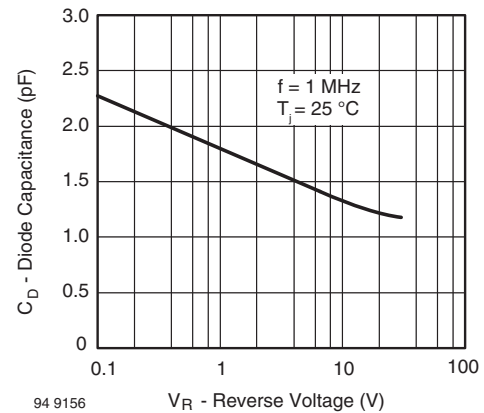


Fig. 3 - Diode Capacitance vs. Reverse Voltage

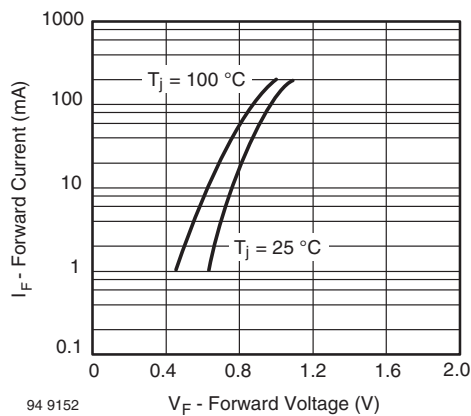
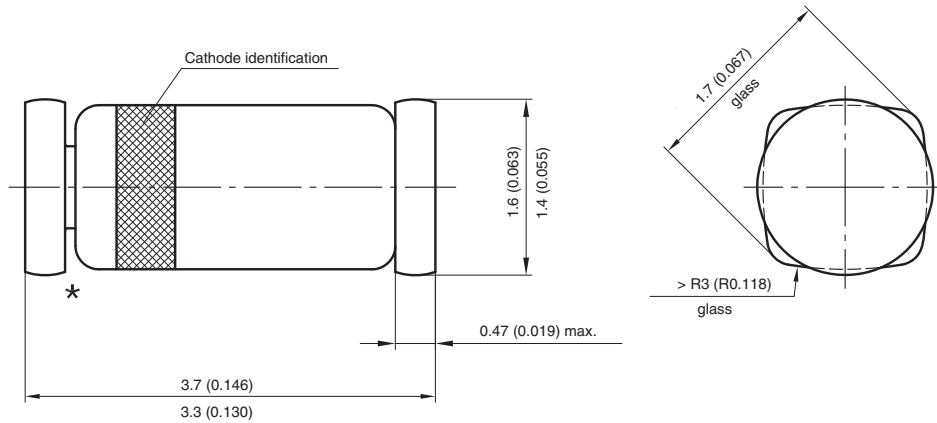
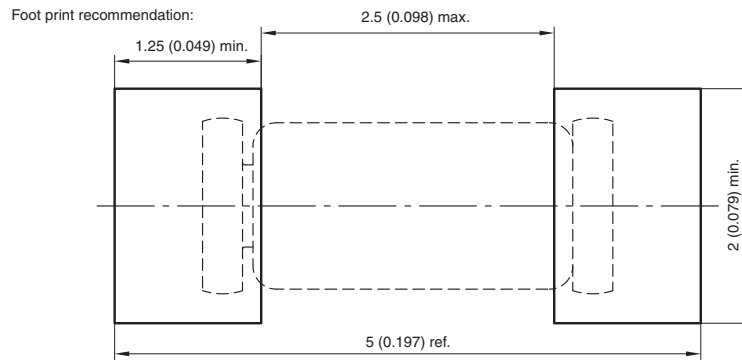


Fig. 2 - Forward Current vs. Forward Voltage

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



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



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