

## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diodes
- Electrical data identical with the device 1N4154
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### APPLICATIONS

- Extreme fast switches

### LINKS TO ADDITIONAL RESOURCES



### MECHANICAL DATA

**Case:** MiniMELF (SOD-80)

**Weight:** approx. 31 mg

**Cathode band color:** black

**Packaging codes / options:**

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

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

### PARTS TABLE

| PART     | ORDERING CODE              | TYPE MARKING | CIRCUIT CONFIGURATION | REMARKS       |
|----------|----------------------------|--------------|-----------------------|---------------|
| LL4154-M | LL4154-M-18 or LL4154-M-08 | -            | 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>   | 35    | V    |
| Reverse voltage                 |                       | V <sub>R</sub>     | 25    | V    |
| Peak forward surge current      | t <sub>p</sub> = 1 μs | I <sub>FSM</sub>   | 2     | A    |
| Repetitive peak forward current |                       | I <sub>FRM</sub>   | 500   | mA   |
| Forward continuous current      |                       | I <sub>F</sub>     | 300   | mA   |
| Average forward current         | V <sub>R</sub> = 0    | I <sub>F(AV)</sub> | 150   | 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> | 500         | K/W  |
| Junction temperature                       |                                       | T <sub>j</sub>    | 175         | °C   |
| Storage temperature range                  |                                       | T <sub>stg</sub>  | -65 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                                                                                          | $I_F = 30\text{ mA}$                                                                       | $V_F$      |      |      | 1    | V             |
| Reverse current                                                                                          | $V_R = 25\text{ V}$                                                                        | $I_R$      |      |      | 100  | nA            |
|                                                                                                          | $V_R = 25\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$                                     | $I_R$      |      |      | 100  | $\mu\text{A}$ |
| Breakdown voltage                                                                                        | $I_R = 5\text{ }\mu\text{A}, t_p/T = 0.01,$<br>$t_p = 0.3\text{ ms}$                       | $V_{(BR)}$ | 35   |      |      | V             |
| Diode capacitance                                                                                        | $V_R = 0, f = 1\text{ MHz},$<br>$V_{HF} = 50\text{ mV}$                                    | $C_D$      |      |      | 4    | 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            |

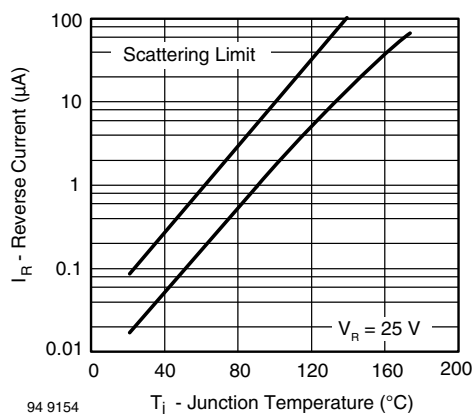
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

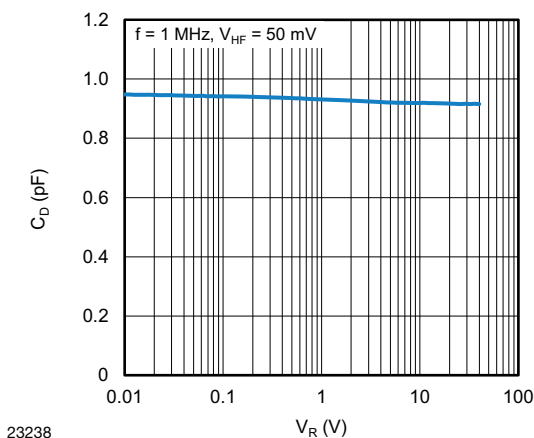


Fig. 3 - Typical Capacitance vs. Reverse Voltage

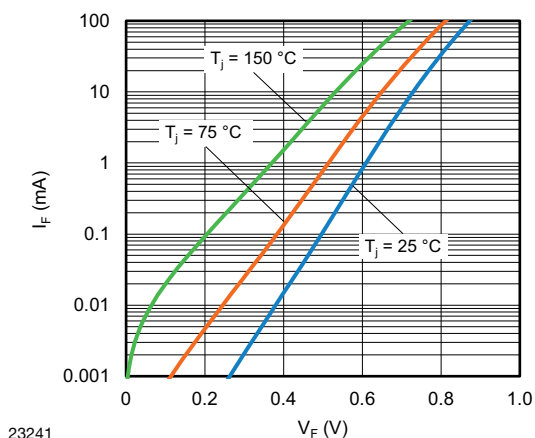
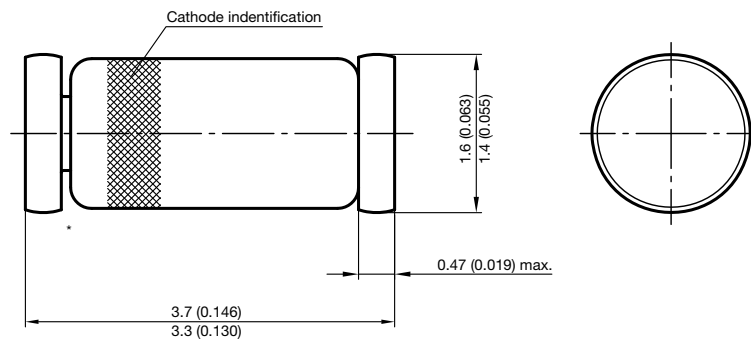


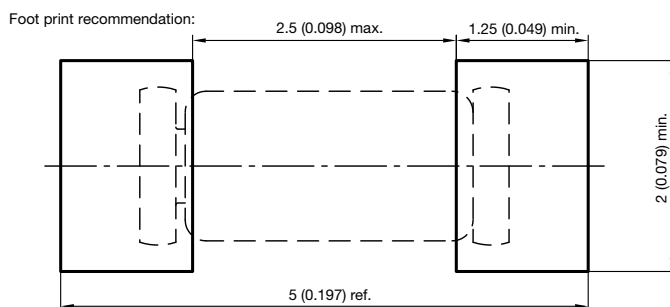
Fig. 2 - Forward Current vs. Forward Voltage



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



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



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