

## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diodes
- Electrical data identical with the device 1N4151
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### APPLICATIONS

- Extreme fast switches



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

### 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

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

### PARTS TABLE

PART	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS
LL4151-M	LL4151-M-18 or LL4151-M-08	-	Single	Tape and reel

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ , 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	$t_p = 1 \mu\text{s}$	$I_{FSM}$	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 ( $T_{amb} = 25^{\circ}\text{C}$ , 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	$^{\circ}\text{C}$

<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	1	V
Reverse current	$V_R = 50\text{ V}$	$I_R$			50	nA
	$V_R = 50\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
Breakdown voltage	$I_R = 5\text{ }\mu\text{A}, t_p/T = 0.01,$ $t_p = 0.3\text{ ms}$	$V_{(BR)}$	75			V
Diode capacitance	$V_R = 0, f = 1\text{ MHz},$ $V_{HF} = 50\text{ mV}$	$C_D$			2	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

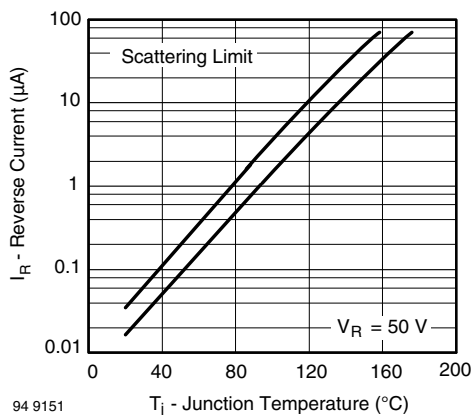
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

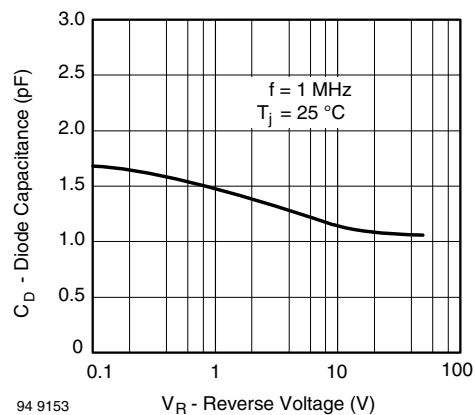


Fig. 3 - Diode Capacitance vs. Reverse Voltage

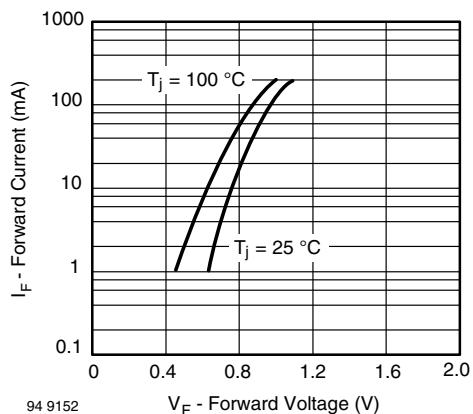
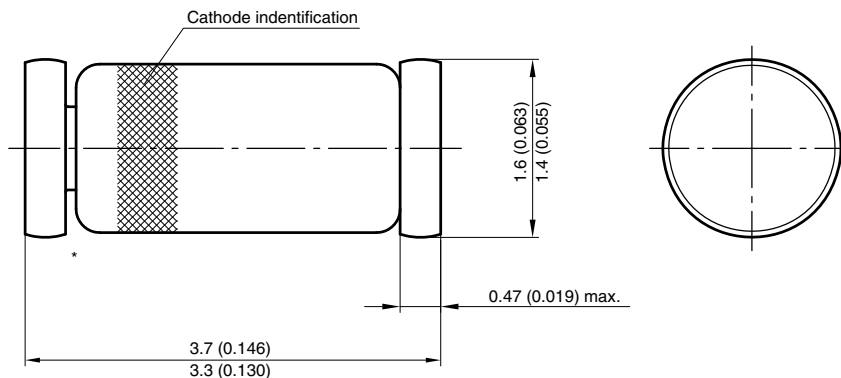
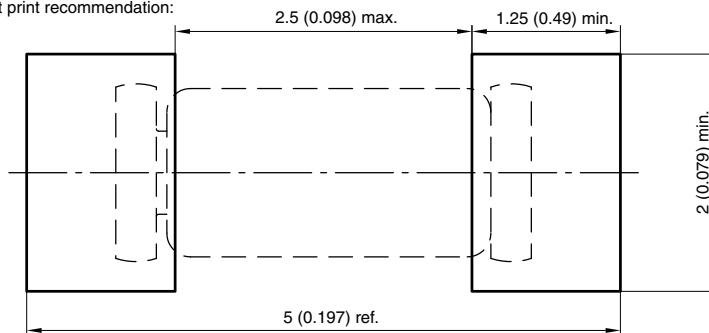


Fig. 2 - Forward Current vs. Forward Voltage

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


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

Foot print recommendation:



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