RoHS

COMPLIANT



Vishay Semiconductors

## Small Signal Fast Switching Diode



## FEATURES

- Silicon epitaxial planar diodes
- Electrical data identical with the device 1N4151
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see <u>www.vishav.com/doc?99912</u>

## **APPLICATIONS**

• Extreme fast switches

### DESIGN SUPPORT TOOLS click logo to get started



## MECHANICAL DATA

Case: MiniMELF (SOD-80) Weight: approx. 31 mg Cathode band color: black Packaging codes / options: GS18/10K per 13" reel (8 mm tape), 10K/box GS08/2.5 per 7" reel (8 mm tape), 12.5K/box

PARTS TABLE						
PART	ORDERING CODE TYPE MARKING CIRCUIT CONFIGURATIO		CIRCUIT CONFIGURATION	REMARKS		
LL4151	LL4151-GS18 or LL4151-GS08	-	Single	Tape and reel		

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Repetitive peak reverse voltage		V <sub>RRM</sub>	75	V		
Reverse voltage		V <sub>R</sub>	50	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		l <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		

<b>THERMAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °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 <sub>thJA</sub>	500	K/W		
Junction temperature		Tj	175	°C		
Storage temperature range		T <sub>stg</sub>	-65 to +175	°C		

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LL4151

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 50 mA	V <sub>F</sub>		0.880	1	V
Reverse current	V <sub>R</sub> = 50 V	I <sub>R</sub>			50	nA
neverse current	$V_R = 50 \text{ V}, \text{ T}_j = 150 ^\circ\text{C}$	I <sub>R</sub>			50	μA
Breakdown voltage	$I_{R} = 5 \ \mu A, t_{p}/T = 0.01, t_{p} = 0.3 \ ms$	V <sub>(BR)</sub>	75			V
Diode capacitance	$V_{R}$ = 0, f = 1 MHz, $V_{HF}$ = 50 mV	CD			2	pF
Reverse recovery time	I <sub>F</sub> = I <sub>R</sub> = 10 mA, i <sub>R</sub> = 1 mA	t <sub>rr</sub>			4	ns
neverse recovery lime	$I_{F} = 10 \text{ mA}, V_{R} = 6 \text{ V}, \\ i_{R} = 0.1 \text{ x } I_{R}, R_{L} = 100 \Omega$	t <sub>rr</sub>			2	ns

### TYPICAL CHARACTERISTICS (Tamb = 25 °C, unless otherwise specified)

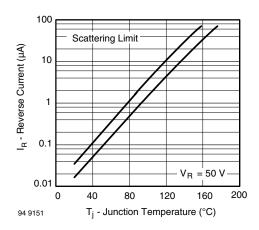
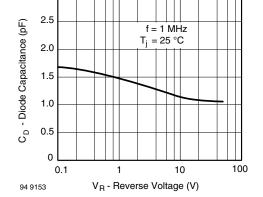


Fig. 1 - Reverse Current vs. Junction Temperature



3.0

Fig. 3 - Diode Capacitance vs. Reverse Voltage

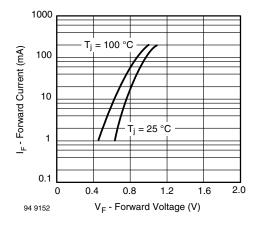


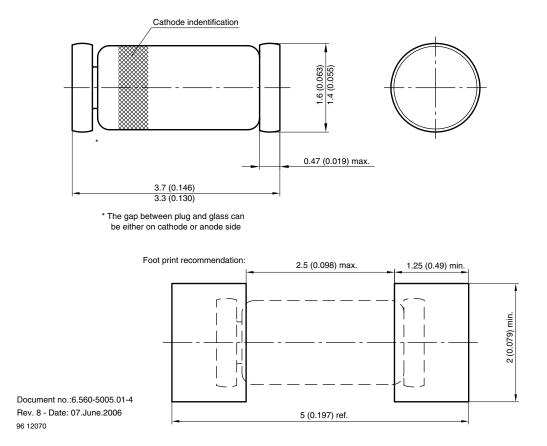
Fig. 2 - Forward Current vs. Forward Voltage

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





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