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[Vishay Semiconductor/Diodes Division](#)  
[1N4151W-E3-18](#)

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www.vishay.com

**1N4151W**

Vishay Semiconductors

## Small Signal Fast Switching Diode



### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 10.3 mg

**Packaging codes/options:**

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

08/3K per 7" reel (8 mm tape), 15K/box

### FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### PARTS TABLE

PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
1N4151W	1N4151W-E3-08 or 1N4151W-E3-18	Single diode	A5	Tape and reel
	1N4151W-HE3-08 or 1N4151W-HE3-18			

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V <sub>R</sub>	50	V
Repetitive peak reverse voltage		V <sub>RRM</sub>	75	V
Average rectified current half wave rectification with resistive load <sup>(1)</sup>	f ≥ 50 Hz	I <sub>F(AV)</sub>	150	mA
Surge current	t < 1 s and T <sub>j</sub> = 25 °C	I <sub>FSM</sub>	500	mA
Power dissipation <sup>(1)</sup>		P <sub>tot</sub>	410	mW

### THERMAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		R <sub>thJA</sub>	450	K/W
Junction temperature		T <sub>j</sub>	150	°C
Storage temperature range		T <sub>stg</sub>	- 65 to + 150	°C
Operating temperature range		T <sub>op</sub>	- 55 to + 150	°C

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature.



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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 50\text{ mA}$	$V_F$			1.0	V
Leakage current	$V_R = 50\text{ V}$	$I_R$			50	nA
	$V_R = 20\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
Reverse breakdown voltage	$I_R = 5\text{ }\mu\text{A}$ (pulsed)	$V_{(BR)}$	75			V
Diode capacitance	$V_F = V_R = 0\text{ V}$	$C_D$			2	pF
Reverse recovery time	$I_F = 10\text{ mA}, I_R = 10\text{ mA}$ $i_R = 1\text{ mA}$	$t_{rr}$			4	ns
	$I_F = 10\text{ mA}, I_R = 1\text{ mA}$ $V_R = 6\text{ V}, R_L = 100\text{ }\Omega$	$t_{rr}$			2	ns

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

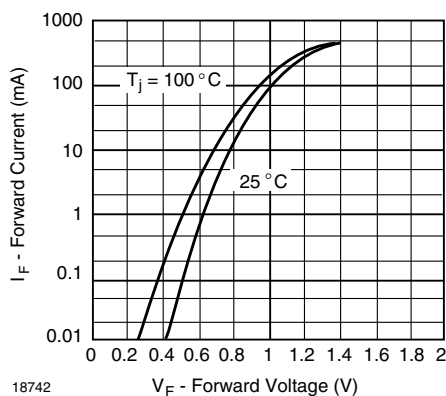


Fig. 1 - Forward Current vs. Forward Voltage

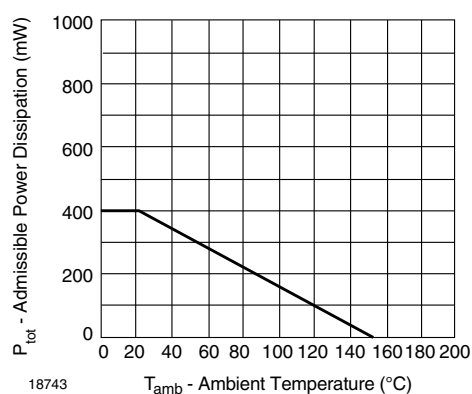


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

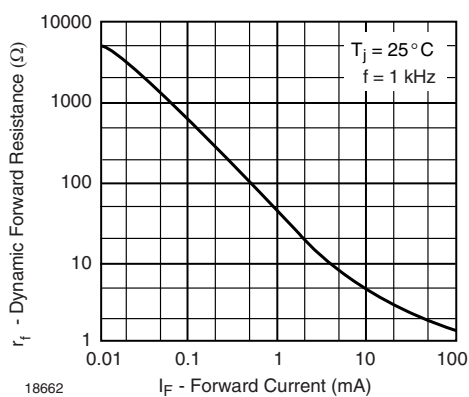


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

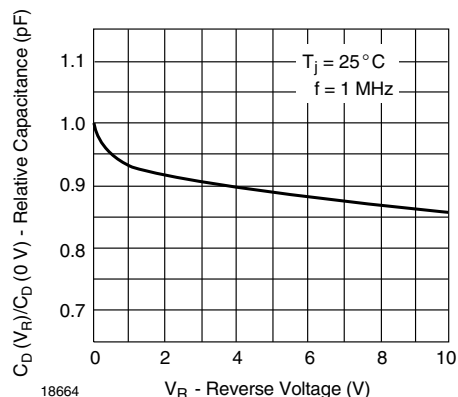


Fig. 4 - Relative Capacitance vs. Reverse Voltage



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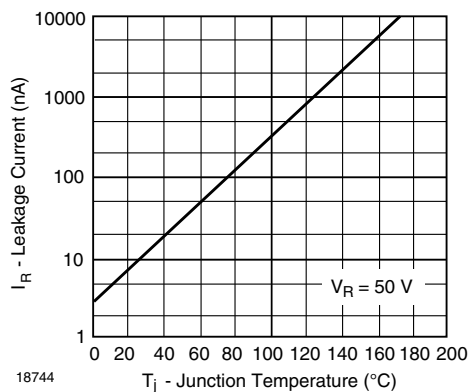


Fig. 5 - Leakage Current vs. Junction Temperature

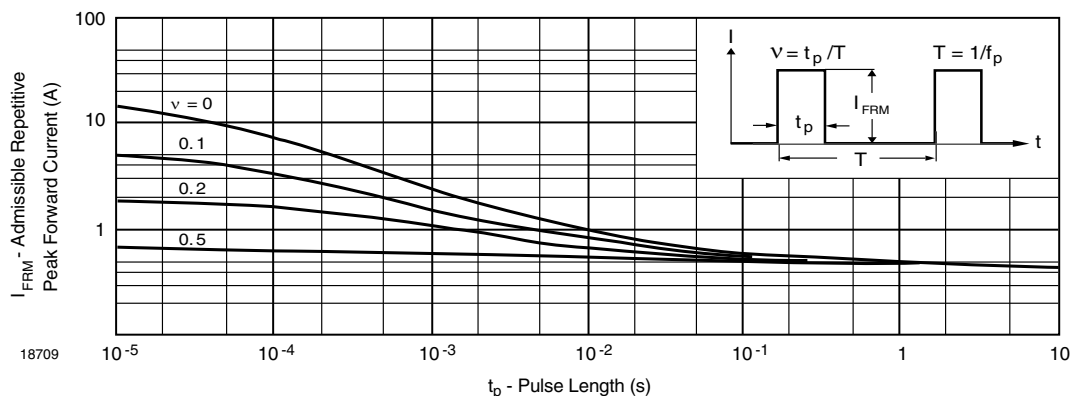


Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

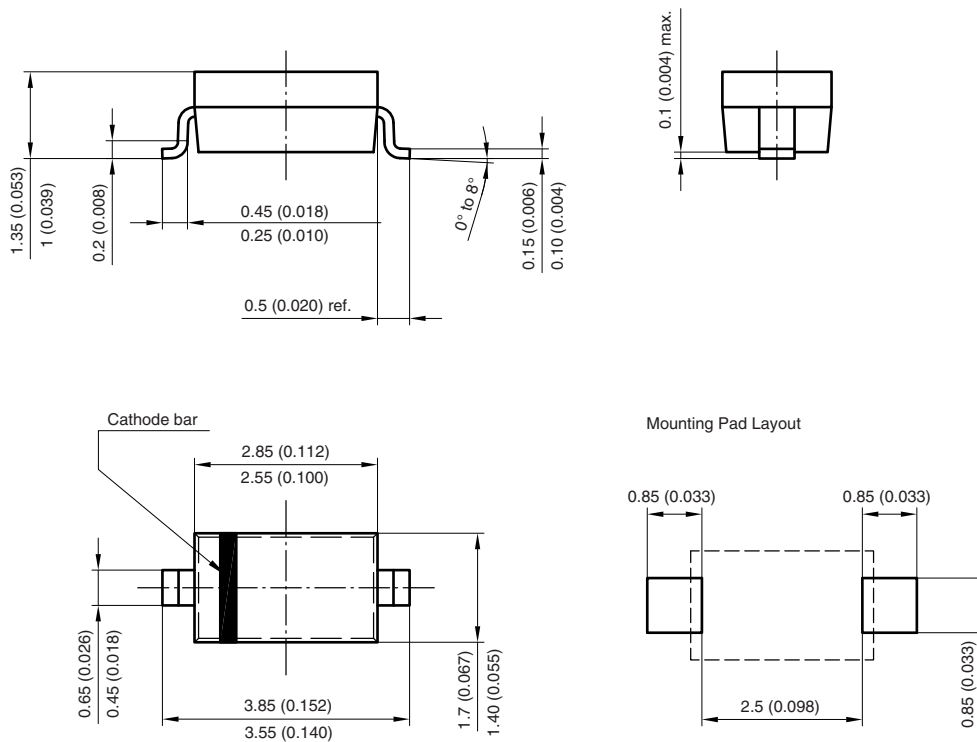


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**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-123**



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