

## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified
- Base P/N-G3 - green, commercial grade
- Material categorization:  
For definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 9.4 mg

**Packaging codes/options:**

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

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

### PARTS TABLE

PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
1N4151W-G	1N4151W-G3-08 or 1N4151W-G3-18	Single diode	AL	Tape and reel

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		$V_R$	50	V
Repetitive peak reverse voltage		$V_{RRM}$	75	V
Average rectified current half wave rectification with resistive load (1)	$f \geq 50 \text{ Hz}$	$I_{F(AV)}$	150	mA
Surge current	$t < 1 \text{ s}$ and $T_j = 25^{\circ}\text{C}$	$I_{FSM}$	500	mA
Power dissipation (1)		$P_{tot}$	410	mW

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air (1)		$R_{thJA}$	450	K/W
Junction temperature		$T_j$	150	°C
Storage temperature range		$T_{stg}$	- 65 to + 150	°C
Operating temperature range		$T_{op}$	- 55 to + 150	°C

#### Note

(1) Valid provided that electrodes are kept at ambient temperature.

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25^\circ C$ , 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
	$V_R = 20 \text{ V}, T_j = 150^\circ C$	$I_R$			50	$\mu\text{A}$
Reverse breakdown voltage	$I_R = 5 \mu\text{A}$ (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
	$I_F = 10 \text{ mA}, I_R = 1 \text{ mA}$ $V_R = 6 \text{ V}, R_L = 100 \Omega$	$t_{rr}$			2	ns

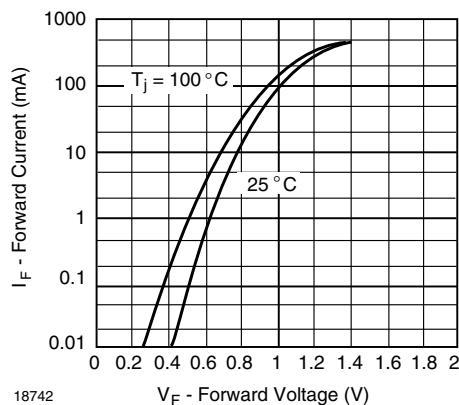
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25^\circ C$ , unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

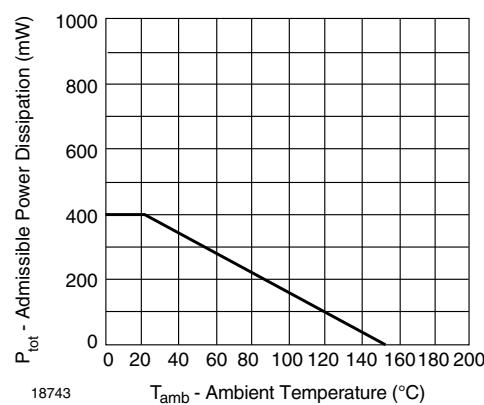


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

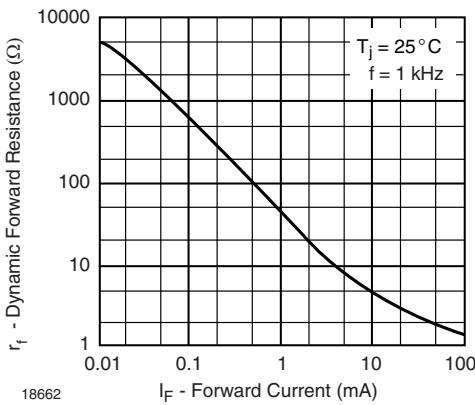


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

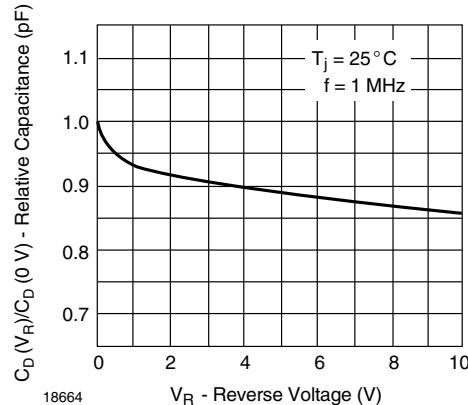


Fig. 4 - Relative Capacitance vs. Reverse Voltage

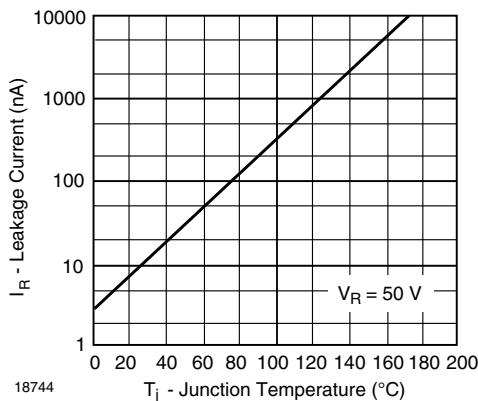


Fig. 5 - Leakage Current vs. Junction Temperature

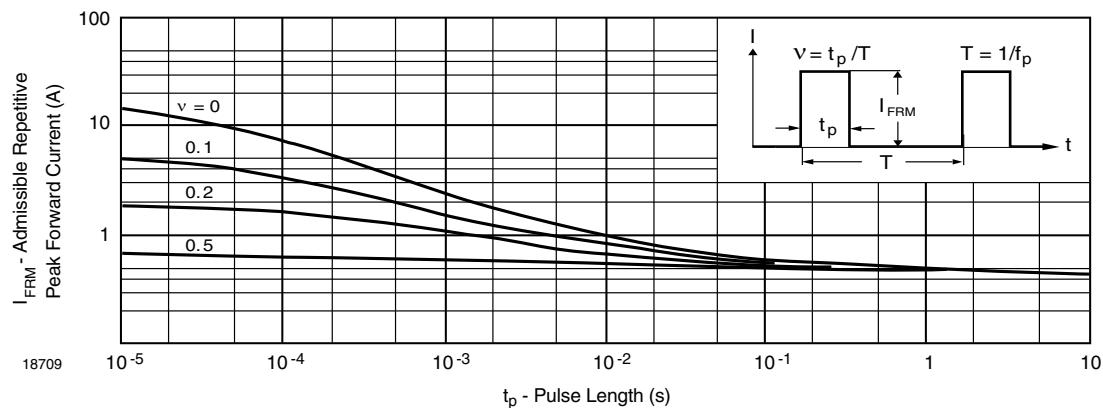
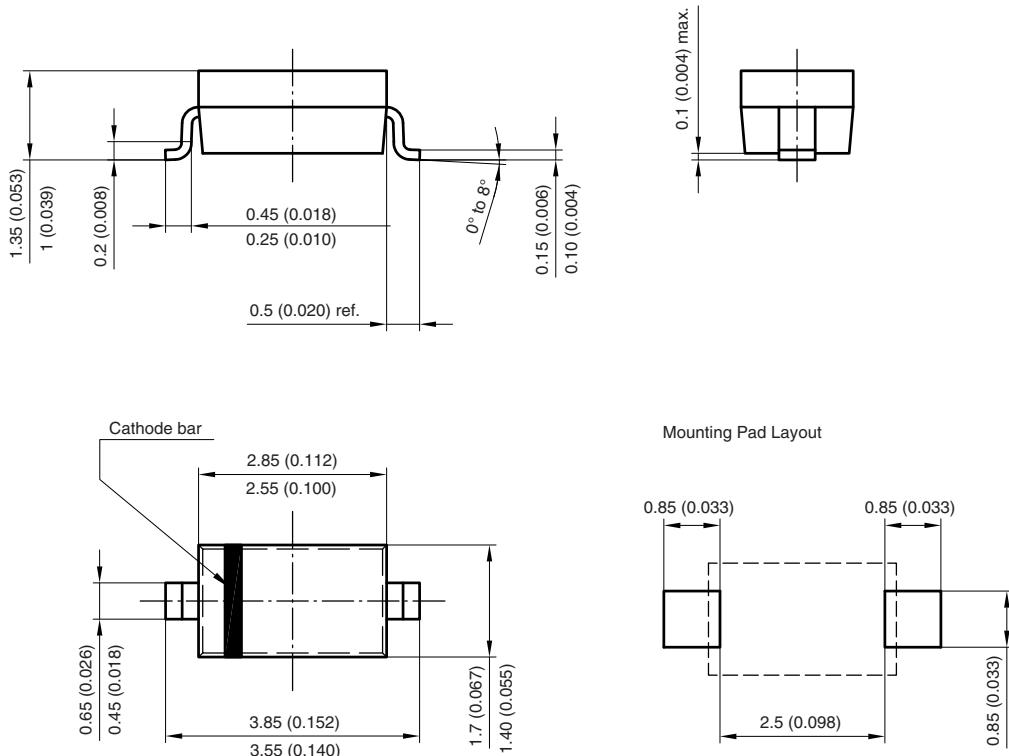


Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

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


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 17432

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