



Small Signal Fast Switching Diode



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



RoHS COMPLIANT

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

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 _{amb} = 25 °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 ≥ 50 Hz	I _{F(AV)}	150	mA
Surge current	t < 1 s and T _j = 25 °C	I _{FSM}	500	mA
Power dissipation ⁽¹⁾		P _{tot}	410	mW

THERMAL CHARACTERISTICS (T _{amb} = 25 °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.

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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	μA
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

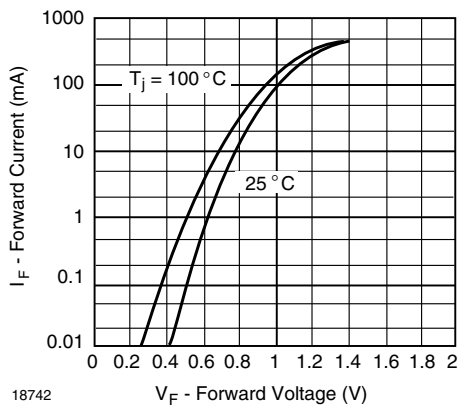
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

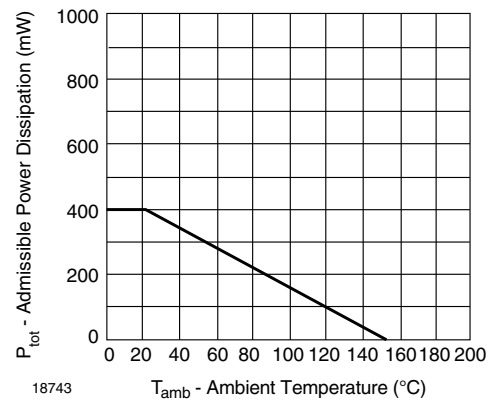


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

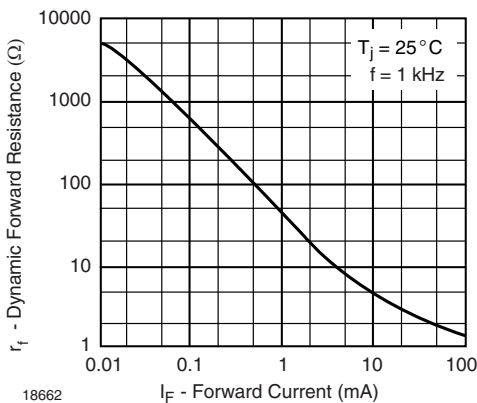


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

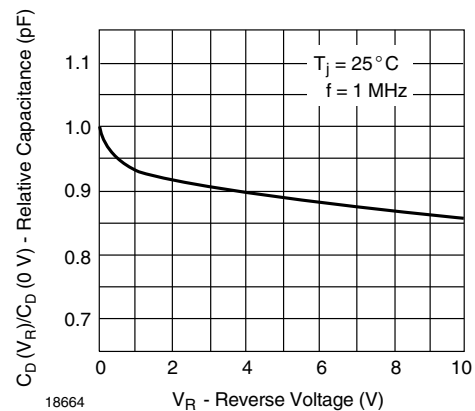


Fig. 4 - Relative Capacitance vs. Reverse Voltage

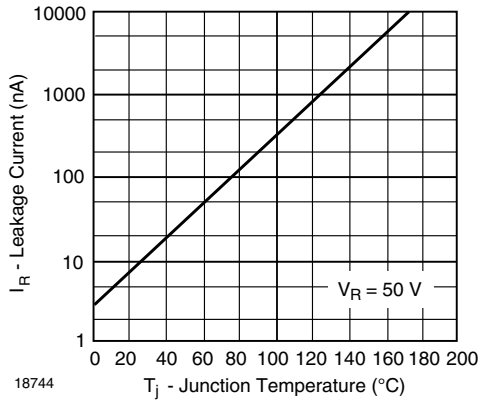


Fig. 5 - Leakage Current vs. Junction Temperature

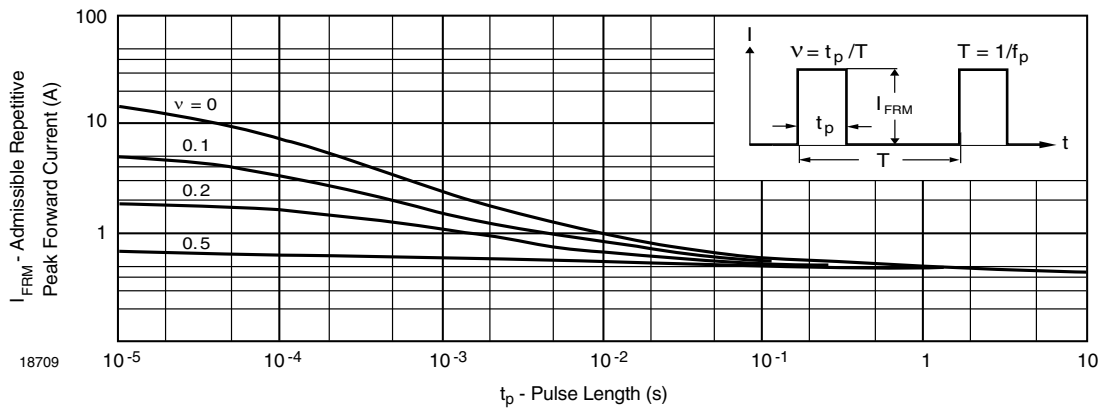
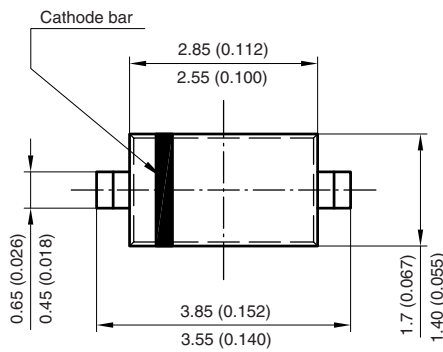
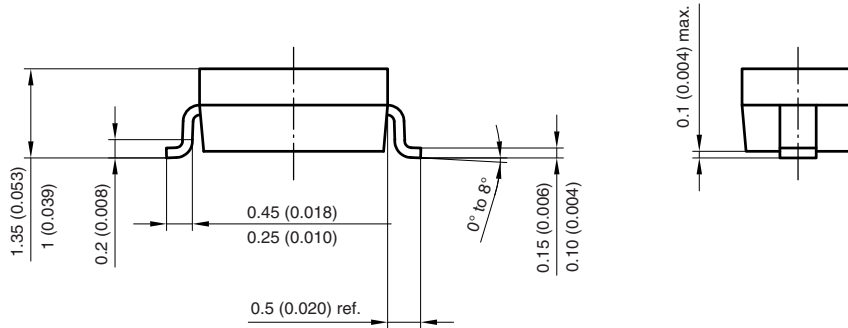


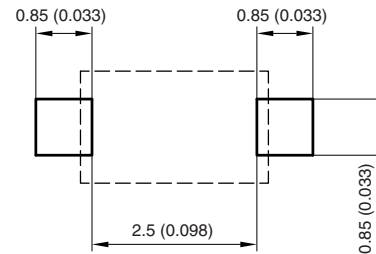
Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



PACKAGE DIMENSIONS in millimeters (inches): SOD-123



Mounting Pad Layout



Rev. 4 - Date: 24. Sep. 2009
Document no.: S8-V-3910.01-001 (4)
17432



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