Small Signal Fast Switching Diode

FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified available
- 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

Pb-free
e3
RoHS COMPLIANT

DESIGN SUPPORT TOOLS

click logo to get started

3D Models Available

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	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
1N4151W	1N4151W-E3-08 or 1N4151W-E3-18	Single	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

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 50 mA	V_F			1.0	V
Leakage current	V_R = 50 V	I_R			50	nA
	V_R = 20 V, T_j = 150 °C	I_R			50	µA
Reverse breakdown voltage	I_R = 5 µA (pulsed)	$V_{(BR)}$	75			V
Diode capacitance	$V_F = V_R$ = 0 V	C_D			2	pF
Reverse recovery time	I_F = 10 mA, I_R = 10 mA i_R = 1 mA	t_{rr}			4	ns
	I_F = 10 mA, i_R = 1 mA V_R = 6 V, R_L = 100 Ω	t_{rr}			2	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

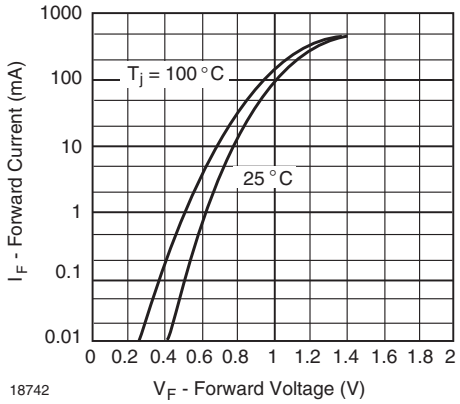

Fig. 1 - Forward Current vs. Forward Voltage

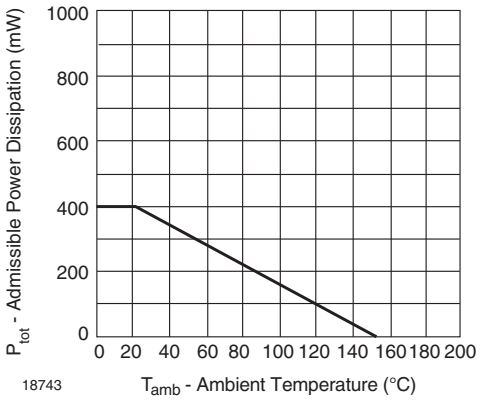

Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

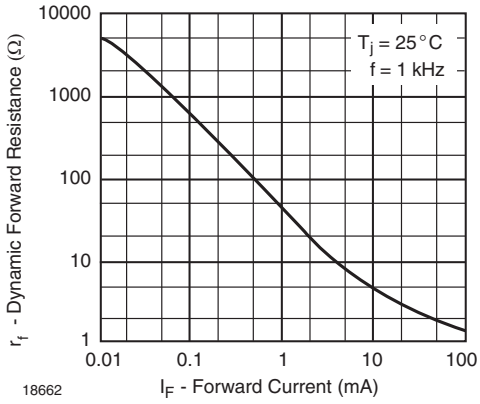

Fig. 2 - Dynamic Forward Resistance vs. Forward Current

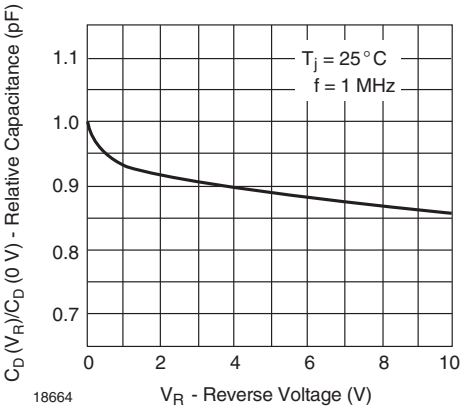

Fig. 4 - Relative Capacitance vs. Reverse Voltage

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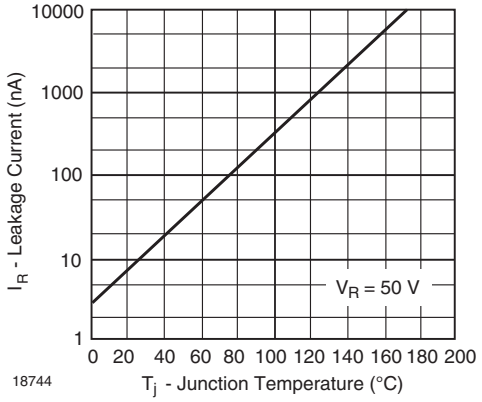

Fig. 5 - Leakage Current vs. Junction Temperature

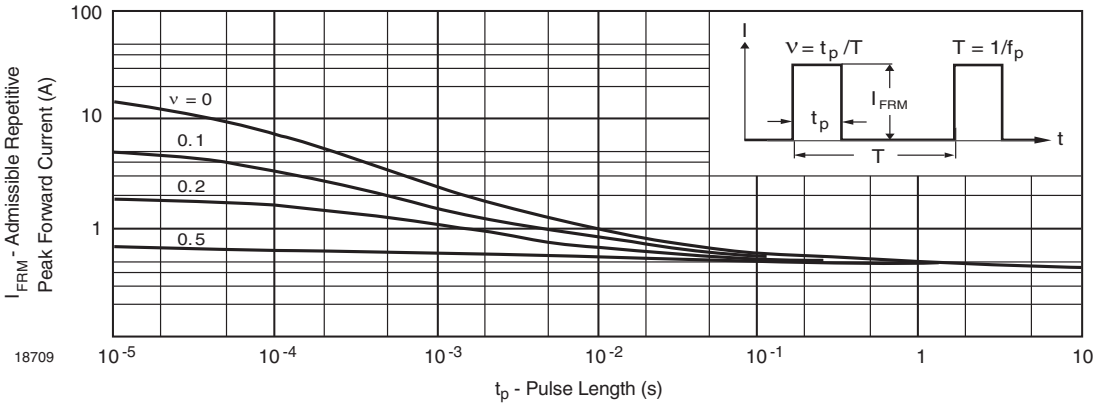

Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

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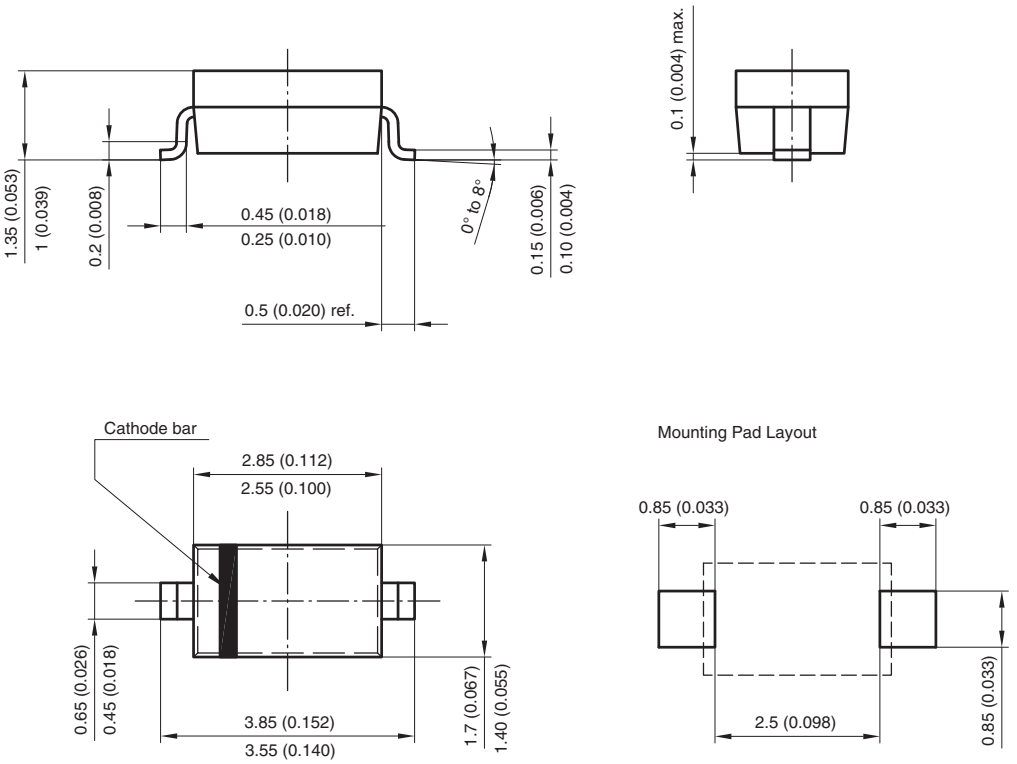
PACKAGE DIMENSIONS in millimeters (inches): **SOD-123**



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