

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



RoHS
COMPLIANT

DESIGN SUPPORT TOOLS click logo to get started



MECHANICAL DATA

Case: SOD-323

Weight: approx. 4.3 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
1N4151WS	1N4151WS-E3-08 or 1N4151WS-E3-18	Single	A5	Tape and reel
	1N4151WS-HE3-08 or 1N4151WS-HE3-18			

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}	200	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}	650	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 ($T_{amb} = 25^\circ C$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 50 \text{ mA}$	V_F			1	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	μA
Reverse breakdown voltage	$I_R = 5 \mu\text{A}$ (pulsed)	$V_{(BR)}$	75			V
Capacitance	$V_F = V_R = 0 \text{ V}$				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

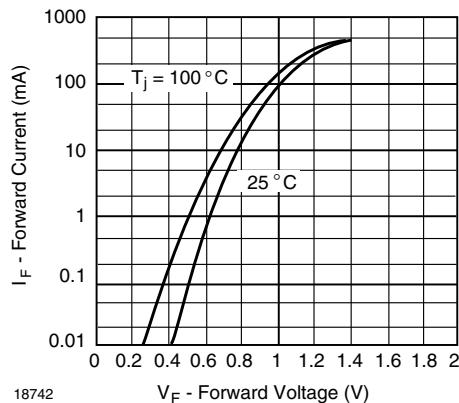
TYPICAL CHARACTERISTICS ($T_{amb} = 25^\circ C$, unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

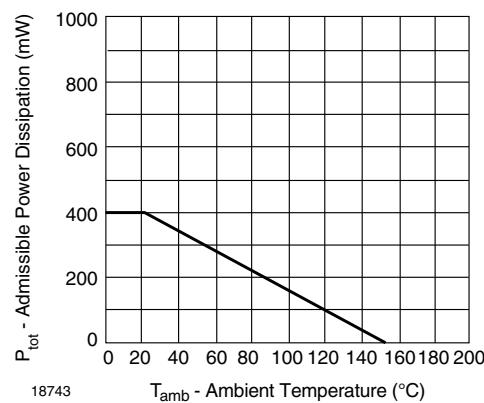


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

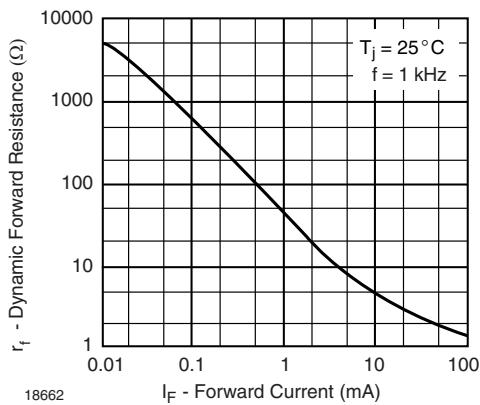


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

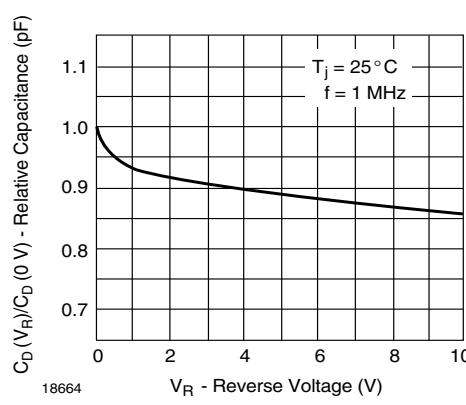


Fig. 4 - Relative Capacitance vs. Reverse Voltage

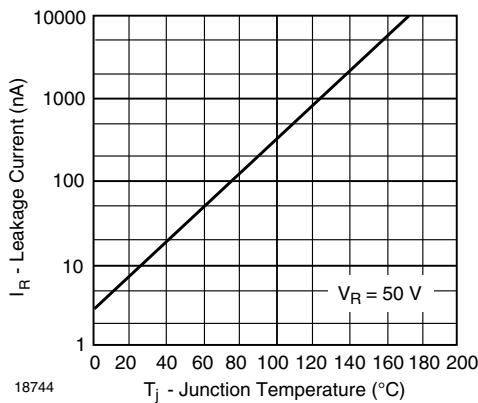


Fig. 5 - Leakage Current vs. Junction Temperature

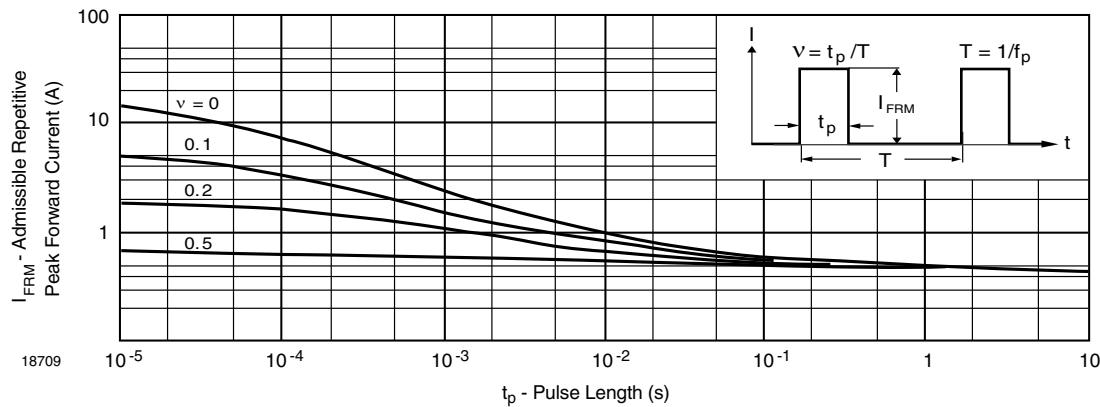
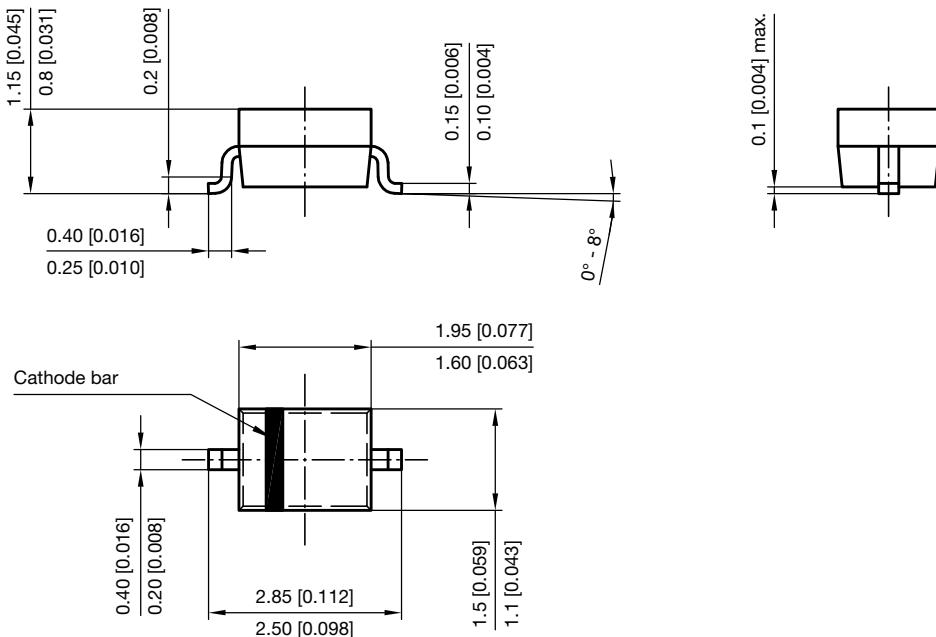
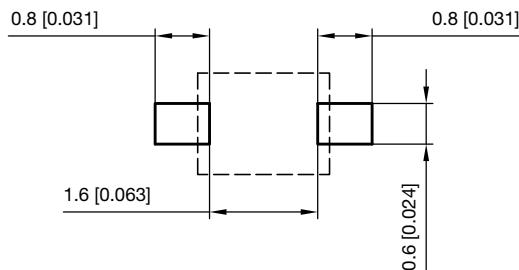


Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

PACKAGE DIMENSIONS in millimeters (inches): **SOD-323**


Footprint recommendation:



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17443

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