



Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Fast switching diodes
- 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

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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	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS
1N4148W	1N4148W-E3-08 or 1N4148W-E3-18	A2	Single	Tape and reel
	1N4148W-HE3-08 or 1N4148W-HE3-18			

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V _R	75	V
Repetitive peak reverse voltage		V _{RRM}	100	V
Average rectified current half wave rectification with resistive load ⁽¹⁾	f ≥ 50 Hz	I _{F(AV)}	150	mA
Surge forward current	t _p < 1 s	I _{FSM}	500	mA
	t _p = 1 μs	I _{FSM}	2	A
Power dissipation ⁽¹⁾		P _{tot}	350	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}	357	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	$I_F = 10\text{ mA}$	V_F			1	V
	$I_F = 100\text{ mA}$	V_F			1.2	V
Leakage current	$V_R = 20\text{ V}$	I_R			25	nA
	$V_R = 75\text{ V}$	I_R			5	μA
	$V_R = 100\text{ V}$	I_R			100	μA
	$V_R = 20\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	I_R			50	μA
Diode capacitance	$V_F = V_R = 0\text{ V}$	C_D			4	pF
Voltage rise when switching ON	Tested with 50 mA pulses, $t_p = 0.1\text{ }\mu\text{s}$, rise time < 30 ns, $f_p = (5\text{ to }100)\text{ kHz}$	V_{fr}			2.5	V
Reverse recovery time	$I_F = 10\text{ mA}, I_R = 1\text{ mA}, V_R = 6\text{ V},$ $R_L = 100\text{ }\Omega$	t_{rr}			4	ns

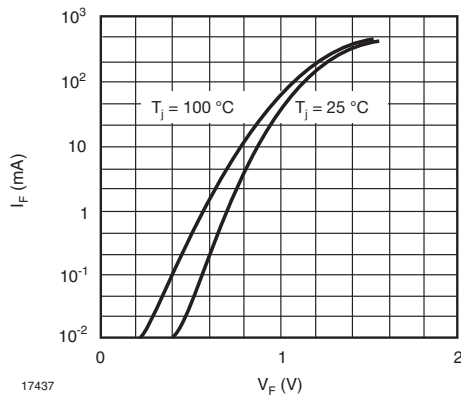
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Characteristics

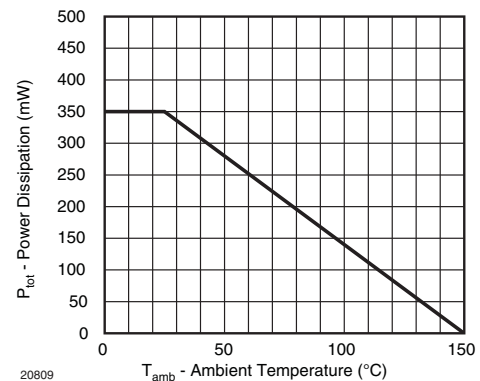


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

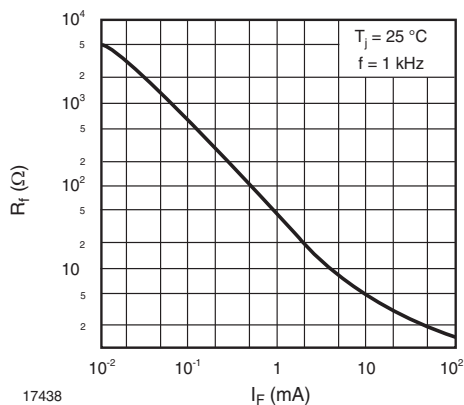


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

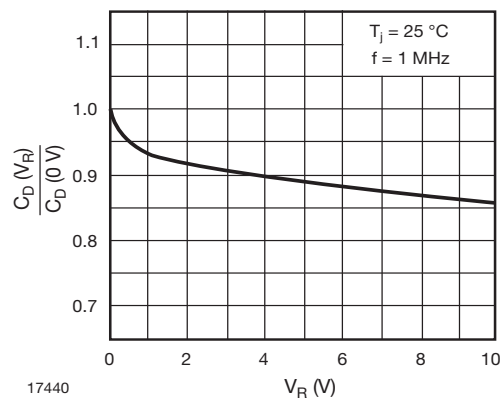


Fig. 4 - Relative Capacitance vs. Reverse Voltage

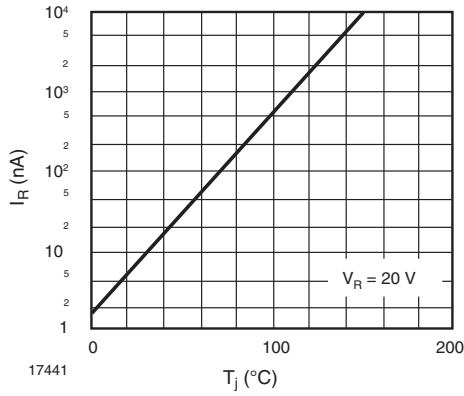


Fig. 5 - Leakage Current vs. Junction Temperature

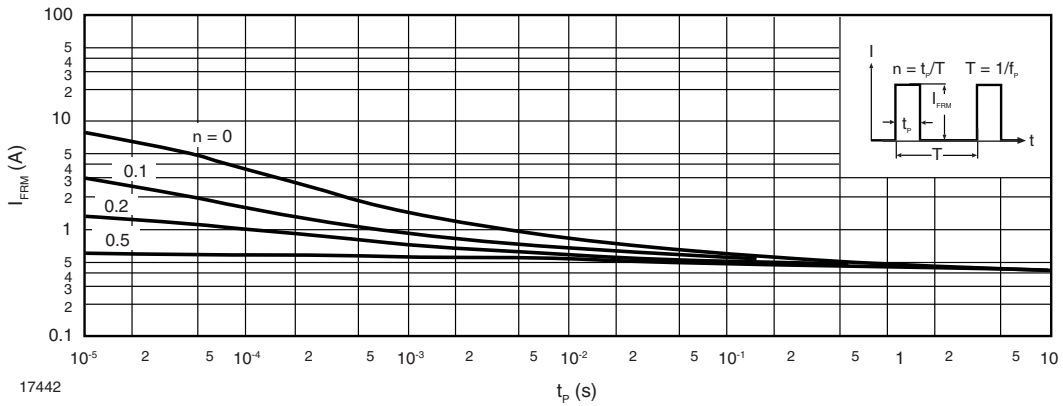
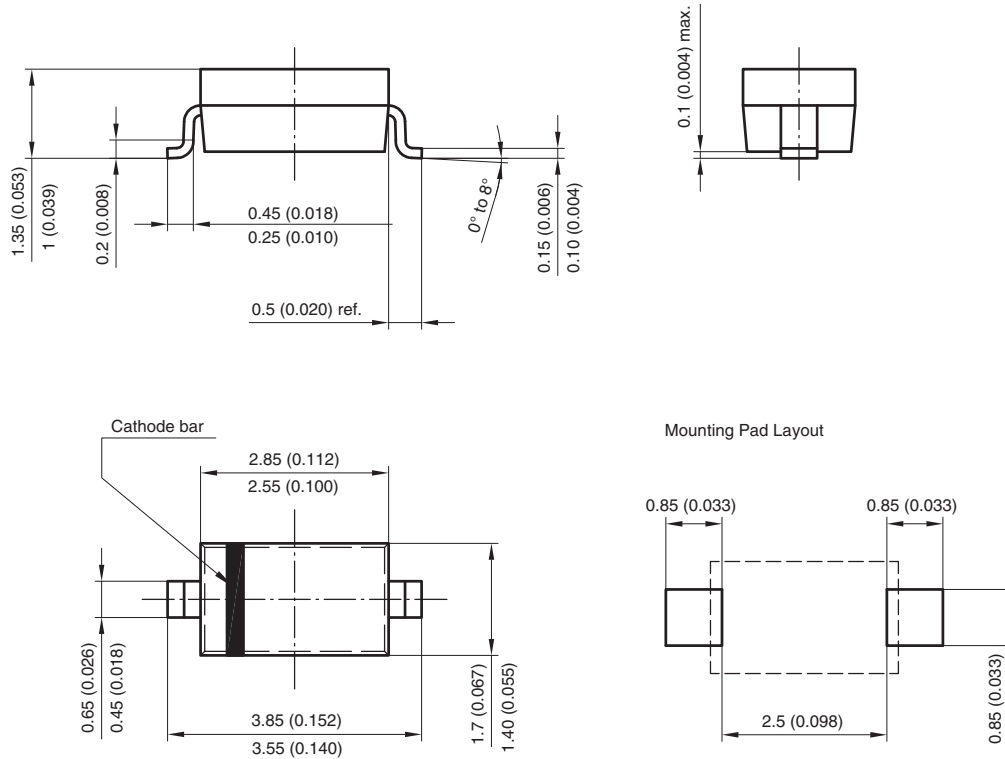


Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



PACKAGE DIMENSIONS in millimeters (inches): SOD-123



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