

Vishay Semiconductors

Small Signal Fast Switching Diode



FEATURES

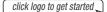
- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified available
- Base P/N-E3 RoHS-compliant, commercial grade





- Base P/N-HE3 RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see <u>www.vishav.com/doc?99912</u>

DESIGN SUPPORT TOOLS





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
1N4448W	1N4448W-E3-08 or 1N4448W-E3-18 1N4448W-HE3-08 or 1N4448W-HE3-18	Single	A3	Tape and reel

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 current	$t < 1$ s and $T_j = 25$ °C	I _{FSM}	500	mA	
Power dissipation (1)		P _{tot}	500	mW	

THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT K/W °C	
Thermal resistance junction to ambient air (1)		R _{thJA}	350	K/W	
Junction temperature		Tj	150	°C	
Storage temperature		T _{stg}	-65 to +150	°C	
Operating temperature		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
Command valtage	I _F = 100 mA	V _F			1	V
Forward voltage	I _F = 5 mA	V _F	0.62		0.72	V
	V _R = 20 V	I _R			25	nA
Leakage current	V _R = 75 V	I _R			5	μΑ
	V _R = 20 V, T _J = 150 °C	I _R			50	μΑ
Capacitance	$V_F = V_R = 0 V$				4	pF
Reverse recovery time	$I_F = 10 \text{ mA}, i_R = 1 \text{ mA}, V_R = 6 \text{ V}, R_L = 100 \Omega$	t _{rr}			4	ns

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

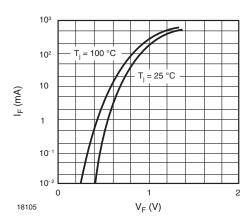


Fig. 1 - Forward Characteristics

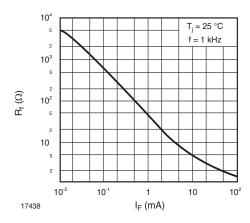


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

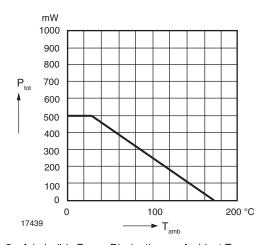


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

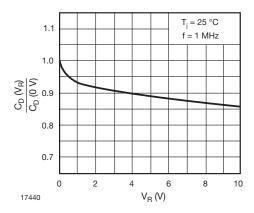


Fig. 4 - Relative Capacitance vs. Reverse Voltage



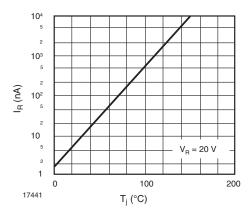


Fig. 5 - Leakage Current vs. Junction Temperature

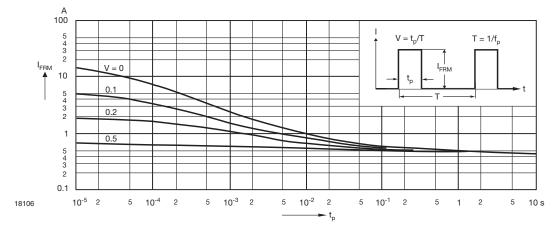
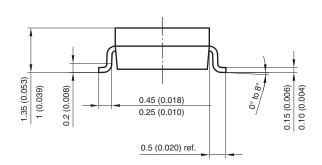


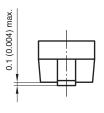
Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



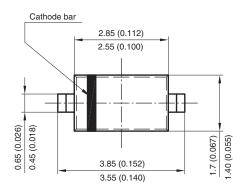
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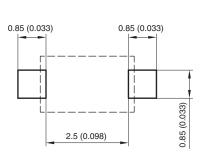
PACKAGE DIMENSIONS in millimeters (inches): SOD-123





Mounting Pad Layout





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