Small Signal Fast Switching Diode

FEATURES

- Silicon epitaxial planar diode
- Fast switching diodes
- 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

Pb-free
e3
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	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
1N4148W	1N4148W-E3-08 or 1N4148W-E3-18	A2	Single diode	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.

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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 = 10 mA	V_F			1	V
	I_F = 100 mA	V_F			1.2	V
Leakage current	V_R = 20 V	I_R			25	nA
	V_R = 75 V	I_R			5	µA
	V_R = 100 V	I_R			100	µA
	V_R = 20 V, T_J = 150 °C	I_R			50	µA
Diode capacitance	$V_F = V_R$ = 0 V	C_D			4	pF
Voltage rise when switching ON	Tested with 50 mA pulses, t_p = 0.1 µs, rise time < 30 ns, f_p = (5 to 100) kHz	V_{fr}			2.5	V
Reverse recovery time	I_F = 10 mA, i_R = 1 mA, V_R = 6 V, R_L = 100 Ω	t_{rr}			4	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °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

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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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