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
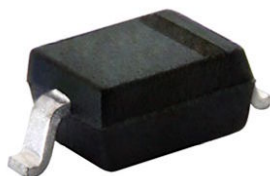
MARKING (example only)

I X Y

22610

Bar = cathode marking
XY = type code

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	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
1N4148WS	1N4148WS-E3-08 or 1N4148WS-E3-18	Single diode	A2	Tape and reel
	1N4148WS-HE3-08 or 1N4148WS-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	
Average rectified current half wave rectification with resistive load [1]	f ≥ 50 Hz	$I_{F(AV)}$	150	mA
Surge forward current	t < 1 s and T_j = 25 °C	I_{FSM}	350	
Power dissipation [1]		P_{tot}	200	mW

Note

[1] Valid provided that electrodes are kept at ambient temperature.

THERMAL CHARACTERISTICS (T_{amb} = 25 °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 °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	
	V_R = 20 V, T_j = 150 °C	I_R			50	
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)
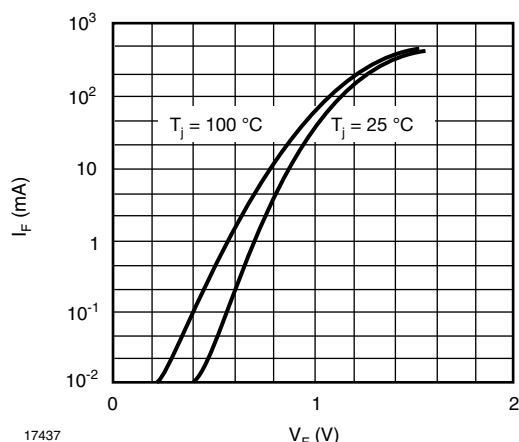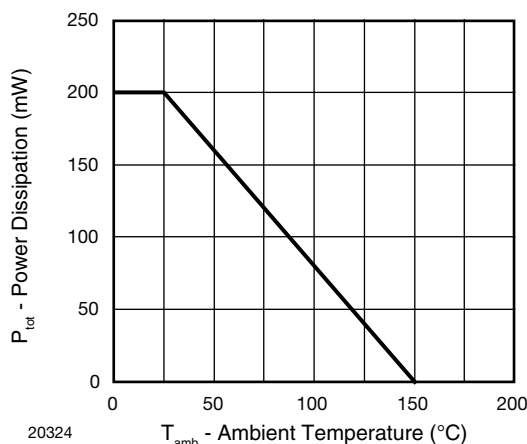

Fig. 1 - Forward Characteristics

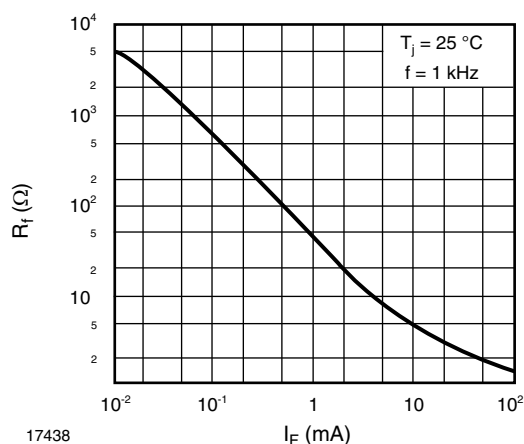Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

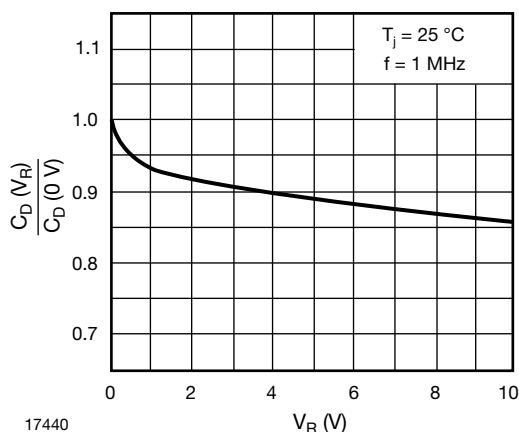Fig. 2 - Dynamic Forward Resistance vs. Forward Current

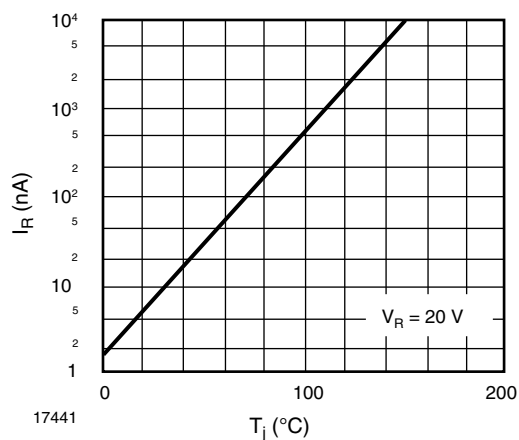Fig. 4 - Relative Capacitance vs. Reverse Voltage
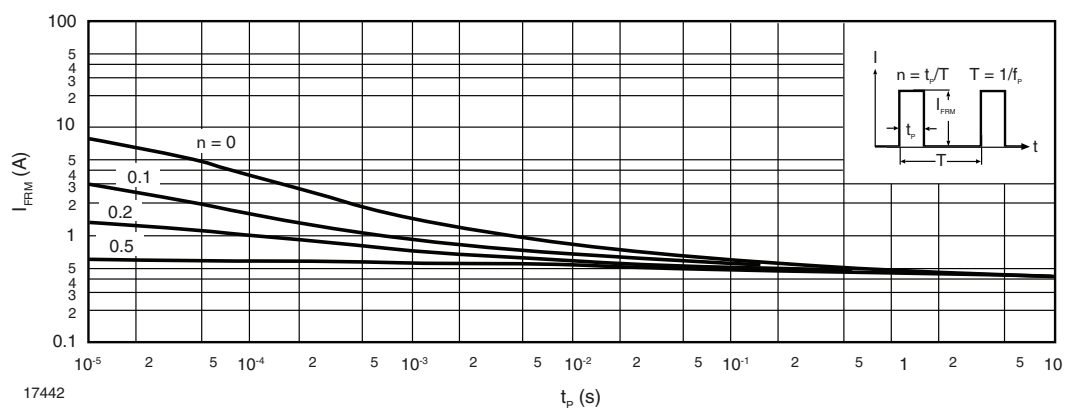
Fig. 5 - Leakage Current vs. Junction Temperature
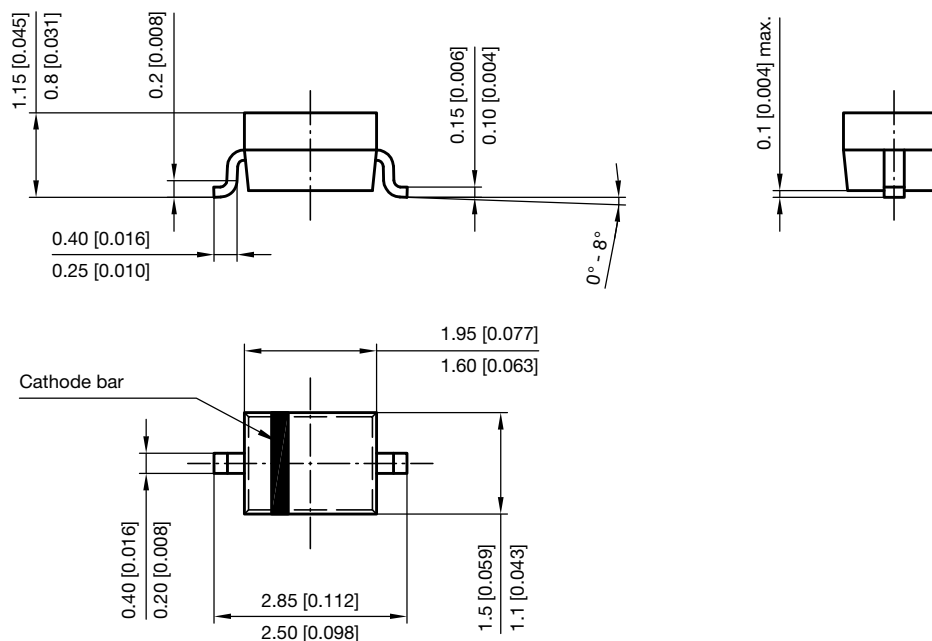

Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

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

1.15 [0.045]
0.8 [0.031]
0.2 [0.008]
0.15 [0.006]
0.10 [0.004]
0.1 [0.004] max.

0.40 [0.016]
0.25 [0.010]
0° - 8°

1.95 [0.077]
1.60 [0.063]

Cathode bar

0.40 [0.016]
0.20 [0.008]

2.85 [0.112]
2.50 [0.098]

1.5 [0.059]
1.1 [0.043]

Footprint recommendation:

0.8 [0.031]
0.8 [0.031]

1.6 [0.063]
0.6 [0.024]
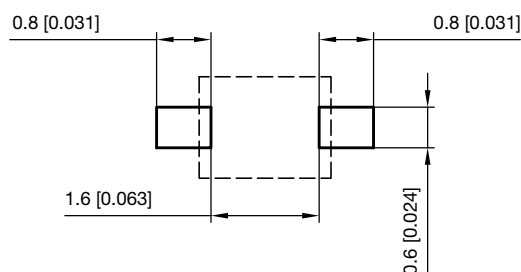
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