

## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- This diode is also available in other case styles including the DO-35 case with the type designation 1N4448, the MiniMELF case with the type designation LL4448, and the SOT-23 case with the type designation IMBD4448
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 10.3 mg

**Packaging codes/options:**

GS18/10K per 13" reel (8 mm tape), 10K/box

GS08/3K per 7" reel (8 mm tape), 15K/box

<b>PARTS TABLE</b>				
PART	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
1N4448W-V	1N4448W-V-GS18 or 1N4448W-V-GS08	A3	Single diode	Tape and reel

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_{amb} = 25^{\circ}C$ , 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 <sup>(1)</sup>	$f \geq 50 \text{ Hz}$	$I_{F(AV)}$	150	mA
Surge current	$t < 1 \text{ s}$ and $T_j = 25^{\circ}C$	$I_{FSM}$	500	mA
Power dissipation <sup>(1)</sup>		$P_{tot}$	500	mW

<b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25^{\circ}C$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	350	K/W
Junction temperature		$T_j$	150	°C
Storage temperature		$T_{stg}$	- 65 to + 150	°C

#### Note

<sup>(1)</sup> Valid provided that leads at a distance of 8 mm from case 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	$I_F = 5 \text{ mA}$	$V_F$	0.62		0.72	V
	$I_F = 100 \text{ mA}$	$V_F$			1	V
Leakage current	$V_R = 20 \text{ V}$	$I_R$			25	nA
	$V_R = 75 \text{ V}$	$I_R$			5	$\mu\text{A}$
	$V_R = 20 \text{ V}, T_J = 150^\circ C$	$I_R$			50	$\mu\text{A}$
Capacitance	$V_F = V_R = 0 \text{ V}$				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
Rectification efficiency	$f = 100 \text{ MHz}, V_{RF} = 2 \text{ V}$	$\eta_V$	0.45			

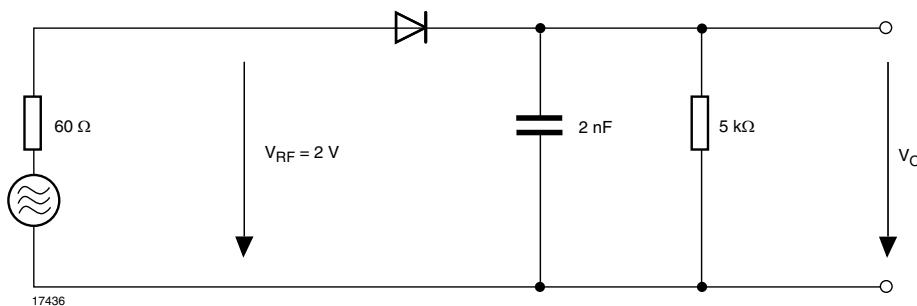
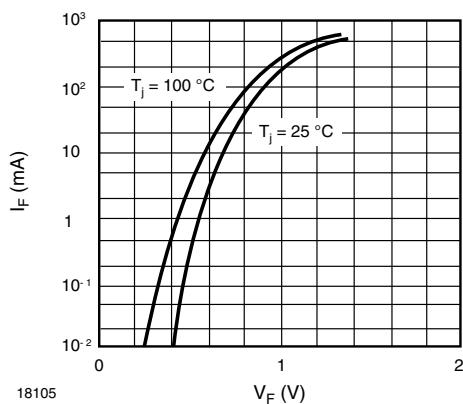
**RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT**

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


Fig. 1 - Forward Characteristics

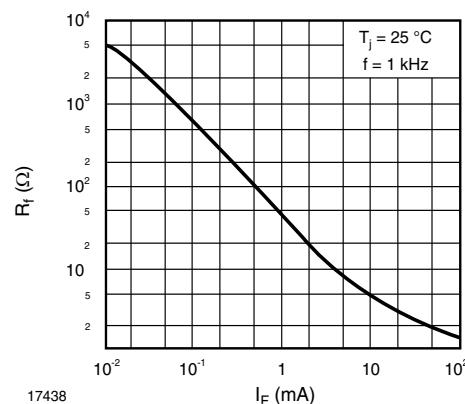


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

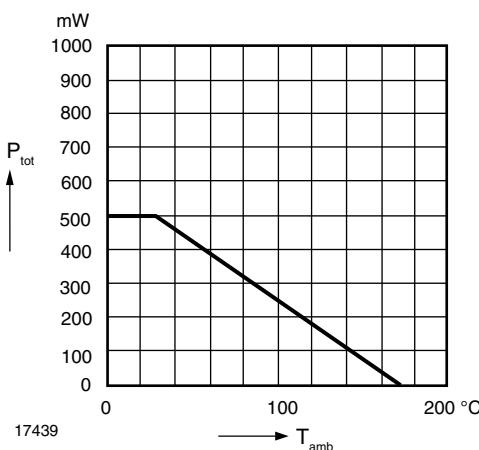


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

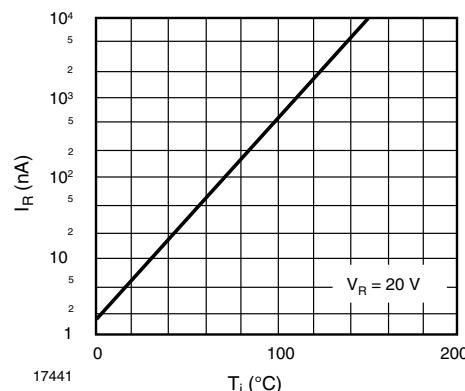


Fig. 5 - Leakage Current vs. Junction Temperature

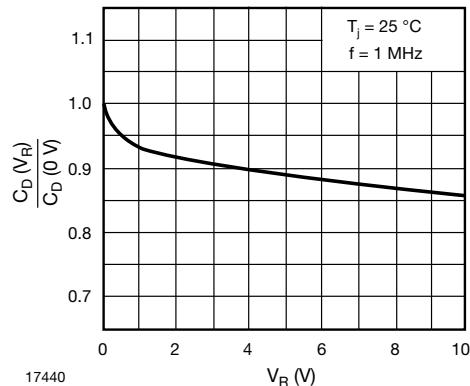


Fig. 4 - Relative Capacitance vs. Reverse Voltage

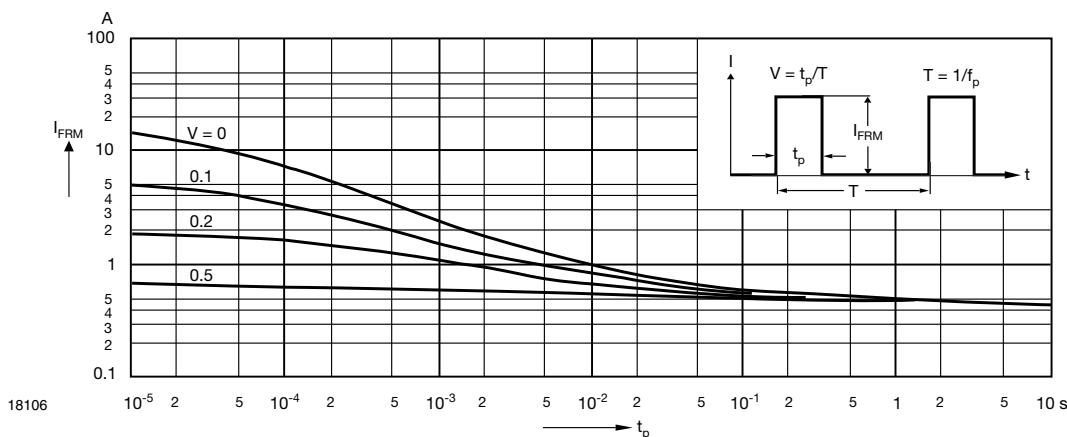
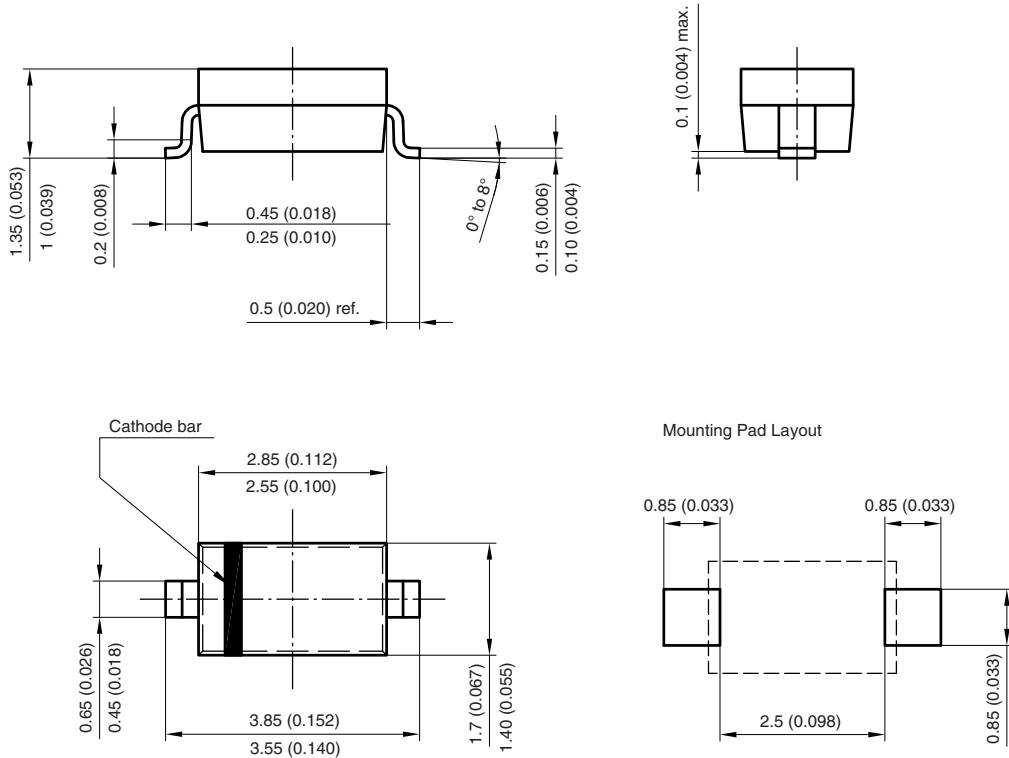


Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-123**


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