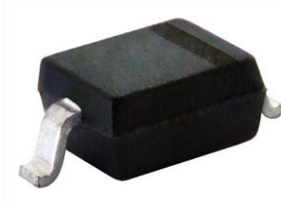




**THE DATASHEET OF  
1N4148WS-HE3-18**



## Small Signal Fast Switching Diode



### MARKING (example only)



22610

Bar = cathode marking  
XY = type code

### DESIGN SUPPORT TOOLS [click logo to get started](#)



### 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](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### 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	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
1N4148WS	1N4148WS-E3-08 or 1N4148WS-E3-18	Single	A2	Tape and reel
	1N4148WS-HE3-08 or 1N4148WS-HE3-18			

ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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 <sup>(1)</sup>	$f \geq 50\text{ Hz}$	$I_{F(AV)}$	150	mA
Surge forward current	$t < 1\text{ s}$ and $T_j = 25\text{ }^{\circ}\text{C}$	$I_{FSM}$	350	
Power dissipation <sup>(1)</sup>		$P_{tot}$	200	mW

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature.

THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	650	K/W
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-65 to +150	$^{\circ}\text{C}$
Operating temperature range		$T_{op}$	-55 to +150	$^{\circ}\text{C}$

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature



ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 10 mA	V <sub>F</sub>			1	V
	I <sub>F</sub> = 100 mA	V <sub>F</sub>			1.2	V
Leakage current	V <sub>R</sub> = 20 V	I <sub>R</sub>			25	nA
	V <sub>R</sub> = 75 V	I <sub>R</sub>			5	μA
	V <sub>R</sub> = 100 V	I <sub>R</sub>			100	
	V <sub>R</sub> = 20 V, T <sub>j</sub> = 150 °C	I <sub>R</sub>			50	
Diode capacitance	V <sub>F</sub> = V <sub>R</sub> = 0 V	C <sub>D</sub>			4	pF
Voltage rise when switching ON	Tested with 50 mA pulses, t <sub>p</sub> = 0.1 μs, rise time < 30 ns, f <sub>p</sub> = (5 to 100) kHz	V <sub>fr</sub>			2.5	V
Reverse recovery time	I <sub>F</sub> = 10 mA, I <sub>R</sub> = 1 mA, V <sub>R</sub> = 6 V, R <sub>L</sub> = 100 Ω	t <sub>rr</sub>			4	ns

**TYPICAL CHARACTERISTICS** (T<sub>amb</sub> = 25 °C, unless otherwise specified)

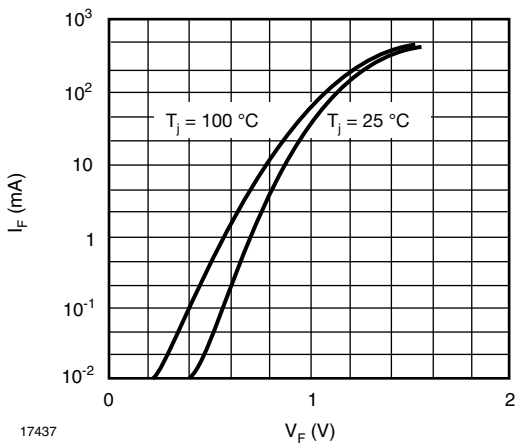


Fig. 1 - Forward Characteristics

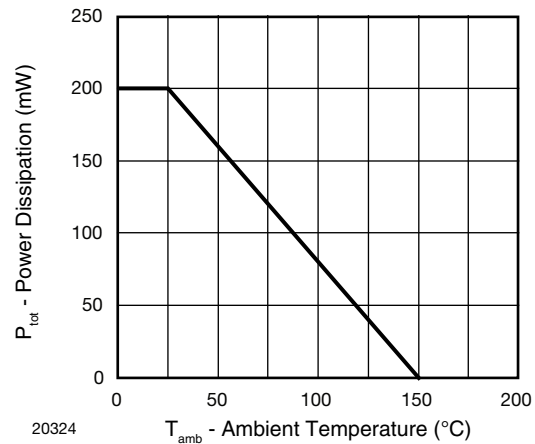


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

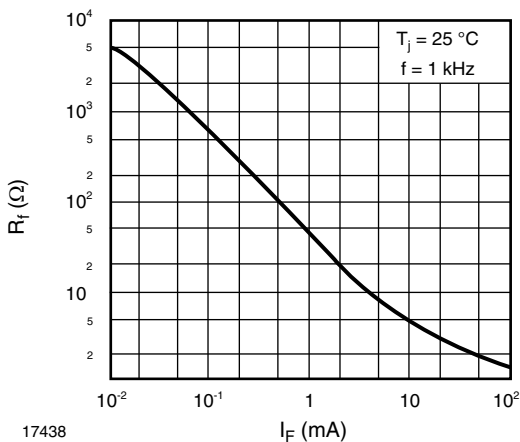


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

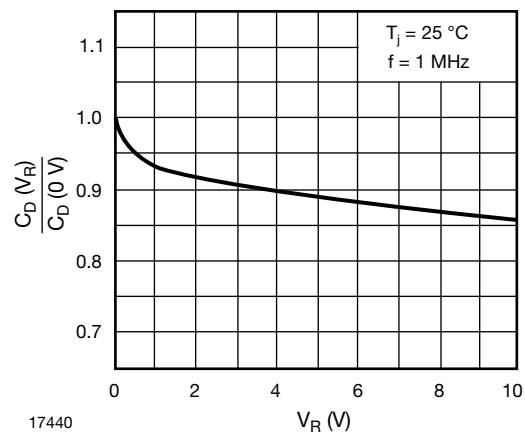


Fig. 4 - Relative Capacitance vs. Reverse Voltage

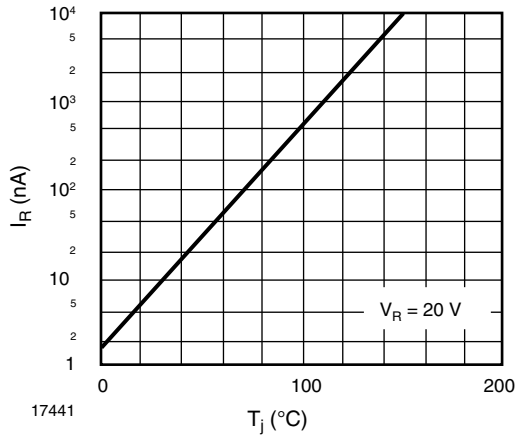


Fig. 5 - Leakage Current vs. Junction Temperature

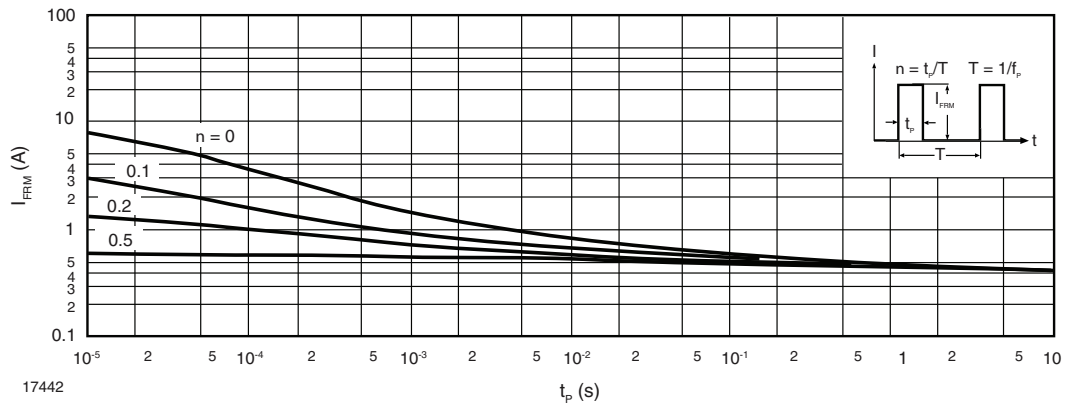
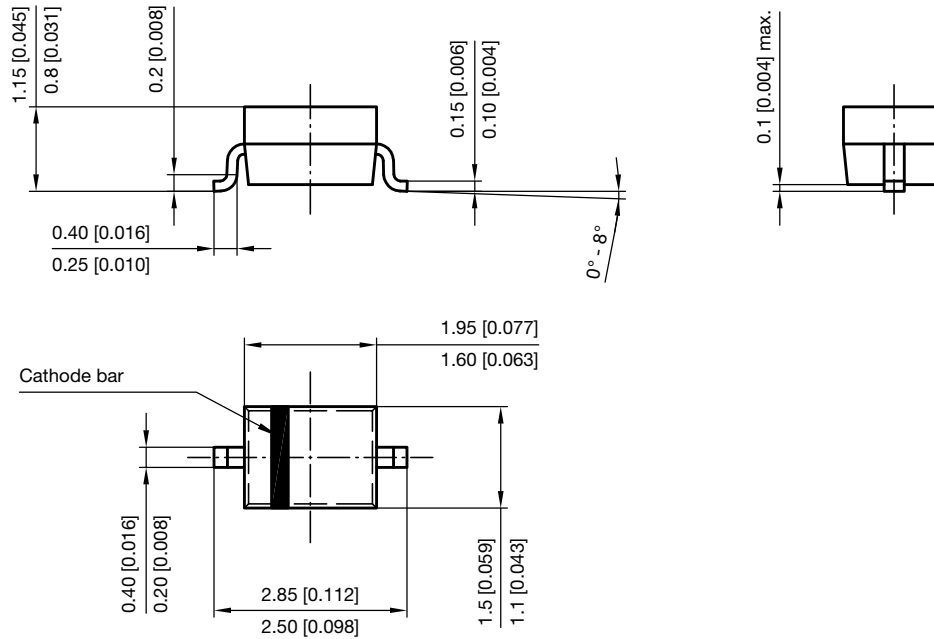


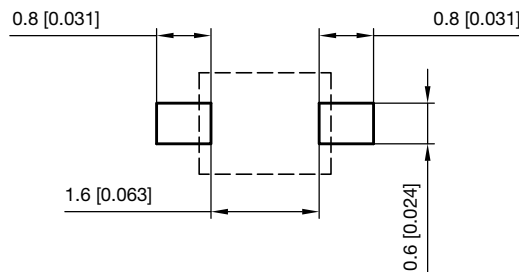
Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



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



Footprint recommendation:



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17443



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