

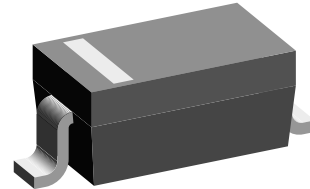
## Small Signal Fast Switching Diode

### Features

- These diodes are also available in other case styles including the DO-35 case with the type designation 1N4148, the MiniMELF case with the type designation LL4148, and the SOT-23 case with the type designation IMBD4148-V.
- Silicon epitaxial planar diode
- Fast switching diodes
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS  
COMPLIANT



17431

### Mechanical Data

**Case:** SOD-123

**Weight:** approx. 10.3 mg

#### Packaging codes/options:

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

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

### Parts Table

Part	Ordering code	Marking	Remarks
1N4148W-V	1N4148W-V-GS18 or 1N4148W-V-GS08	A2	Tape and Reel

### 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	V
Average rectified current half wave rectification with resistive load	$f \geq 50\text{ Hz}$	$I_{F(AV)}$	150 <sup>1)</sup>	mA
Surge forward current	$t < 1\text{ s}$ and $T_j = 25\text{ }^{\circ}\text{C}$	$I_{FSM}$	500	mA
Power dissipation		$P_{tot}$	350 <sup>1)</sup>	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		$R_{thJA}$	357 <sup>1)</sup>	K/W
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature		$T_{stg}$	- 65 to + 150	$^{\circ}\text{C}$

Note:

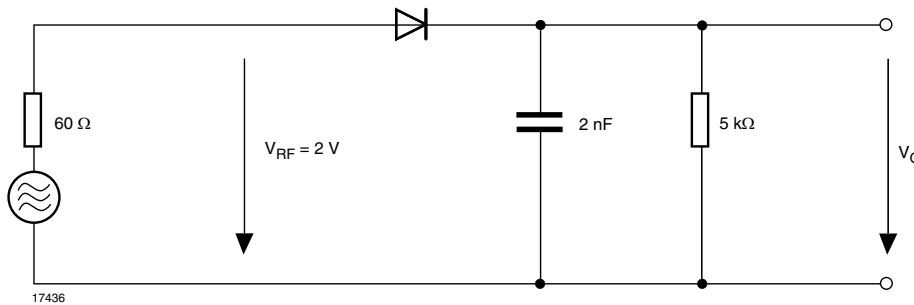
<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature.

## Electrical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F = 10\text{ mA}$	$V_F$			1000	mV
	$I_F = 100\text{ mA}$	$V_F$			1200	mV
Leakage current	$V_R = 20\text{ V}$	$I_R$			25	nA
	$V_R = 75\text{ V}$	$I_R$			5	$\mu\text{A}$
	$V_R = 100\text{ V}$	$I_R$			100	$\mu\text{A}$
	$V_R = 20\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
Diode capacitance	$V_F = V_R = 0\text{ V}$	$C_D$			4	pF
Voltage rise when switching ON (tested with 50 mA pulses)	Tested with 50 mA pulses, $t_p = 0.1\text{ }\mu\text{s}$ , rise time < 30 ns, $f_p = (5\text{ to }100)\text{ kHz}$	$V_{fr}$			2.5	V
Reverse recovery time	$I_F = 10\text{ mA}, I_R = 1\text{ mA}, V_R = 6\text{ V},$ $R_L = 100\text{ }\Omega$	$t_{rr}$			4	ns
Rectification efficiency	$f = 100\text{ MHz}, V_{RF} = 2\text{ V}$	$\eta_V$	0.45			

## Rectification Efficiency Measurement Circuit



## Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

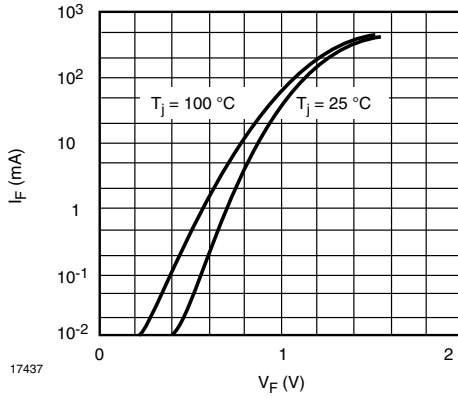


Figure 1. Forward characteristics

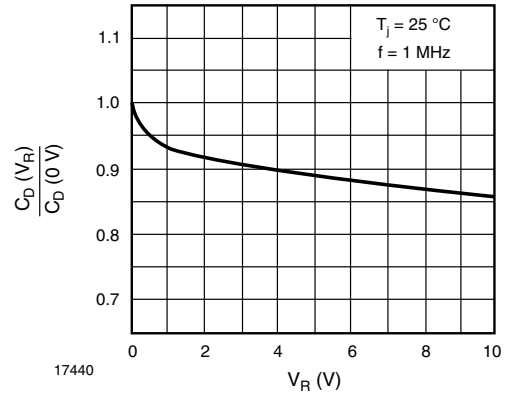


Figure 4. Relative Capacitance vs. Reverse Voltage

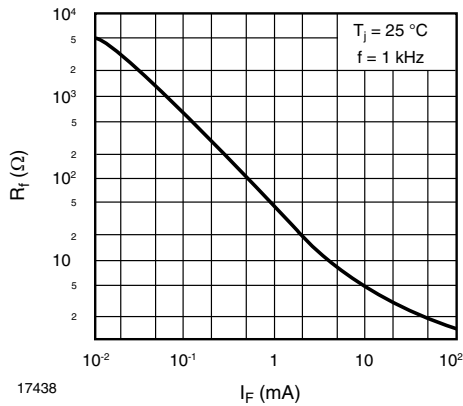


Figure 2. Dynamic Forward Resistance vs. Forward Current

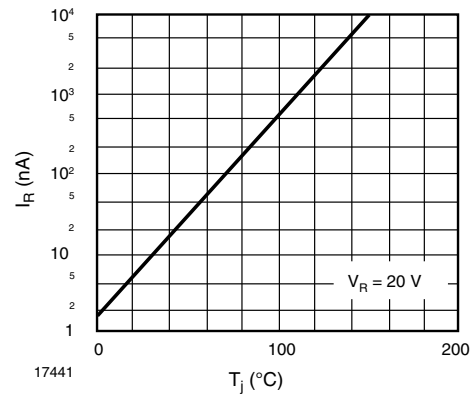


Figure 5. Leakage Current vs. Junction Temperature

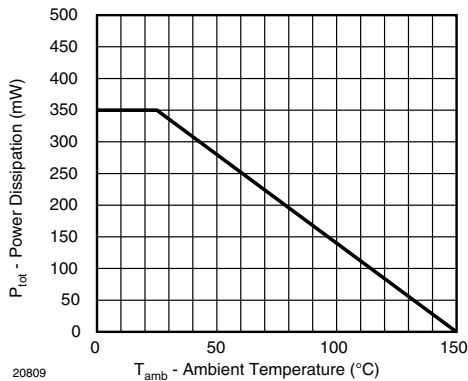


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

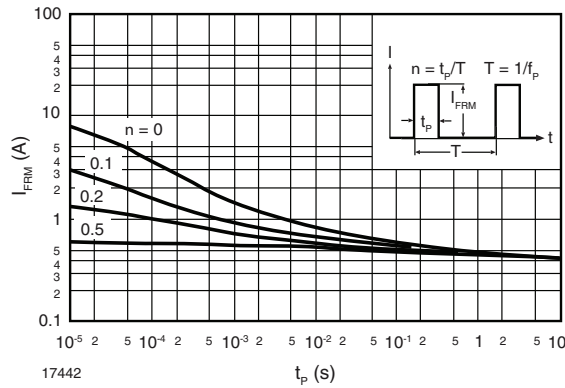
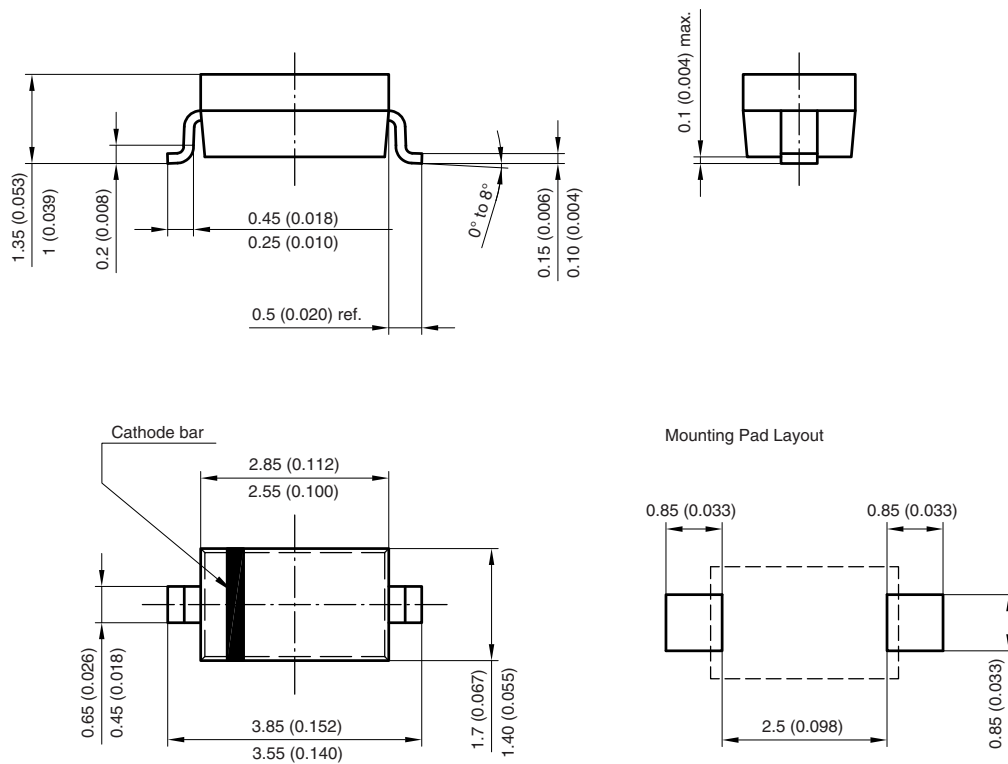


Figure 6. Admissible Repetitive Peak Forward Current vs. Pulse Duration

## Package Dimensions in millimeters (inches): SOD-123



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 17432



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