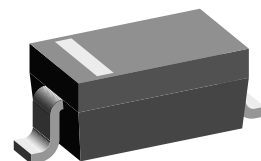


Small Signal Fast Switching Diode

Features

- These diodes are also available in other case styles including the DO35 case with the type designation 1N4148, the MiniMELF case with the type designation LL4148, and the SOT23 case with the type designation IMBD4148-V.
- Silicon epitaxial planar diode
- Fast switching diodes
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



17431

Mechanical Data

Case: SOD123 plastic case

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 ¹⁾	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 ¹⁾	mW

Note:

¹⁾ 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 ¹⁾	K/W
Junction temperature		T_j	150	$^{\circ}\text{C}$
Storage temperature		T_{stg}	- 65 to + 150	$^{\circ}\text{C}$

Note:

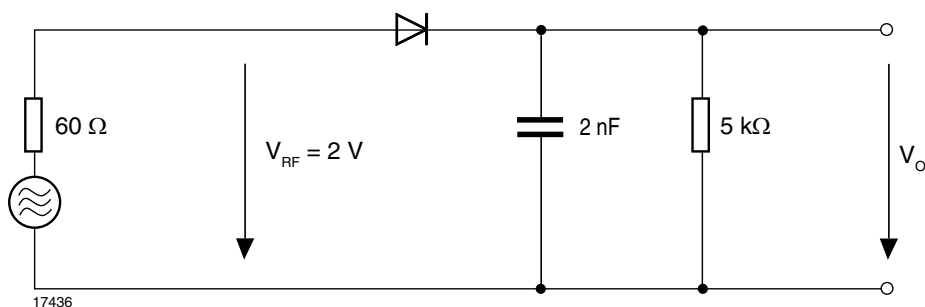
¹⁾ Valid provided that electrodes are kept at ambient temperature.

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	μA
	$V_R = 100\text{ V}$	I_R			100	μA
	$V_R = 20\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	I_R			50	μA
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 $< 30\text{ ns}$, $f_p = (5\text{ to }100)\text{ kHz}$	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	$f = 100\text{ MHz}, V_{RF} = 2\text{ V}$	η_V	0.45			

Rectification Efficiency Measurement Circuit



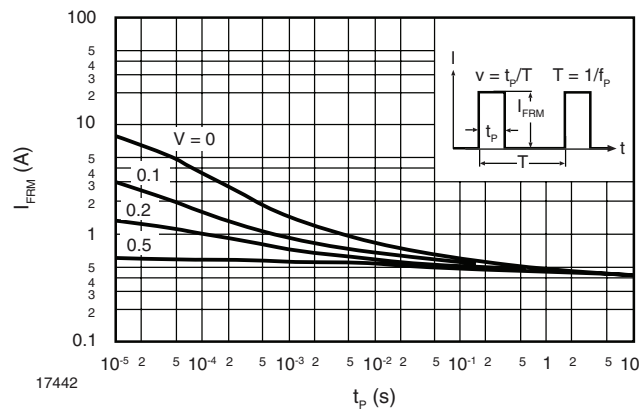


Figure 6. Admissible Repetitive Peak Forward Current vs. Pulse Duration

Package Dimensions in millimeters (inches): SOD123

