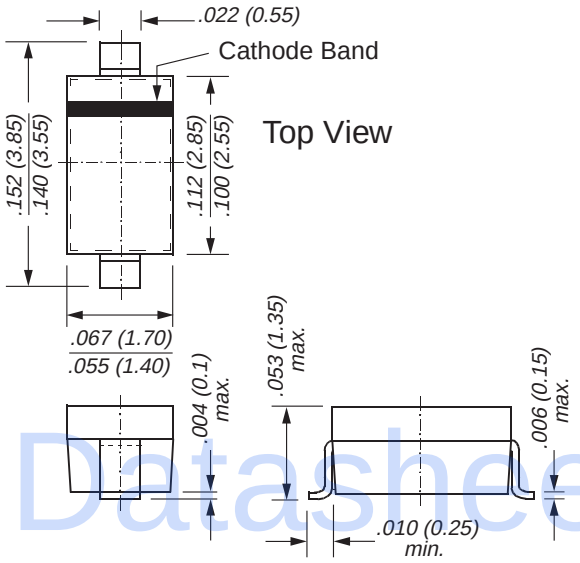
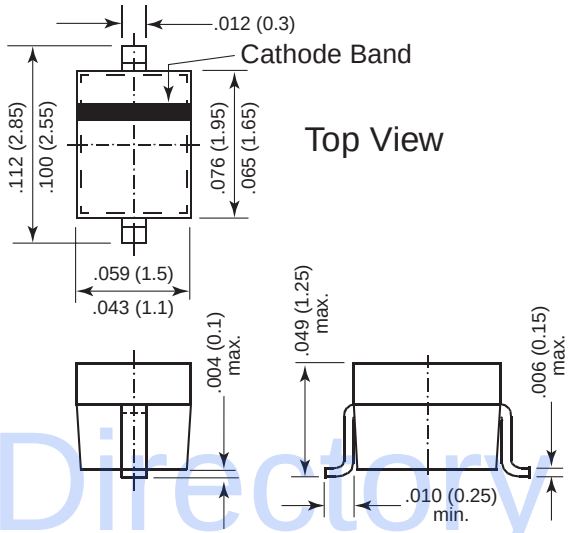
Small-Signal Diodes

Peak Reverse Voltage: 100V
Forward Current: 150mA

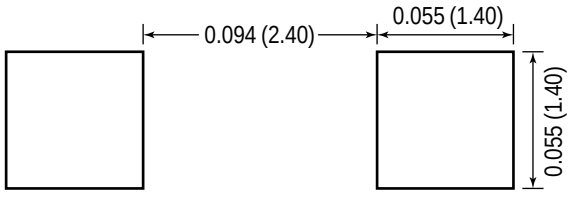
SOD-123 (1N4148W)



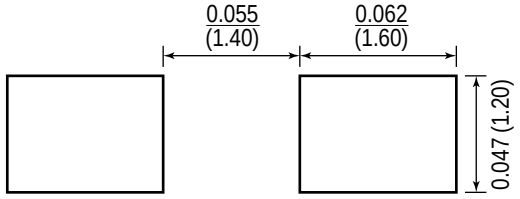
SOD-323 (1N4148WS)



Mounting Pad Layout (SOD-123)



Mounting Pad Layout (SOD-323)



Features

- Silicon Epitaxial Planar Diode
- Fast switching diodes
- 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.

Mechanical Data

Case: 1N4148W = SOD-123 Plastic Case
1N4148WS = SOD-323 Plastic Case

Weight: 1N4148W = approx. 0.01g
1N4148WS = approx. 0.004g

Marking Code: 1N4148W = A2
1N4148WS = A2

Packaging Codes/Options:
SOD-123: D3/10K per 13” reel (8mm tape), 30K/box
D4/3K per 7” reel (8mm tape), 30K/box
SOD-323: D5/10K per 13” reel (8mm tape), 30K/box
D6/3K per 7” reel (8mm tape), 30K/box

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

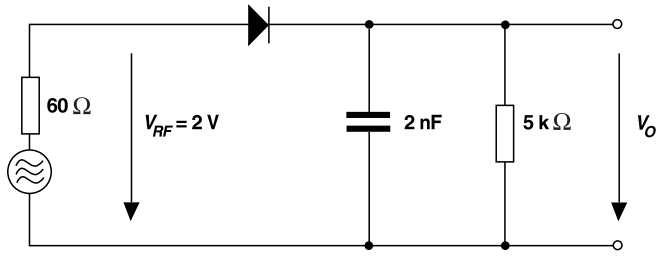
Parameter		Symbol	Limit	Unit
Reverse Voltage		V_R	75	V
Peak Reverse Voltage		V_{RM}	100	V
Average Rectified Current Half Wave Rectification with Resistive Load at T_{amb} = 25°C and f ≥ 50 Hz		$I_{F(AV)}$	150(1)	mA
Surge Forward Current at t < 1s and Tj = 25°C	1N4148W 1N4148WS	I_{FSM}	500 350	mA
Power Dissipation at T_{amb} = 25°C	1N4148W 1N4148WS	P_{tot}	400(1) 200(1)	mW
Thermal Resistance Junction to Ambient Air	1N4148W 1N4148WS	$R_{\Theta JA}$	450(1) 650(1)	°C/W
Junction Temperature		T_j	150	°C
Storage Temperature		T_S	–65 to +150	°C

Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Forward Voltage	V_F	I_F = 10mA	—	—	1.0	V
Leakage Current	I_R	V_R = 20V V_R = 75V V_R = 20V, T_J = 150°C	— — —	— — —	25 5.0 50	nA µA µA
Capacitance	C_{tot}	V_F = V_R = 0V	—	—	4	pF
Voltage Rise when Switching ON (tested with 50 mA Pulses)	V_{fr}	t_p = 0.1µs, Rise time < 30ns f_p = 5 to 100kHz	—	—	2.5	ns
Reverse Recovery Time	t_{rr}	I_F = 10mA, I_R = 1mA, V_R = 6V , R_L = 100Ω	—	—	4	ns
Rectification Efficiency	η_v	f = 100MHz, V_{RF} = 2V	0.45	—	—	—

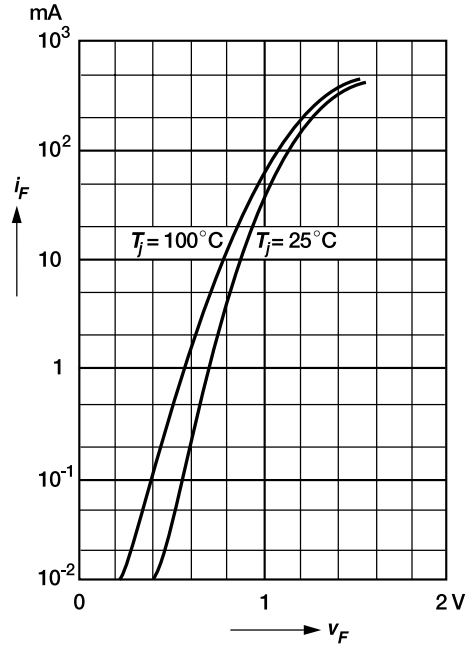
Note:
(1) Valid provided that electrodes are kept at ambient temperature.

Rectification Efficiency Measurement Circuit

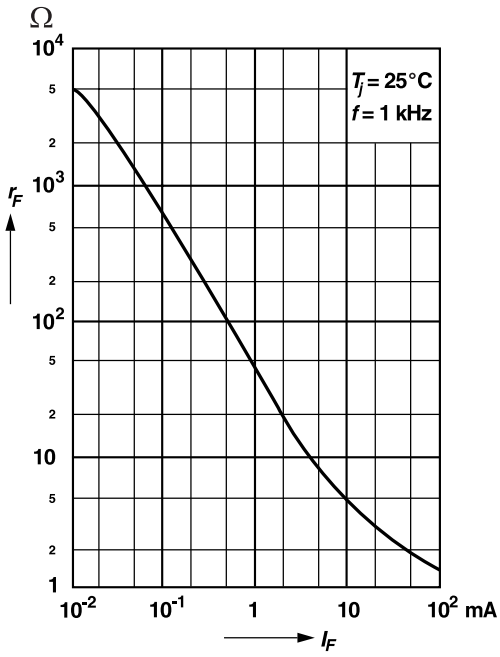


Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)

Forward characteristics

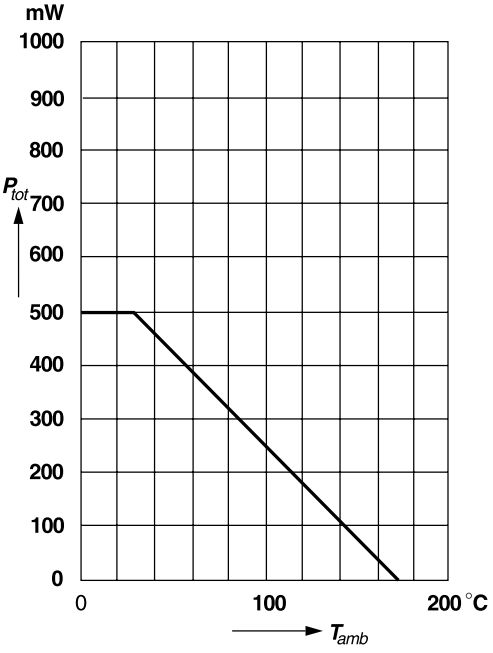


Dynamic forward resistance versus forward current

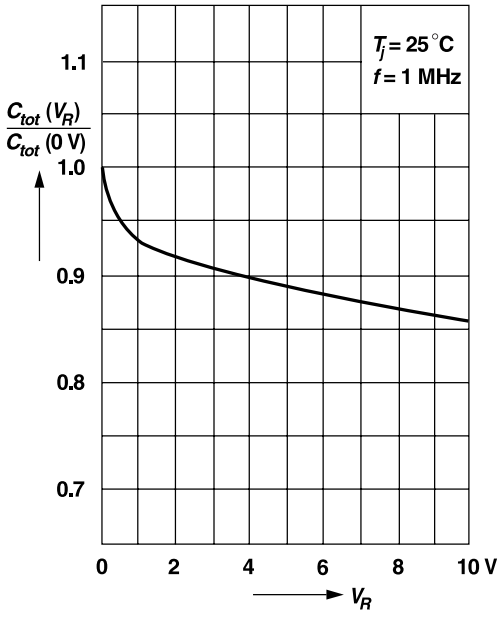


Admissible power dissipation versus ambient temperature

For conditions, see footnote in table "Absolute Maximum Ratings"

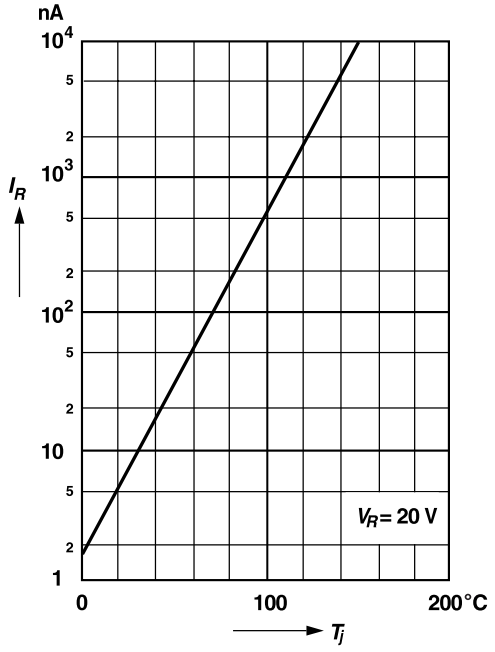


Relative capacitance versus reverse voltage



Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)

Leakage current versus junction temperature



Admissible repetitive peak forward current versus pulse duration

For conditions, see footnote in table "Absolute Maximum Ratings"