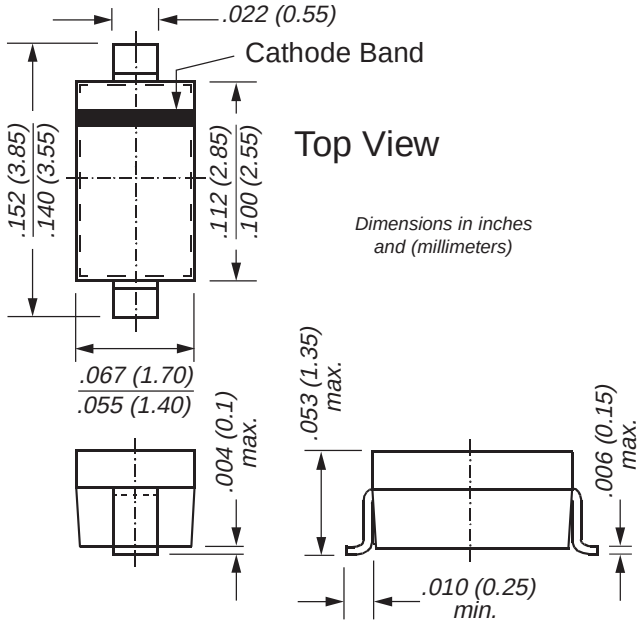
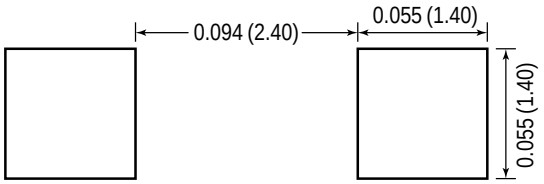
Vishay Semiconductors
formerly General Semiconductor

Small-Signal Diode

SOD-123



Mounting Pad Layout



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 1N4151, and the MiniMELF case with the type designation LL4151.

Mechanical Data

Case: SOD-123 Plastic Case

Weight: approx. 0.01g

Marking Code: A5

Packaging Codes/Options:

D3/10K per 13” reel (8mm tape), 30K/box

D4/3K 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	50	V
Peak Reverse Voltage	V_{RM}	75	V
Average Rectified Current Half Wave Rectification with Resistive Load at Tamb = 25°C and f ≥ 50Hz	$I_{F(AV)}$	150(1)	mA
Surge Forward Current at t < 1s and T_j = 25°C	I_{FSM}	500	mA
Power Dissipation at T_{amb} = 25°C	P_{tot}	410(1)	mW
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	450(1)	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_S	–65 to +150	°C

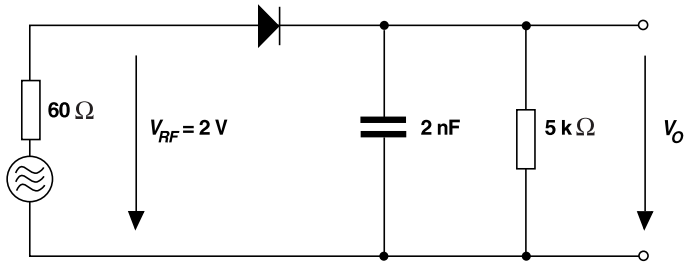
Note: (1) Valid provided that electrodes are kept at ambient temperature.

Electrical Characteristics

(T_J = 25°C unless otherwise noted)

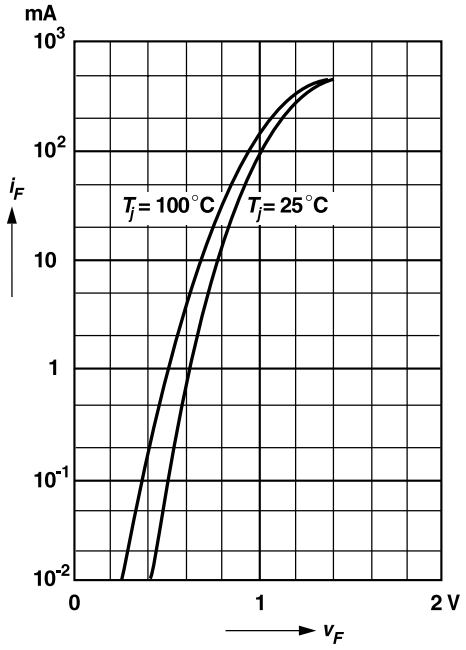
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Forward Voltage	V_F	I_F = 50 mA	—	—	1.0	V
Leakage Current	I_R	V_R = 50V V_R = 20V, T_j = 150 °C	— —	— —	50 50	nA µA
Reverse Breakdown Voltage	$V_{(BR)R}$	I_R = 5 µA (pulsed)	75	—	—	V
Capacitance	C_{tot}	V_F = V_R = 0V	—	—	2	pF
Reverse Recovery Time	t_{rr}	I_F = 10 mA to I_R = 10 mA to I_R = 1 mA I_F = 10 mA to I_R = 1 mA V_R = 6 V, R_L = 100 Ω	— —	— —	4 2	ns
Rectification Efficiency	η_v	f = 100 MHz, V_{RF} = 2V	0.45	—	—	—

Rectification Efficiency Measurement Circuit

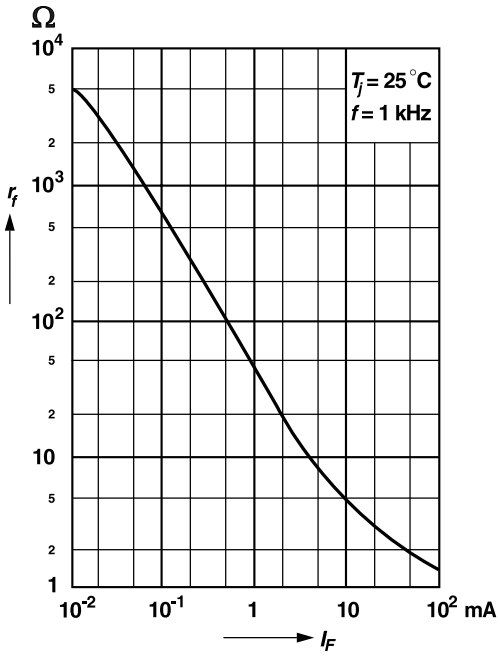


Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Forward characteristics

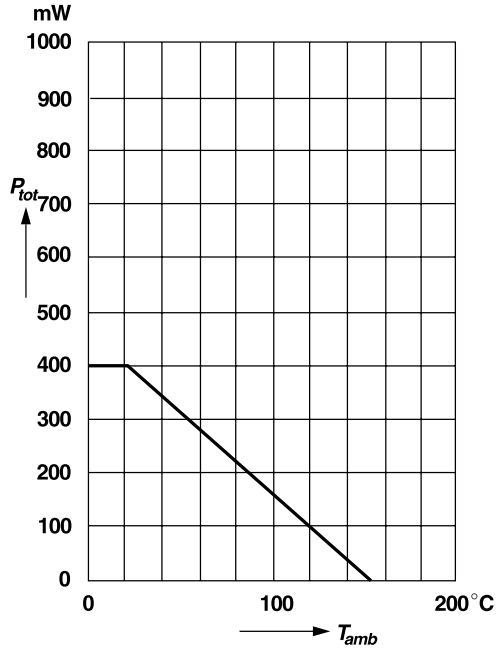


Dynamic forward resistance versus forward current

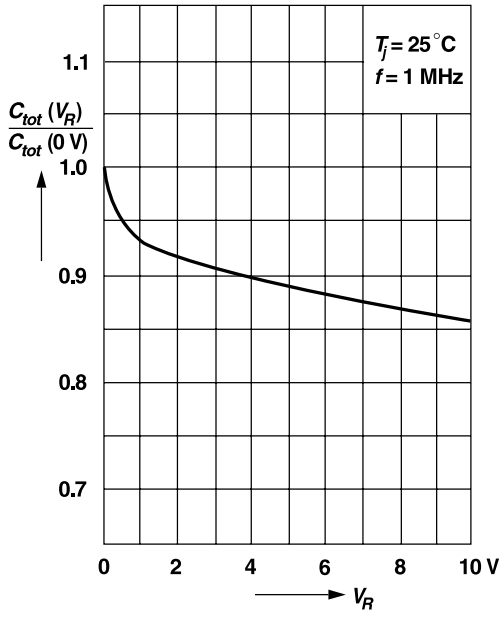


Admissible power dissipation versus ambient temperature

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

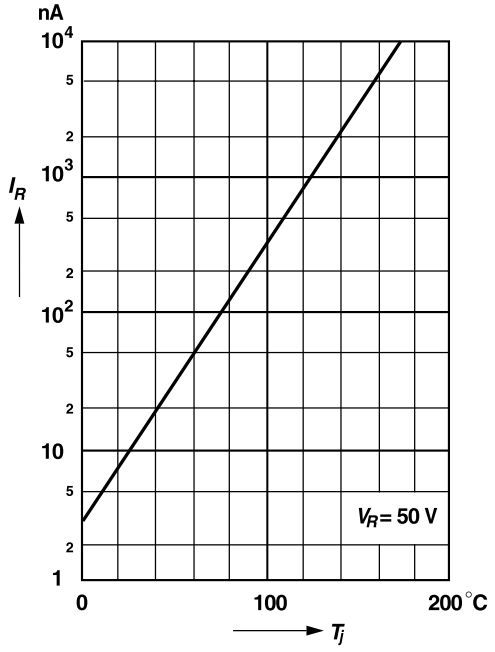


Relative capacitance versus reverse voltage



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"