Small Signal Schottky Diodes

Features

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

Applications

- HF-Detector
- Protection circuit
- Diode for low currents with a low supply voltage
- Small battery charger
- Power supplies
- DC / DC converter for notebooks

Mechanical Data

Case: DO35 Glass case
Weight: approx. 125 mg
Cathode Band Color: black
Packaging Codes/Options:
TR / 10 k per 13" reel (52 mm tape), 50 k/box
TAP / 10 k per Ammopack (52 mm tape), 50 k/box

Parts Table

Part	Type differentiation	Ordering code	Remarks
SD101A	V_R = 60 V, V_F at I_F = 1 mA max. 410 mV	SD101A-TAP or SD101A-TR	Ammopack / Tape and Reel
SD101B	V_R = 50 V, V_F at I_F = 1 mA max. 400 mV	SD101B-TAP or SD101B-TR	Ammopack / Tape and Reel
SD101C	V_R = 40 V, V_F at I_F = 1 mA max. 390 mV	SD101B-TAP or SD101B-TR	Ammopack / Tape and Reel

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
Reverse voltage		SD101A	V_R	60	V
		SD101B	V_R	50	V
		SD101C	V_R	40	V
Forward continuous current			I_F	30	mA
Peak forward surge current	t_p = 10 µs		I_{FSM}	2	A
Repetitive peak forward current			I_{FRM}	150	mA
Power dissipation			P_{tot}	310[1)]	mW

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

Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction temperature		T_j	125	°C
Storage temperature range		T_{stg}	- 65 to + 150	°C
Junction to ambient air		R_{thJA}	320[1)]	K/W

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

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Reverse Breakdown Voltage	I_R = 10 µA	SD101A	$V_{(BR)R}$	60			V
		SD101B	$V_{(BR)R}$	50			V
		SD101C	$V_{(BR)R}$	40			V
Leakage current	V_R = 50 V	SD101A	I_R			200	nA
	V_R = 40 V	SD101B	I_R			200	nA
	V_R = 30 V	SD101C	I_R			200	nA
Forward voltage drop	I_F = 1 mA	SD101A	V_F			410	mV
		SD101B	V_F			400	mV
		SD101C	V_F			390	mV
	I_F = 15 mA	SD101A	V_F			1000	mV
		SD101B	V_F			950	mV
		SD101C	V_F			900	mV
Diode capacitance	V_R = 0 V, f = 1 MHz	SD101A	C_D			2.0	pF
		SD101B	C_D			2.1	pF
	V_R = 0 V, f = 1 MHz	SD101C	C_D			2.2	pF

Typical Characteristics

T_{amb} = 25 °C, unless otherwise specified

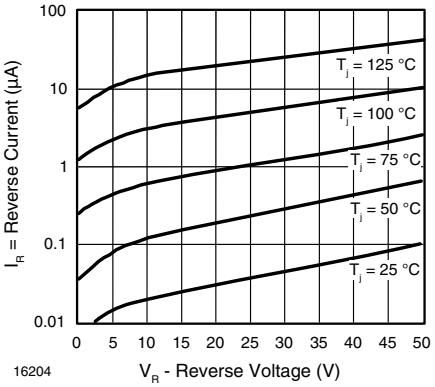


Figure 1. Reverse Current vs. Reverse Voltage

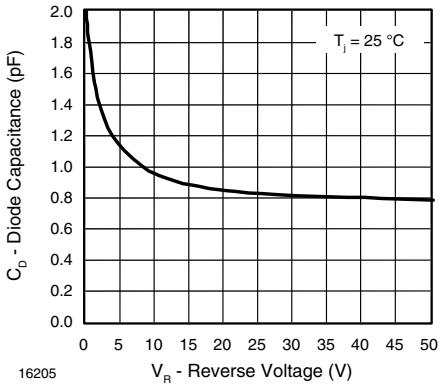


Figure 2. Diode Capacitance vs. Reverse Voltage

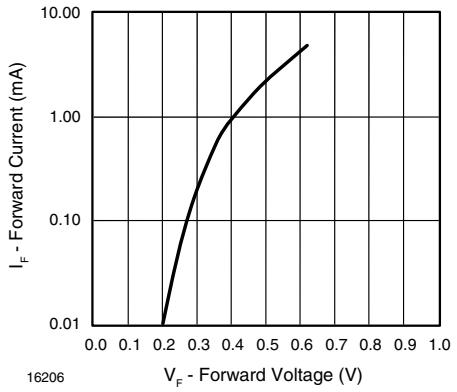
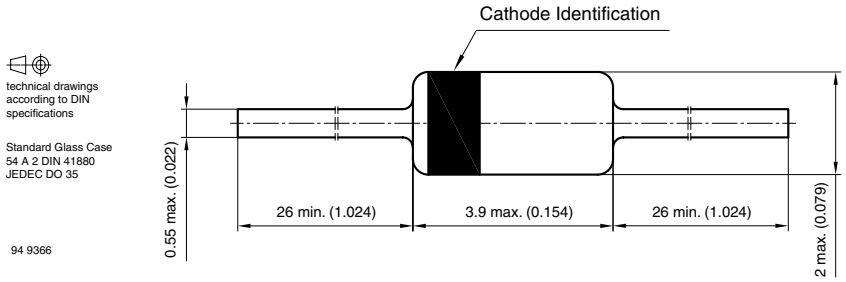


Figure 3. Forward Current vs. Forward Voltage

Package Dimensions in mm (Inches)



Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany

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