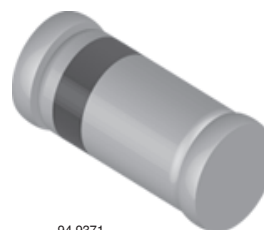


Small Signal Schottky Diode

Features

- For general purpose applications
- This diode features low turn-on voltage. The devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges.
- Metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring.
- The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing and coupling diodes for fast switching and low logic level applications
- This diode is also available in a DO35 case with type designation BAT86.
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



94 9371

Mechanical Data

Case: MiniMELF Glass case SOD80

Weight: approx. 31 mg

Packaging Codes/Options:

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

GS08 / 2.5 k per 7" reel (8 mm tape), 12.5 k/box

Applications

- Applications where a very low forward voltage is required

Parts Table

Part	Ordering code	Marking	Remarks
BAS86	BAS86-GS18 or BAS86-GS08		Tape and Reel

Absolute Maximum Ratings

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

Parameter	Test condition	Symbol	Value	Unit
Continuous reverse voltage		V_R	50	V
Forward continuous current	$T_{amb} = 25\text{ }^{\circ}\text{C}$	I_F	200 ¹⁾	mA
Repetitive peak forward current	$t_p < 1\text{ s}$, $T_{amb} = 25\text{ }^{\circ}\text{C}$, $v \leq 0.5$	I_{FRM}	500 ¹⁾	mA
Power dissipation ¹⁾	$T_{amb} = 25\text{ }^{\circ}\text{C}$	P_{tot}	200 ¹⁾	mW

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}	300 ¹⁾	K/W
Junction temperature		T_j	125	$^{\circ}\text{C}$
Ambient operating temperature range		T_{amb}	- 65 to + 125	$^{\circ}\text{C}$
Storage temperature range		T_S	- 65 to +150	$^{\circ}\text{C}$

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
Reverse breakdown voltage	$I_R = 10\text{ }\mu\text{A}$ (pulsed)	$V_{(BR)}$	50			V
Leakage current	$V_R = 40\text{ V}$	I_R			5	μA
Forward voltage	Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 0.1\text{ mA}$, $\delta < 2\%$	V_F		200	300	mV
	Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 1\text{ mA}$, $\delta < 2\%$	V_F		275	380	mV
	Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 10\text{ mA}$, $\delta < 2\%$	V_F		365	450	mV
	Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 30\text{ mA}$, $\delta < 2\%$	V_F		460	600	mV
	Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 100\text{ mA}$, $\delta < 2\%$	V_F		700	900	mV
Diode capacitance	$V_R = 1\text{ V}$, $f = 1\text{ MHz}$	C_{tot}			8	pF
Reverse recovery time	$I_F = 10\text{ mA}$, $I_R = 10\text{ mA}$, $I_{rr} = 1\text{ mA}$	t_{rr}			5	ns

Typical Characteristics

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

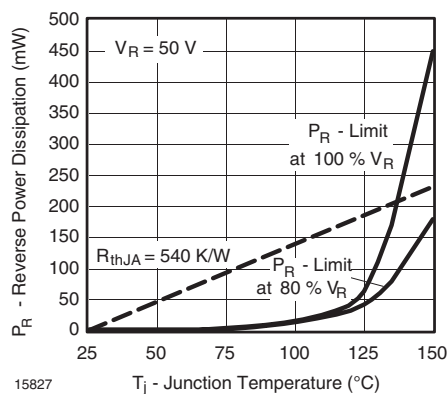


Figure 1. Max. Reverse Power Dissipation vs. Junction Temperature

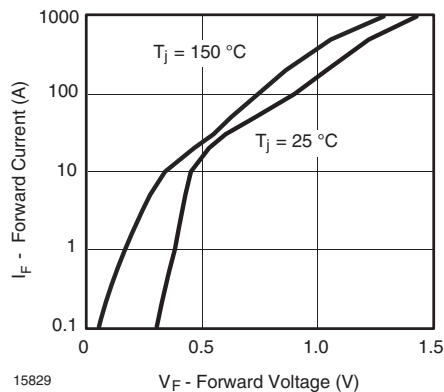


Figure 3. Forward Current vs. Forward Voltage

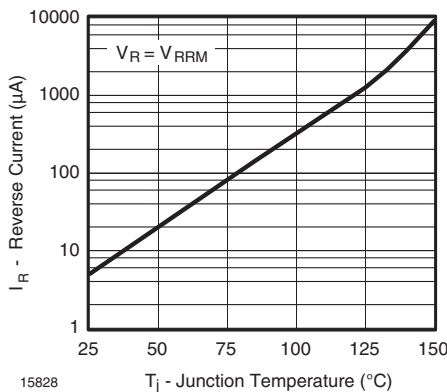


Figure 2. Reverse Current vs. Junction Temperature

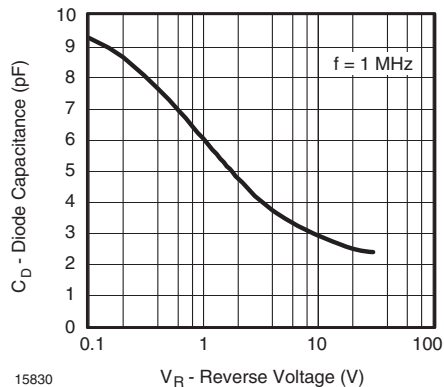
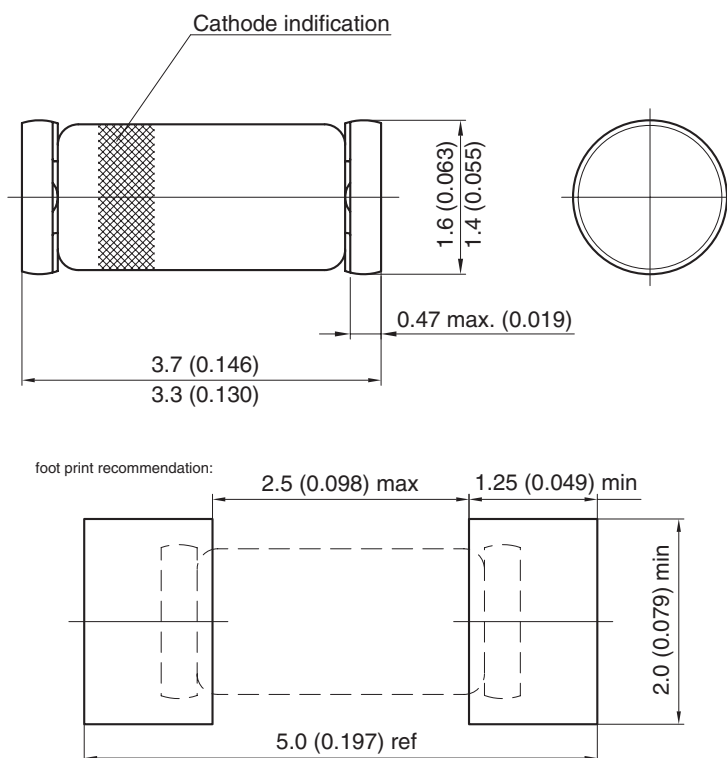


Figure 4. Diode Capacitance vs. Reverse Voltage

Package Dimensions in mm (Inches)



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 96 12070

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.

We reserve the right to make changes to improve technical design
and may do so without further notice.

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