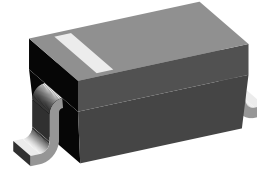


Small Surface Mount Schottky Rectifier

Features

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Low power loss, high efficiency
- High temperature soldering:
250 °C/10 seconds at terminals



17431

Mechanical Data

Case: SOD-123 plastic case

Polarity: Band denotes cathode end

Weight: approx. 9.3 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
MBR0540	MBR0540-GS18 or MBR0540-GS08	B4	Tape and Reel

Absolute Maximum Ratings

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

Parameter	Test condition	Symbol	Value	Unit
Maximum repetitive peak reverse voltage		V _{RRM}	40	V
Working peak reverse voltage		V _{RWM}	40	V
Maximum DC blocking voltage		V _R	40	V
Max. average forward rectified current at rated V _R	V _C = 115 °C	I _{FAV}	0.5	A
Peak repetitive forward current at rated V _R	20 kHz square wave, T _C = 115 °C	I _{FRM}	1.0	A
Peak forward surge current	8.3 ms single half sine-wave T _L = 25 °C	I _{FSM}	5.5	A
Voltage rate of change at rated V _R	T _j = 25 °C	dv/dt	1,000	V/μs

Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Typical thermal resistance junction to lead		R_{thJL}	118	$^{\circ}\text{C}/\text{W}$
Typical thermal resistance junction to ambient		R_{thJA}	206	$^{\circ}\text{C}/\text{W}$
Operating junction and storage temperature		T_j, T_{stg}	- 55 to + 150	$^{\circ}\text{C}$

Electrical Characteristics

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

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Maximum instantaneous forward voltage ¹⁾	$I_F = 0.5\text{ A}, T_j = 25\text{ }^{\circ}\text{C}$	V_F			0.51	V
	$I_F = 0.5\text{ A}, T_j = 100\text{ }^{\circ}\text{C}$	V_F			0.46	V
	$I_F = 1.0\text{ A}, T_j = 25\text{ }^{\circ}\text{C}$	V_F			0.62	V
	$I_F = 1.0\text{ A}, T_j = 100\text{ }^{\circ}\text{C}$	V_F			0.61	V
Maximum DC reverse current	$V_R = 40\text{ V}, T_j = 25\text{ }^{\circ}\text{C}$	I_R			20	μA
	$V_R = 40\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	I_R			5.0	mA
	$V_R = 20\text{ V}, T_j = 25\text{ }^{\circ}\text{C}$	I_R			10	μA

¹⁾ Pulse test: 300 ms pulse width, 1 % duty cycle

Typical Characteristics ($T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

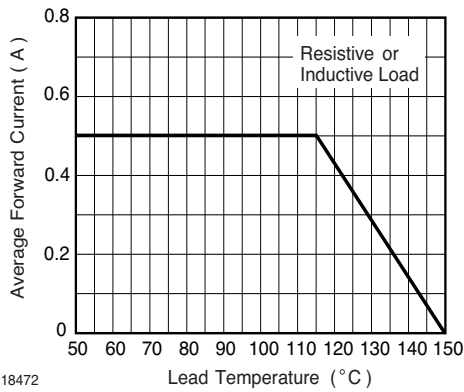


Fig. 1 Derating Curve Output Rectified Current

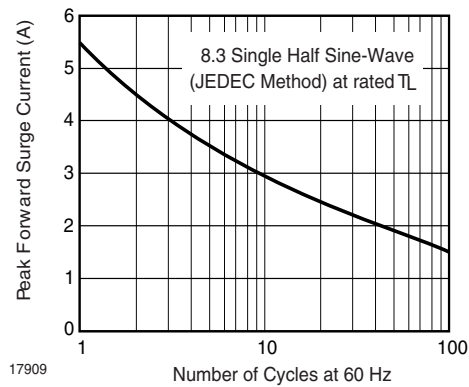


Fig. 2 Maximum Non-Repetitive Peak Forward Surge Current

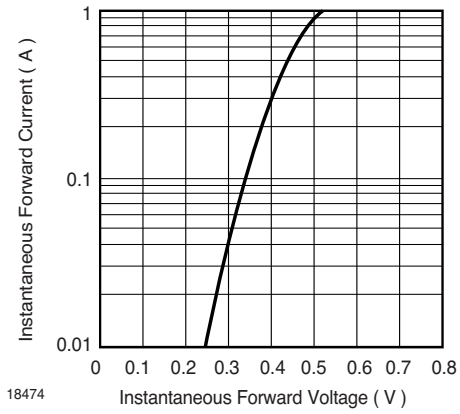


Fig. 3 Typical Instantaneous Forward Characteristics

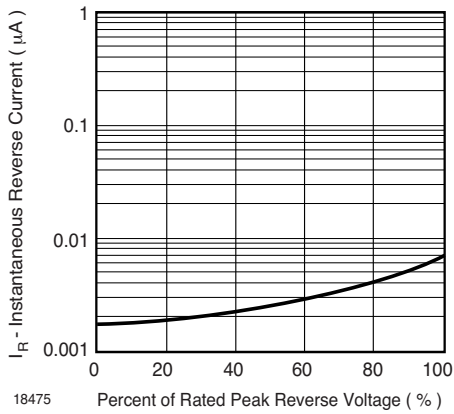


Fig. 4 Typical Reverse Characteristics

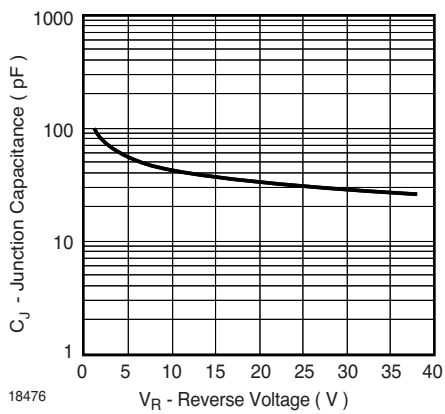
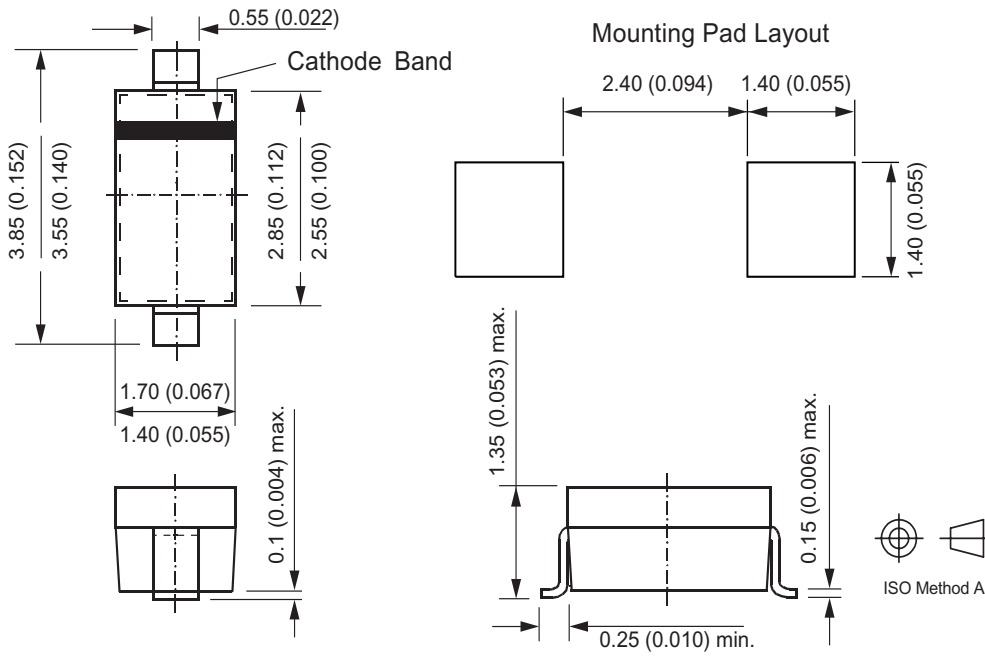


Fig. 5 Typical Junction Capacitance

Package Dimensions in mm (Inches)



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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.**

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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