

Vishay Semiconductors

Small Signal Switching Diodes, Low Leakage Current

Features

- Silicon Planar Diodes
- · Saving space
- · Hermetic sealed parts
- Fits onto SOD323 / SOT23 footprints
- · Electrical data identical with the devices BAQ33...BAQ35 / BAQ133...BAQ135
- · Very low reverse current
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



• Protection circuits, time delay circuits, peak follower circuits, logarithmic amplifiers





Mechanical Data

Case: MicroMELF Glass case Weight: approx. 12 mg Cathode Band Color: Black **Packaging Codes/Options:**

TR3 / 10 k per 13" reel (8 mm tape), 10 k/box TR / 2.5 k per 7" reel (8 mm tape), 12.5 k/box

Parts Table

Part	Type differentiation	Ordering code	Remarks
BAQ333	V _{RRM} = 40 V	BAQ333-TR3 or BAQ333-TR	Tape and Reel
BAQ334	V _{RRM} = 70 V	BAQ334-TR3 or BAQ334-TR	Tape and Reel
BAQ335	V _{RRM} = 140 V	BAQ335-TR3 or BAQ335-TR	Tape and Reel

Absolute Maximum Ratings

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

Tamb — S, american speciment					
Parameter	Test condition	Part	Symbol	Value	Unit
Reverse voltage		BAQ333	V _R	30	V
		BAQ334	V _R	60	V
		BAQ335	V _R	125	V
Peak forward surge current	t _p = 1 μs		I _{FSM}	2	Α
Forward continuous current			I _F	200	mA

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Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air	mounted on epoxy-glass hard tissue, Fig. 1	R_{thJA}	500	K/W
	35 μm copper clad, 0.9 mm ² copper area per electrode	R _{thJA}	500	K/W
Junction temperature		Tj	175	°C
Storage temperature range		T _{stg}	- 65 to + 175	°C

Electrical Characteristics

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

Parameter	Test condition	Part	Symbol	Min	Тур.	Max	Unit
Forward voltage	I _F = 100 mA		V _F			1000	mV
Reverse current	$E \le 300 \text{ lx}, \text{ rated } V_R$		I _R		1	3	nA
	$E \le 300 \text{ lx}, \text{ rated } V_R, T_j = 125 ^{\circ}\text{C}$		I _R			0.5	μΑ
	E ≤ 300 lx, V _R = 15 V	BAQ333	I _R		0.5	1	nA
	$E \le 300 \text{ lx}, \ V_R = 30 \text{ V}$	BAQ334	I _R		0.5	1	nA
	E ≤ 300 lx, V _R = 60 V	BAQ335	I _R		0.5	1	nA
Breakdown voltage	$I_R = 5 \mu A, t_p/T = 0.01, t_p = 0.3 \text{ ms}$	BAQ333	V _(BR)	40			V
		BAQ334	V _(BR)	70			V
		BAQ335	V _(BR)	140			V
Diode capacitance	V _R = 0, f = 1 MHz		C _D			3	pF

Typical Characteristics

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

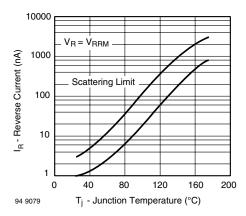


Figure 1. Reverse Current vs. Junction Temperature

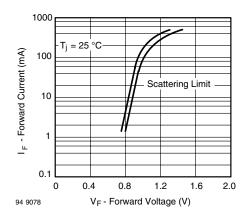


Figure 2. Forward Current vs. Forward Voltage

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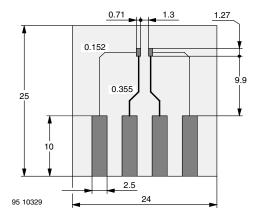
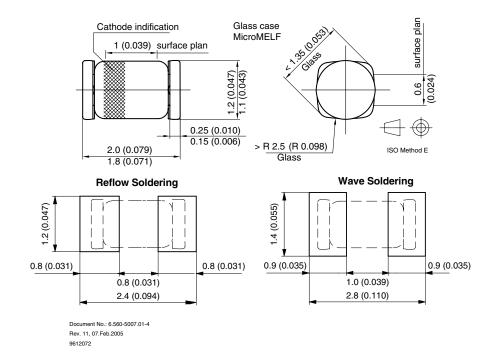


Figure 3. Board for R_{thJA} definition (in mm)

Package Dimensions in mm (Inches)



BAQ333 / 334 / 335

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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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