BAT81S/82S/83S Vishay Semiconductors

Small Signal Schottky Diodes

Features

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

Applications

- · General purpose and switching Schottky barrier diode
- HF-Detector
- Protection circuit
- · Diode for low currents with a low supply voltage
- Small battery charger
- · Power supplies
- DC/DC converter for notebooks

Parts Table

Part	Type differentiation	Ordering code	Type Marking	Remarks
BAT81S	V _R = 40 V	BAT81S-TR or BAT81S-TAP	BAT81S	Tape and Reel/Ammopack
BAT82S	V _R = 50 V	BAT82S-TR or BAT82S-TAP	BAT82S	Tape and Reel/Ammopack
BAT83S	V _R = 60 V	BAT83S-TR or BAT83S-TAP	BAT83S	Tape and Reel/Ammopack

Absolute Maximum Ratings

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

Parameter	Test condition	Part	Symbol	Value	Unit
Reverse voltage		BAT81S	V _R	40	V
		BAT82S	V _R	50	V
		BAT83S	V _R	60	V
Forward continuous current			١ _F	30	mA
$Peak \ forward \ surge \ current \qquad t_p \leq 10 \ ms$			I _{FSM}	500	mA
Repetitive peak forward current	$t_p \le 1 s$		I _{FRM}	150	mA







Cathode Band Color: black

Mechanical Data

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

Case: DO35 Glass case Weight: approx. 125 mg

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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	$I = 4 \text{ mm}, T_L = \text{constant}$	R _{thJA}	320	K/W
Junction temperature		Tj	125	°C
Storage temperature range		T _{stg}	- 65 to + 150	°C

Electrical Characteristics

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

Parameter	Test condition	Symbol	Min	Тур.	Max	Unit
Forward voltage	I _F = 0.1 mA	V _F			330	mV
	I _F = 1 mA	V _F			410	mV
	I _F = 15 mA	V _F			1000	mV
Reverse current	V _R = V _{Rmax}	I _R			200	nA
Diode capacitance	V _R = 1 V, f = 1 MHz	CD			1.6	pF

Typical Characteristics

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

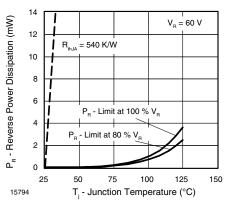


Figure 1. Max. Reverse Power Dissipation vs. Junction Temperature

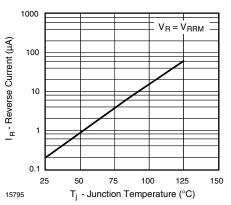


Figure 2. Reverse Current vs. Junction Temperature

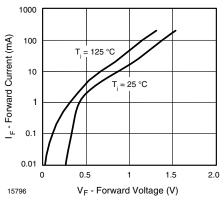


Figure 3. Forward Current vs. Forward Voltage

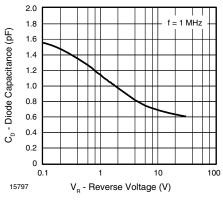


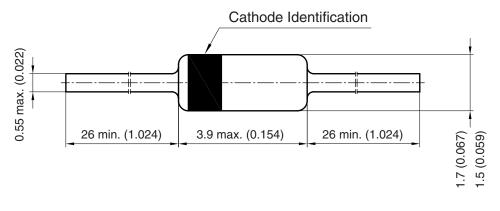
Figure 4. Diode Capacitance vs. Reverse Voltage





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Package Dimensions in millimeters (inches): DO35



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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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