



# **Small Signal Schottky Diode**

#### **Features**

- Integrated protection ring against static discharge
- Very low forward voltage
- · AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition





COMPLIANT HALOGEN FREE



### **Applications**

Applications where a very low forward voltage is required

#### **Mechanical Data**

Case: DO-35

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	Ordering code	Type Marking	Remarks	
BAT86S	BAT86S-TR or BAT86S-TAP	BAT86S	Tape and Reel/Ammopack	

#### **Absolute Maximum Ratings**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Reverse voltage		$V_R$	50	V
Peak forward surge current $t_p \le 10 \text{ ms}$		I <sub>FSM</sub>	5	A
Repetitive peak forward current	t <sub>p</sub> ≤1 s	I <sub>FRM</sub>	500	mA
Forward continuous current		I <sub>F</sub>	200	mA
Average forward current	PCB mounting, I = 4 mm; $V_{RWM}$ = 25 V, $T_{amb}$ = 50 °C	I <sub>FAV</sub>	200	mA

## **Vishay Semiconductors**



#### **Thermal Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air	$I = 4$ mm, $T_L = constant$	R <sub>thJA</sub>	320	K/W
Junction temperature		T <sub>j</sub>	125	°C
Storage temperature range		T <sub>stg</sub>	- 65 to + 150	°C

#### **Electrical Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Тур.	Max.	Unit
	I <sub>F</sub> = 0.1 mA	V <sub>F</sub>			300	mV
	I <sub>F</sub> = 1 mA	V <sub>F</sub>			380	mV
Forward voltage	I <sub>F</sub> = 10 mA	V <sub>F</sub>			450	mV
	I <sub>F</sub> = 30 mA	V <sub>F</sub>			600	mV
	I <sub>F</sub> = 100 mA	V <sub>F</sub>			900	mV
Reverse current	V <sub>R</sub> = 40 V	I <sub>R</sub>			5	μΑ
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz	C <sub>D</sub>			8	pF

### **Typical Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

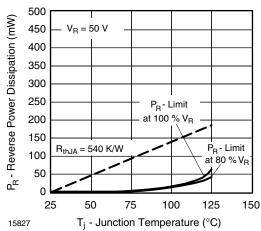


Figure 1. Max. Reverse Power Dissipation vs.
Junction Temperature

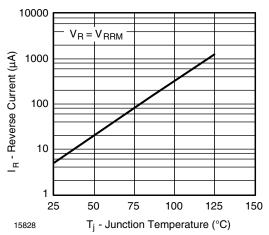


Figure 2. Reverse Current vs. Junction Temperature





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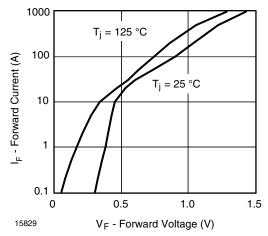


Figure 3. Forward Current vs. Forward Voltage

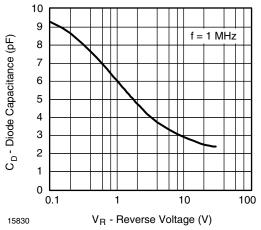
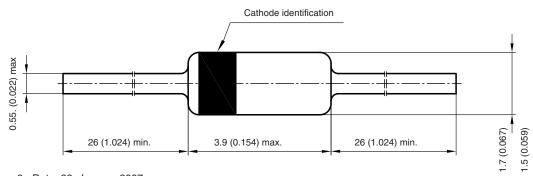


Figure 4. Diode Capacitance vs. Reverse Voltage

### Package Dimensions in millimeters (inches): DO-35



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