

# Vishay Semiconductors

# **Small Signal Schottky Diode**



### **FEATURES**

- Integrated protection ring against static discharge
- Very low forward voltage
- AEC-Q101 qualified
- Material categorization:
   For definitions of compliance please see www.vishay.com/doc?99912



RoHS

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/10K per 13" reel (52 mm tape), 50K/box TAP/10K per ammopack (52 mm tape), 50K/box

PARTS TABLE						
PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS		
BAT85S	BAT85S-TR or BAT85S-TAP	Single diode	BAT85S	Tape and reel/ammopack		

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Reverse voltage		$V_R$	30	V	
Peak forward surge current	t <sub>p</sub> ≤ 10 ms	I <sub>FSM</sub>	5	А	
Repetitive peak forward current	t <sub>p</sub> < 1 s	I <sub>FRM</sub>	300	mA	
Forward continuous current		I <sub>F</sub>	200	mA	
Average forward current	PCB mounting, I = 4 mm; V <sub>RWM</sub> = 25 V, T <sub>amb</sub> = 50 °C	I <sub>FAV</sub>	200	mA	

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 <sub>L</sub> = constant	R <sub>thJA</sub>	350	K/W		
Junction temperature		T <sub>j</sub>	125	°C		
Storage temperature range		T <sub>stq</sub>	- 65 to + 150	°C		

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
	I <sub>F</sub> = 0.1 mA	$V_{F}$			240	mV
	I <sub>F</sub> = 1 mA	$V_{F}$			320	mV
Forward voltage	I <sub>F</sub> = 10 mA	$V_{F}$			400	mV
	$I_F = 30 \text{ mA}$	$V_{F}$			500	mV
	$I_{F} = 100 \text{ mA}$	V <sub>F</sub>			800	mV
Reserve current	V <sub>R</sub> = 25 V	I <sub>R</sub>			2	μA
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz	$C_D$			10	pF
Reserve recovery time	$I_F = 10 \text{ mA to } I_R = 10 \text{ mA to } i_R = 1 \text{ mA}$	t <sub>rr</sub>			5	ns

### TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

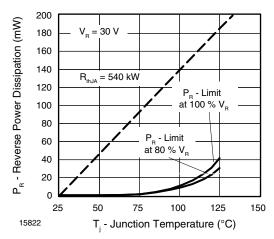


Fig. 1 - Maximum Reverse Power Dissipation vs. Junction Temperature

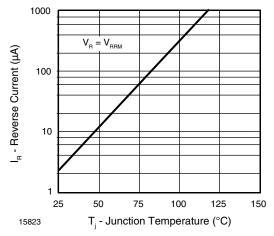


Fig. 2 - Reverse Current vs. Junction Temperature

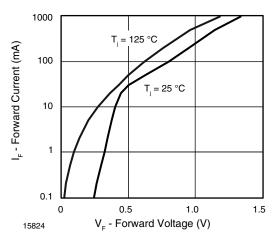


Fig. 3 - Forward Current vs. Forward Voltage

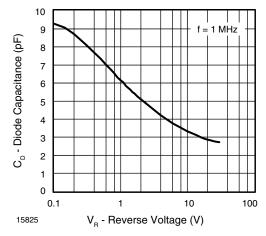
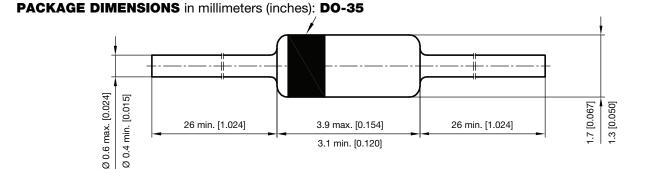


Fig. 4 - Diode Capacitance vs. Reverse Voltage



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