

## Vishay Semiconductors

# **Small Signal Schottky Diode**



#### **FEATURES**

- Integrated protection ring against static discharge
- · Low capacitance
- Low leakage current
- · Low forward voltage drop
- Very low switching time
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912





ROHS COMPLIANT HALOGEN FREE

#### **LINKS TO ADDITIONAL RESOURCES**



#### **MECHANICAL DATA**

Case: DO-35 (DO-204AH)
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

### **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	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS		
BAT81S	V <sub>R</sub> = 40 V	BAT81S-TR or BAT81S-TAP	Single	BAT81S	Tape and reel/ammopack		
BAT82S	$V_{R} = 50 \text{ V}$	BAT82S-TR or BAT82S-TAP	Single	BAT82S	Tape and reel/ammopack		
BAT83S	V <sub>R</sub> = 60 V	BAT83S-TR or BAT83S-TAP	Single	BAT83S	Tape and reel/ammopack		

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
		BAT81S	V <sub>R</sub>	40	V	
Reverse voltage		BAT82S	$V_R$	50	V	
		BAT83S	V <sub>R</sub>	60	V	
Forward continuous current			I <sub>F</sub>	30	mA	
Peak forward surge current	t <sub>p</sub> ≤ 10 ms		I <sub>FSM</sub>	500	mA	
Repetitive peak forward current	t <sub>p</sub> ≤ 1 s		I <sub>FRM</sub>	150	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>	320	K/W		
Junction temperature		T <sub>j</sub>	125	°C		
Storage temperature range		T <sub>stg</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 <sub>F</sub>			330	mV
Forward voltage	I <sub>F</sub> = 1 mA	V <sub>F</sub>			410	mV
	I <sub>F</sub> = 15 mA	V <sub>F</sub>			1000	mV
Reverse current	$V_R = V_{Rmax}$ .	I <sub>R</sub>			200	nA
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz	C <sub>D</sub>			1.6	pF

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

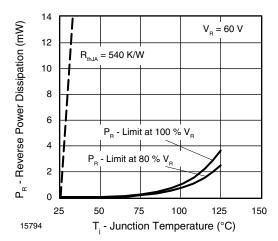


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

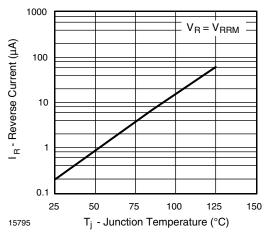


Fig. 2 - Reverse Current vs. Junction Temperature

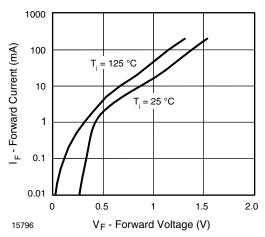


Fig. 3 - Forward Current vs. Forward Voltage

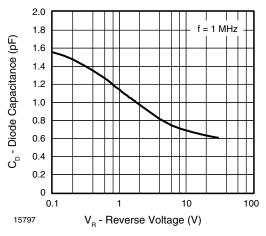
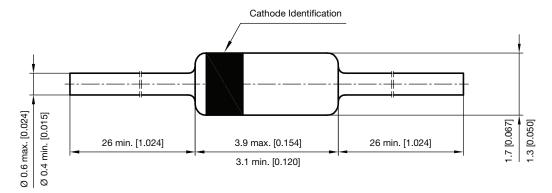


Fig. 4 - Diode Capacitance vs. Reverse Voltage

#### PACKAGE DIMENSIONS in millimeters (inches): DO-35 (DO-204AH)



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