



## Small Signal Schottky Diode



### FEATURES

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop
- Very low switching time
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### 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 ammpack (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	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
BAT81S	$V_R = 40\text{ V}$	BAT81S-TR or BAT81S-TAP	Single diode	BAT81S	Tape and reel/ammpack
BAT82S	$V_R = 50\text{ V}$	BAT82S-TR or BAT82S-TAP	Single diode	BAT82S	Tape and reel/ammpack
BAT83S	$V_R = 60\text{ V}$	BAT83S-TR or BAT83S-TAP	Single diode	BAT83S	Tape and reel/ammpack

ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , 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			$I_F$	30	mA
Peak forward surge current	$t_p \leq 10\text{ ms}$		$I_{FSM}$	500	mA
Repetitive peak forward current	$t_p \leq 1\text{ s}$		$I_{FRM}$	150	mA

THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	$l = 4\text{ mm}$ , $T_L = \text{constant}$	$R_{thJA}$	320	K/W
Junction temperature		$T_j$	125	$^\circ\text{C}$
Storage temperature range		$T_{stg}$	- 65 to + 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 0.1\text{ mA}$	$V_F$			330	mV
	$I_F = 1\text{ mA}$	$V_F$			410	mV
	$I_F = 15\text{ mA}$	$V_F$			1000	mV
Reverse current	$V_R = V_{Rmax.}$	$I_R$			200	nA
Diode capacitance	$V_R = 1\text{ V}$ , $f = 1\text{ MHz}$	$C_D$			1.6	pF

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

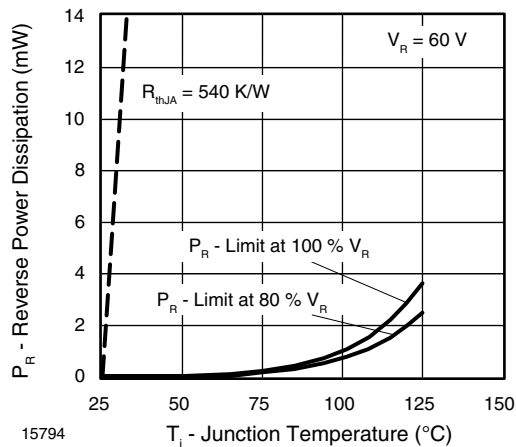


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

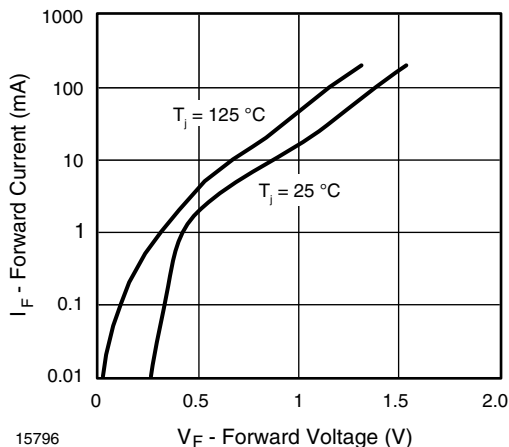


Fig. 3 - Forward Current vs. Forward Voltage

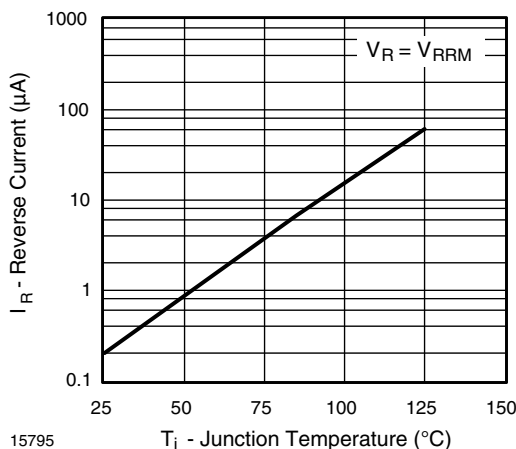


Fig. 2 - Reverse Current vs. Junction Temperature

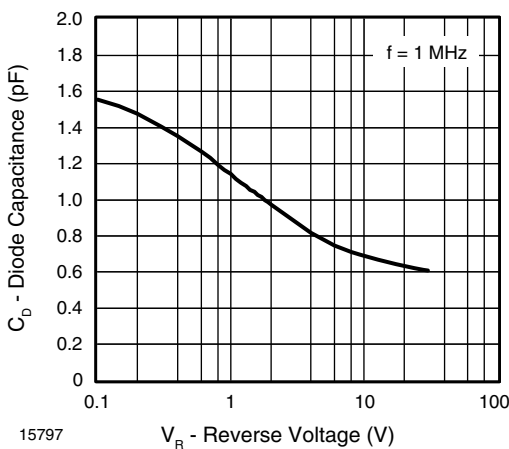
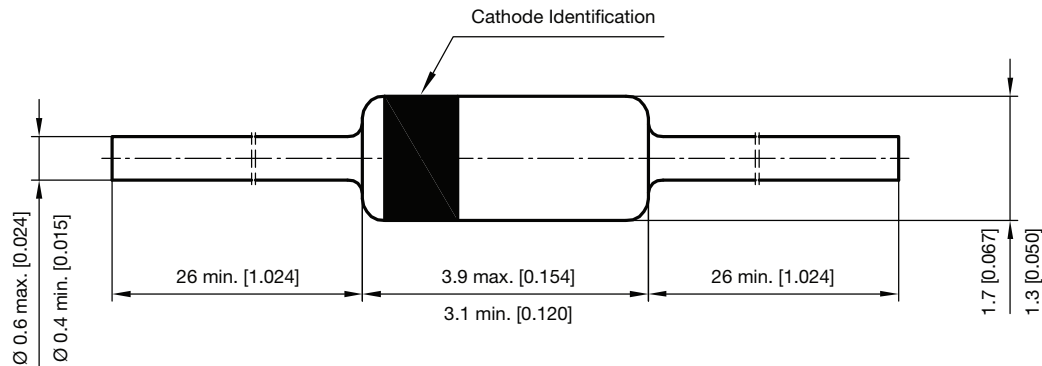


Fig. 4 - Diode Capacitance vs. Reverse Voltage

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



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