

Small Signal Schottky Diode



FEATURES

- For general purpose applications
- This diode features very low turn-on voltage and fast switching. This device is protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- This diode is also available in the SOD-123 case with type designation BAT46W-V and in the MiniMELF case with type designations LL46
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

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

PARTS TABLE

PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
BAT46	BAT46-TR or BAT46-TAP	Single diode	BAT46	Tape and reel/ammpack

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		V_{RRM}	100	V
Forward continuous current ⁽¹⁾		I_F	150	mA
Repetitive peak forward current ⁽¹⁾	$t_p < 1\text{ s}, \delta < 0.5$	I_{FRM}	350	mA
Surge forward current ⁽¹⁾	$t_p < 10\text{ ms}$	I_{FSM}	750	mA
Power dissipation ⁽¹⁾	$T_{amb} = 80^{\circ}\text{C}$	P_{tot}	150	mW

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

THERMAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	Valid provided that electrodes are kept at ambient temperature	R_{thJA}	300	K/W
Junction temperature		T_j	125	$^{\circ}\text{C}$
Ambient operating temperature range		T_{amb}	- 65 to + 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
Reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$ (pulsed)	$V_{(BR)}$	100			V
Leakage current ⁽¹⁾	$V_R = 1.5\text{ V}$	I_R			0.5	μA
	$V_R = 1.5\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	I_R			5	μA
	$V_R = 10\text{ V}$	I_R			0.8	μA
	$V_R = 10\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	I_R			7.5	μA
	$V_R = 50\text{ V}$	I_R			2	μA
	$V_R = 50\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	I_R			15	μA
	$V_R = 75\text{ V}$	I_R			5	μA
Forward voltage ⁽¹⁾	$I_F = 0.1\text{ mA}$	V_F			250	mV
	$I_F = 10\text{ mA}$	V_F			450	mV
	$I_F = 250\text{ mA}$	V_F			1000	mV
Diode capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}$	C_D		10		pF
	$V_R = 1\text{ V}, f = 1\text{ MHz}$	C_D		6		pF

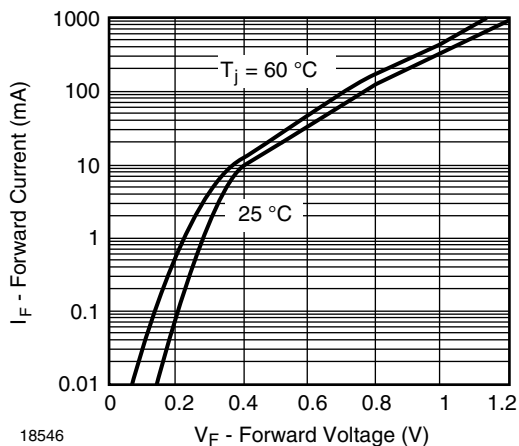
Note
⁽¹⁾ Pulse test; $t_p \leq 300\text{ }\mu\text{s}$, $\delta < 2\%$
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Typical Instantaneous Forward Characteristics

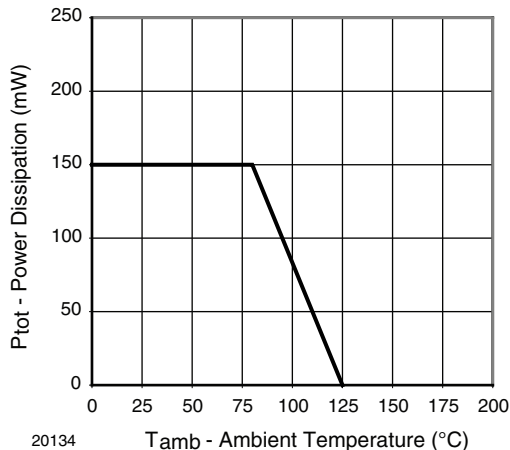


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

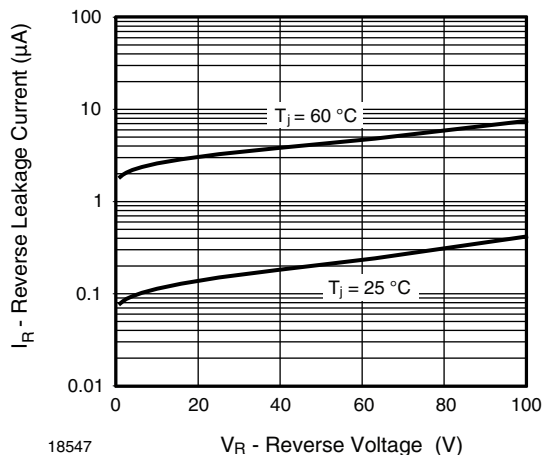
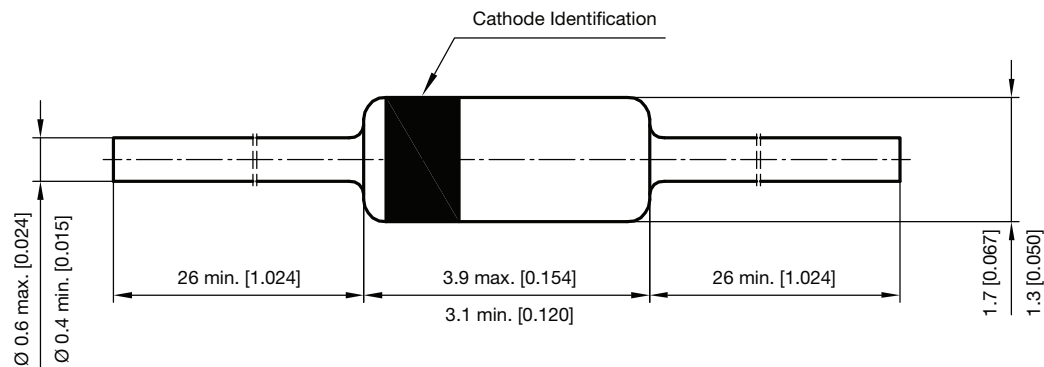


Fig. 2 - Typical Reverse Characteristics

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


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