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

Pb e2 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 ammopack (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/ammopack

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °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 s, δ < 0.5	I_{FRM}	350	mA
Surge forward current (1)	t_p < 10 ms	I_{FSM}	750	mA
Power dissipation (1)	T_{amb} = 80 °C	P_{tot}	150	mW

Note

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

THERMAL CHARACTERISTICS (T_{amb} = 25 °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	°C
Ambient operating temperature range		T_{amb}	- 65 to + 125	°C
Storage temperature range		T_{stg}	- 65 to + 150	°C

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Reverse breakdown voltage	I_R = 100 µA (pulsed)	$V_{(BR)}$	100			V
Leakage current (1)	V_R = 1.5 V	I_R			0.5	µA
	V_R = 1.5 V, T_j = 60 °C	I_R			5	µA
	V_R = 10 V	I_R			0.8	µA
	V_R = 10 V, T_j = 60 °C	I_R			7.5	µA
	V_R = 50 V	I_R			2	µA
	V_R = 50 V, T_j = 60 °C	I_R			15	µA
	V_R = 75 V	I_R			5	µA
	V_R = 75 V, T_j = 60 °C	I_R			20	µA
Forward voltage (1)	I_F = 0.1 mA	V_F			250	mV
	I_F = 10 mA	V_F			450	mV
	I_F = 250 mA	V_F			1000	mV
Diode capacitance	V_R = 0 V, f = 1 MHz	C_D		10		pF
	V_R = 1 V, f = 1 MHz	C_D		6		pF

Note
(1) Pulse test; $t_p \leq 300$ µs, , $\delta < 2$ %

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

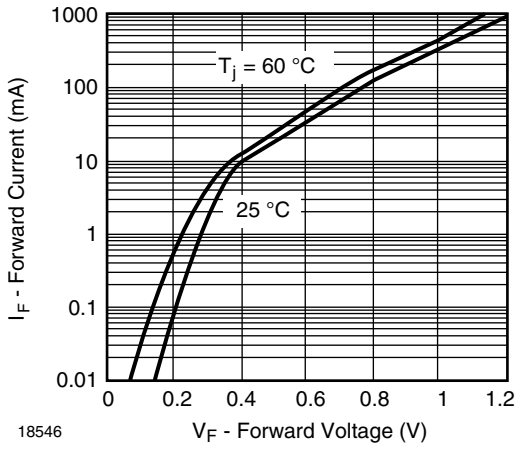


Fig. 1 - Typical Instantaneous Forward Characteristics

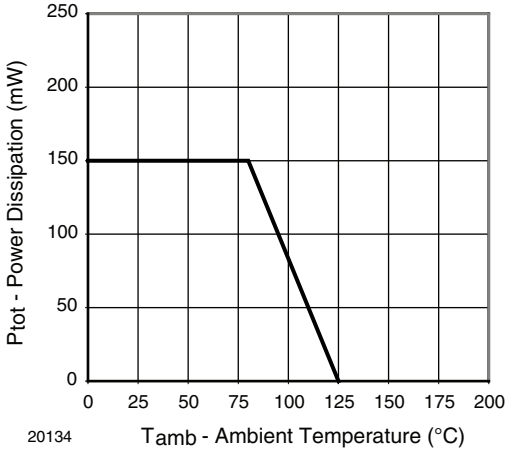


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

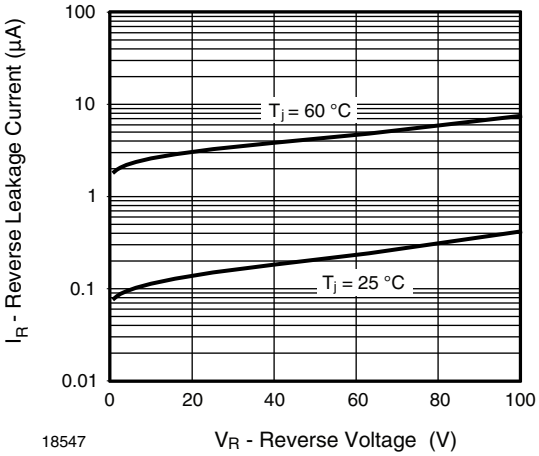
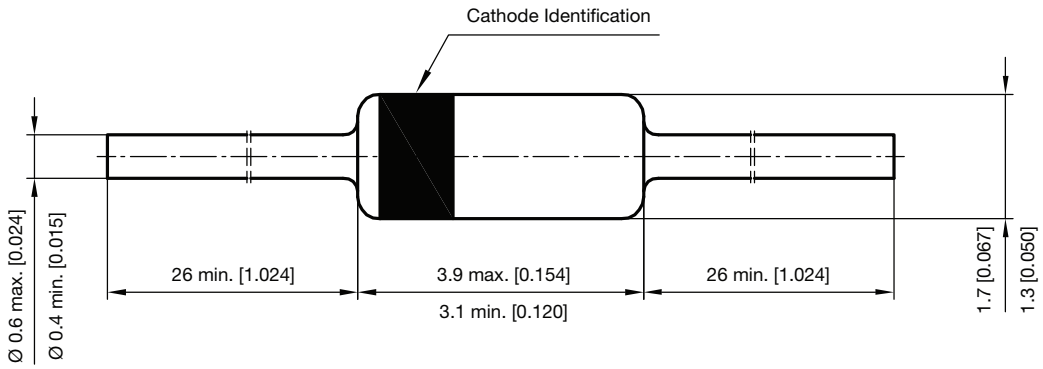


Fig. 2 - Typical Reverse Characteristics

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



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