Small Signal Schottky Diodes

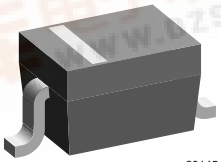
Features

- These diodes feature very low turn-on voltage and fast switching. These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- These diodes are also available in the DO-35 case with the type designations BAT42 to BAT43, in MiniMELF SOD-80 case with the type designations
  LL42 to LL43, and in SOD-123 plastic case with the type designations BAT42W-V to BAT43W-V
- For general purpose applications
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Pb-free

e3

RoHS
COMPLIANT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Mechanical Data

Case: SOD-323
Weight: approx. 4.3 mg
Packaging codes/options:
GS18/10 k per 13" reel (8 mm tape), 10 k/box
GS08/3 k per 7" reel (8 mm tape), 15 k/box

Parts Table

Part	Ordering code	Type marking	Remarks
BAT42WS-V	BAT42WS-V-GS18 or BAT42WS-V-GS08	L2	Tape and reel
BAT43WS-V	BAT43WS-V-GS18 or BAT43WS-V-GS08	L3	Tape and reel

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Repetitive peak reverse voltage		V_{RRM}	30	V
Forward continuous current		I_F	200 [1]	mA
Repetitive peak forward current	t_p < 1 s, δ < 0.5	I_{FRM}	500 [1]	mA
Surge forward current	t_p < 10 ms	I_{FSM}	4 [1]	A
Power dissipation [1]		P_{tot}	150 [1]	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		R_{thJA}	650 [1]	K/W
Junction temperature		T_j	125	°C
Ambient operating temperature range		T_{amb}	- 55 to + 125	°C
Storage temperature range		T_{stg}	- 55 to + 150	°C

Note:
[1] Valid provided that electrodes are kept at ambient temperature

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min.	Typ.	Max.	Unit
Reverse breakdown voltage	I_R = 100 µA (pulsed)		$V_{(BR)}$	30			V
Leakage current [1]	V_R = 25 V		I_R			0.5	µA
	V_R = 25 V, T_j = 100 °C		I_R			100	µA
Forward voltage [1]	I_F = 200 mA		V_F			1000	mV
	I_F = 10 mA	BAT42WS-V	V_F			400	mV
	I_F = 50 mA	BAT42WS-V	V_F			650	mV
	I_F = 2 mA	BAT43WS-V	V_F	260		330	mV
	I_F = 15 mA	BAT43WS-V	V_F			450	mV
Diode capacitance	V_R = 1 V, f = 1 MHz		C_D		7		pF
Reverse recovery time	I_F = 10 mA, I_R = 10 mA, i_R = 1 mA, R_L = 100 Ω		t_{rr}			5	ns

Note:
[1] Pulse test t_p < 300 µs, t_p/T < 0.02

Typical Characteristics

T_{amb} = 25 °C, unless otherwise specified

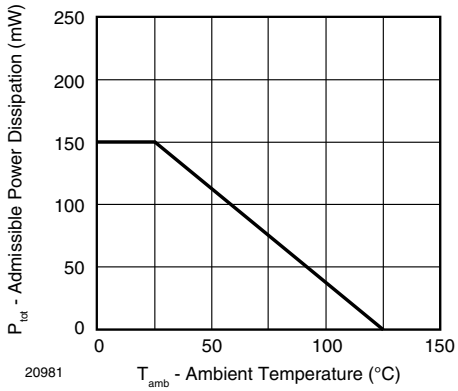

Figure 1. Admissible Power Dissipation vs. Ambient Temperature

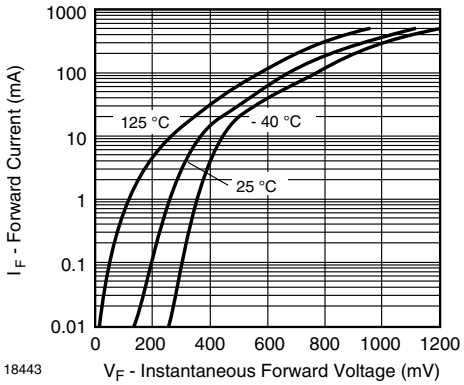

Figure 2. Typical Forward Characteristics

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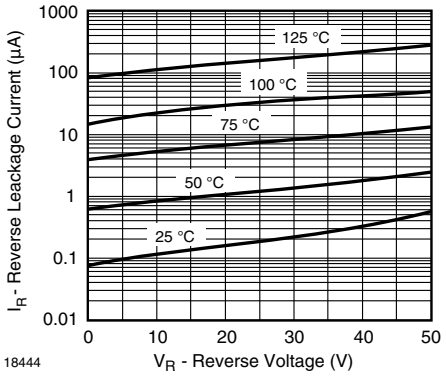


Figure 3. Typical Reverse Characteristics

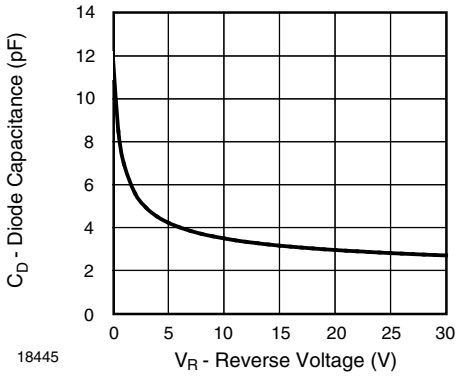
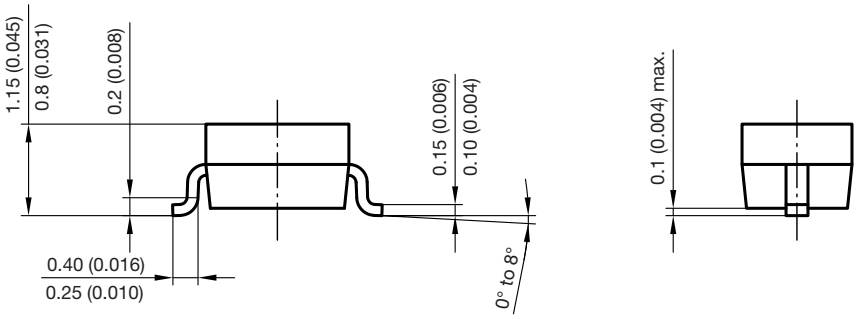
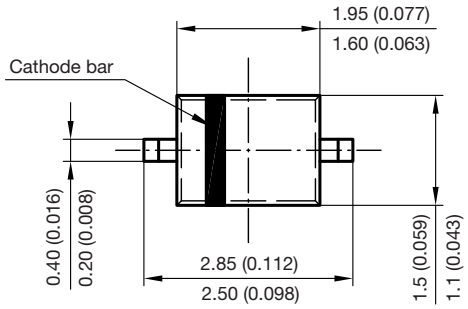


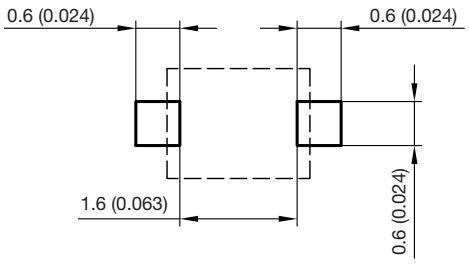
Figure 4. Typical Capacitance vs. Reverse Voltage

Package Dimensions in millimeters (inches): **SOD-323**





Foot print recommendation:



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