

A suffix of "-C" specifies halogen & lead-free

FEATURES

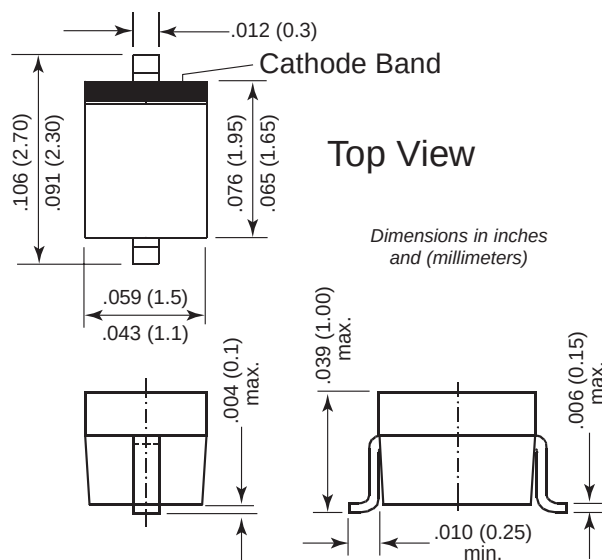
- RoHS Compliant Product
- High Current Capability
- Extremely Low Thermal Resistance
- For Surface Mount Application
- Higher Temp Soldering : 250°C for 10 Seconds at Terminals
- Low Forward Voltage

MECHANICAL DATA

- Case: Molded Plastic
- Epoxy: UL 94V-0 Rate Flame Retardant
- Lead: Axial Leads, Solderable per MIL-STD-202, Method208 Guaranteed.
- Weight: approx. 0.0045g
- Mounting Position: Any

Marking Vodes: BAT42WS=S7
BAT43WS=S8

SOD-323(SC-76)



Dimensions in inches
and (millimeters)

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbo	BAT42WS / BAT43WS	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Forward Continuous Current (Note 1)	I_{FM}	200	mA
Repetitive Peak Forward Current (Note 1) @ $t < 1.0s$	I_{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current @ $t < 10ms$	I_{FSM}	4.0	A
Power Dissipation	P_d	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +125	$^\circ\text{C}$

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	30	—	V	$I_R = 100\mu\text{A}$
Forward Voltage Drop (Note 2)	V_{FM}	—	1.0 0.40 0.65 0.33 0.45	V	$I_F = 200\text{mA}$ $I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 2.0\text{mA}$ $I_F = 15\text{mA}$
Peak Reverse Current (Note 2)	I_{RM}	—	500 100	nA μA	$V_R = 25\text{V}$ $V_R = 25\text{V}, T_j = 100^\circ\text{C}$
Total Capacitance	C_T	—	10	pF	$V_R = 1.0\text{V}, f = 1.0\text{MHz}$
Reverse Recovery Time	t_{rr}	—	5.0	ns	$I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$
Rectification Efficiency	η_V	80	—	%	$R_L = 15\Omega, C_L = 300\text{pF}$ $f = 45\text{MHz}, V_{RF} = 2.0\text{V}$

Notes: 1. Part mounted on FR-4 board with recommended pad layout.
2. Short duration pulse test used to minimize self-heating effect.

Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 – Admissible Power Dissipation vs. Ambient Temperature

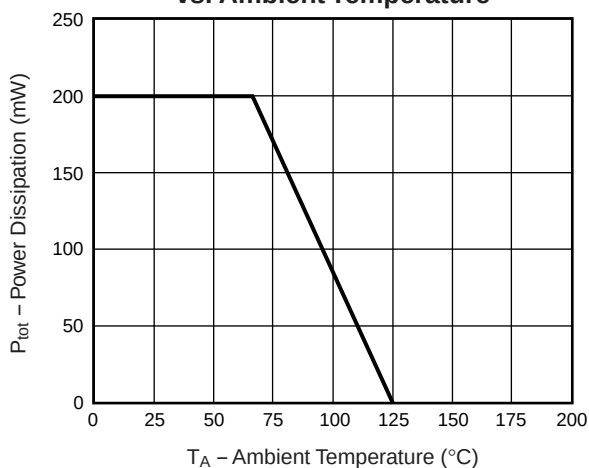


Fig. 2 – Typical Reverse Characteristics

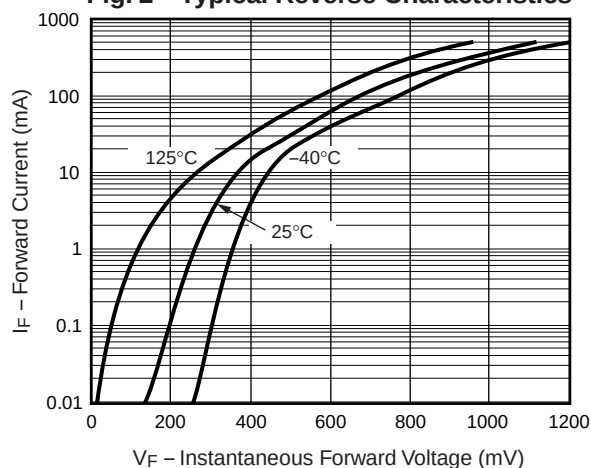


Fig. 3 – Typical Reverse Characteristics

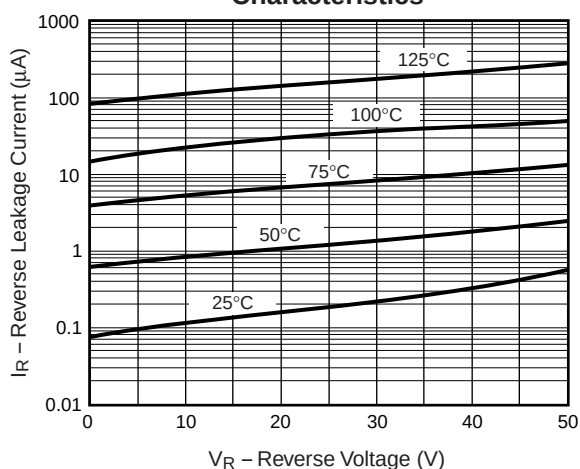


Fig. 4 – Typical Capacitance vs. Reverse Applied Voltage

