FEATURES

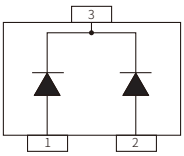
- Fast Switching Device (TRR <4nS)
- Power Dissipation of 200mW
- High Stability and High Reliability
- Low reverse leakage
- Meet AEC-Q101 Requirements

SOT-323

Marking

MECHANICAL DATA

- SOT-323 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V_{RM}	100	V
Reverse Voltage	V_R	100	V
Average Rectified Current	I_O	150	mA
Non-repetitive Peak Forward Current	I_{FM}	300	mA
Typical thermal resistance	$R_{\theta JA}$	625	°C/W
Peak Forward Surge Current @tp=1ms; T_A=25°C	I_{FSM}	2.0	A
Power Dissipation	P_D	200	mW
Operating junction temperature	T_J	150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS(T_A=25°C)

Parameter	Test Condition	Symbol	Min.	Max.	Unit
Reverse Voltage	I_B = 100μA	V_{RB}	100		V
Reverse Current	V_R = 25V	I_R		25	nA
	V_R = 75V			2.5	μA
Forward Voltage	I_F =1mA	V_F		0.715	V
	I_F =10mA			0.855	V
	I_F=50mA			1.00	V
	I_F=150mA			1.25	V
Capacitance between terminals	V_R=0V, f=1MHz	C_T		2.0	pF
Reverse Recovery Time	I_F=I_R=10mA Irr=0.1×I_R,R_L=100Ω	t_{rr}		4	nS

CHARACTERISTIC CURVES

Fig 1. Forward Characteristics

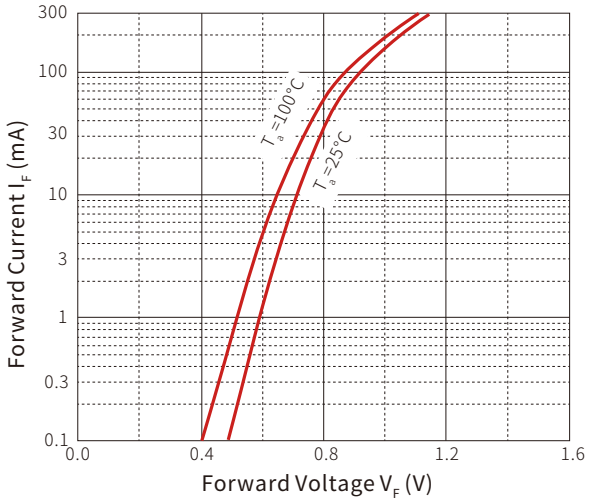


Fig 2. Reverse Characteristics

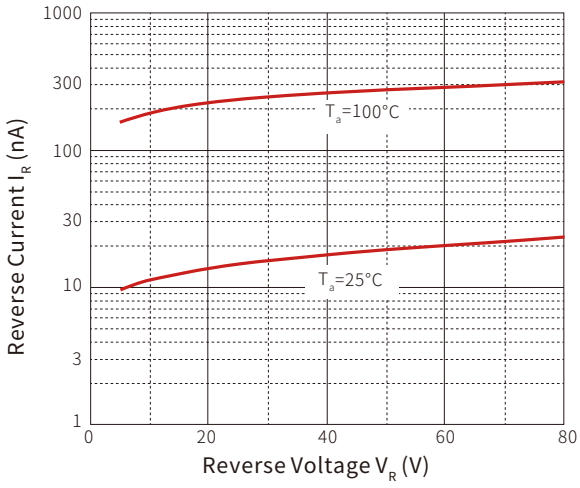


Fig 3. Capacitance Characteristics

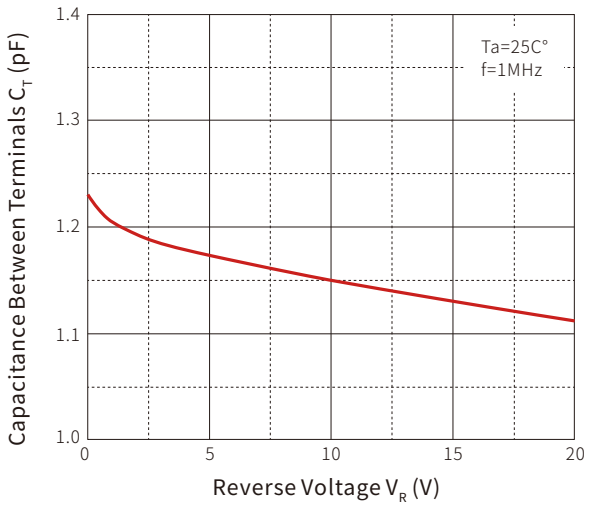
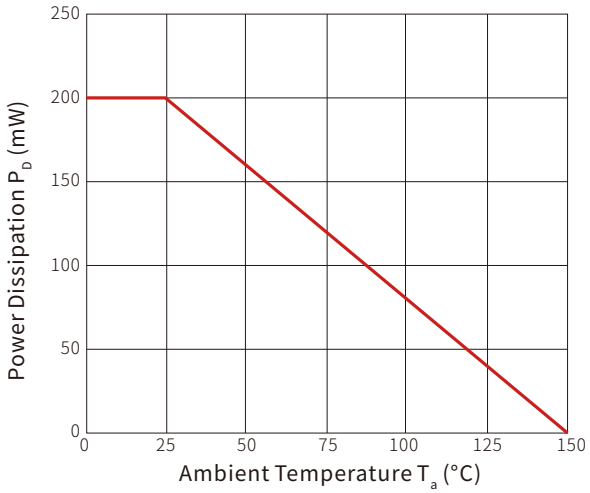
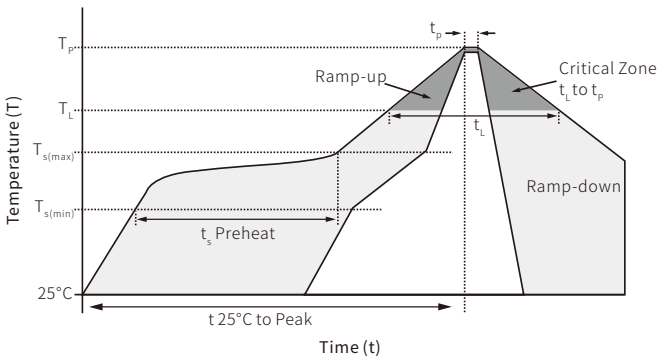


Fig 4. Power Derating Curve

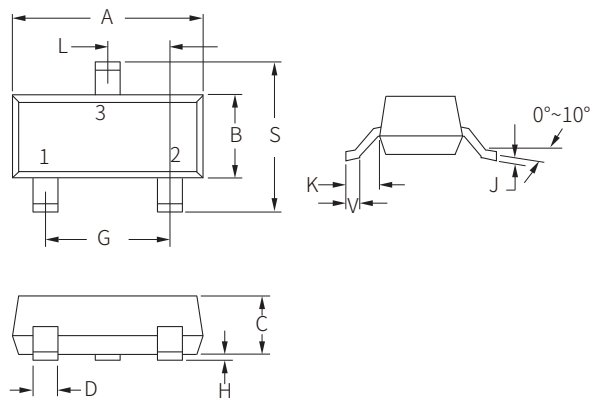


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

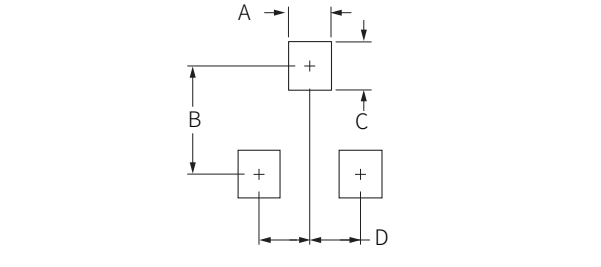


SOT-323 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.00	2.20	0.079	0.087
B	1.15	1.35	0.045	0.053
C	0.80	1.10	0.031	0.043
D	0.20	0.40	0.008	0.016
G	1.20	1.40	0.047	0.055
H	0.00	0.10	0.000	0.004
J	0.08	0.15	0.003	0.006
K	0.525REF		0.021REF	
L	0.650TYP		0.026TYP	
S	2.15	2.45	0.085	0.096
V	0.26	0.46	0.010	0.018

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
	NOR	NOR
A	0.50	0.020
B	2.20	0.087
C	0.80	0.031
D	1.30	0.051

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BAV70WQ	SOT-323	3000PCS	7”

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