

FEATURES

- | SOT-323 Package
- | Epoxy meets UL 94 V-0 flammability rating and halogen free
- | Meet AEC-Q101 Requirements



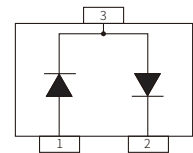
SOT-323



Marking

APPLICATION

- | Extreme fast switches
- | Automotive



Schematic Symbol

APPROVALS

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

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V_{RM}	100	V
Reverse Voltage	V_R	75	V
Average Rectified Current	$I_{F(AV)}$	300	mA
Typical thermal resistance	$R_{\theta JA}$	625	$^{\circ}\text{C}/\text{W}$
Peak Forward Surge Current @ $t_p=1\mu\text{s}$	I_{FSM}	2	A
Power Dissipation	P_D	200	mW
Operating junction temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Reverse Voltage	$I_R = 100\mu\text{A}$	V_R	75			V
Reverse Current	$V_R = 25\text{V}$	I_R			0.025	μA
	$V_R = 75\text{V}$				2.5	μA
Forward Voltage	$I_F = 1\text{mA}$	V_F		0.61	0.715	V
	$I_F = 10\text{mA}$			0.74	0.855	V
	$I_F = 50\text{mA}$			0.85	1.00	V
	$I_F = 150\text{mA}$			0.98	1.25	V
Diode Capacitance	$V_R = V_F = 0\text{V}, f = 1\text{MHz}$	C_j			2.0	pF
Reverse Recovery Time	$I_F = I_{rr} = 10\text{mA}$ $I_{rr} = 0.1 I_R, R_L = 100\Omega$	t_{rr}			4	ns

CHARACTERISTIC CURVES

Fig 1. Forward Characteristics

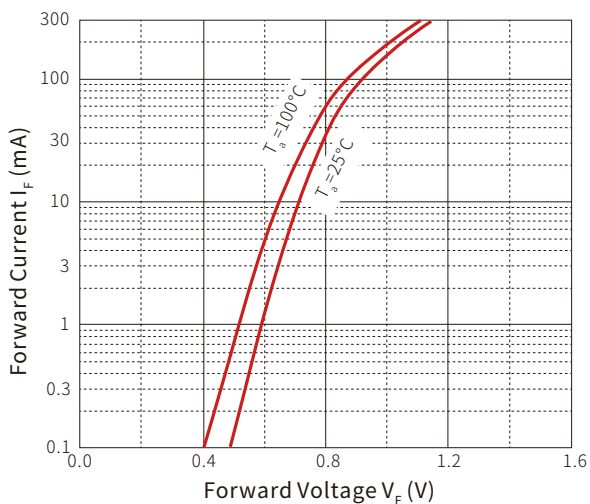


Fig 2. Reverse Characteristics

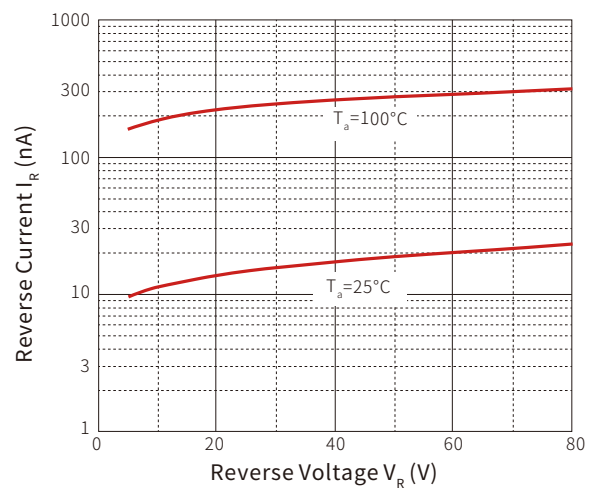
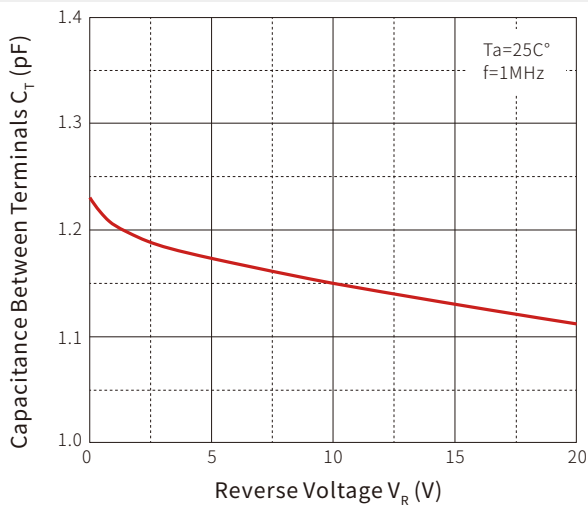
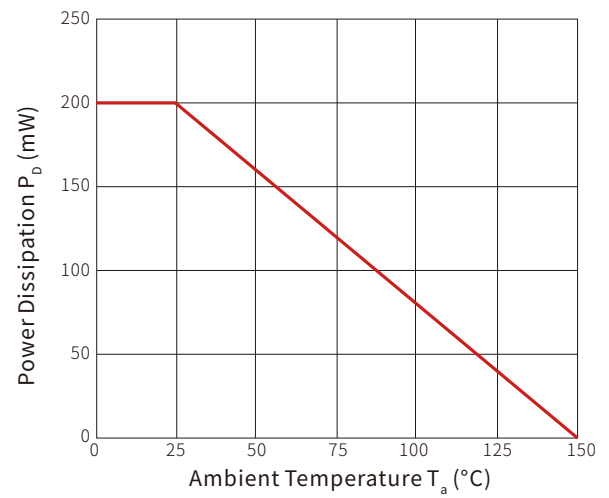
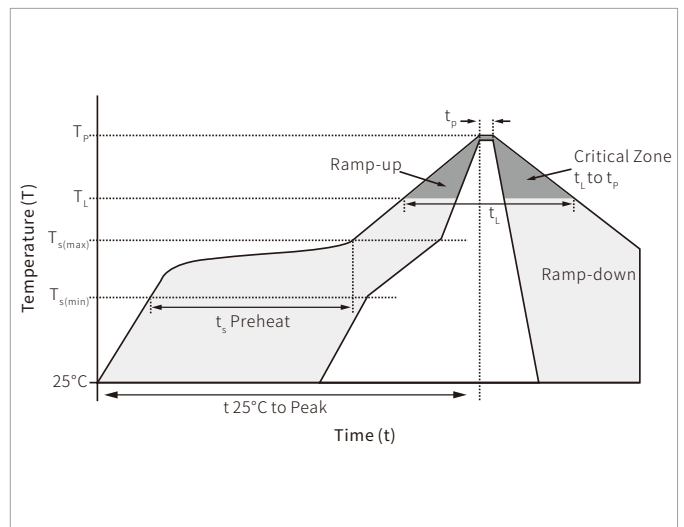


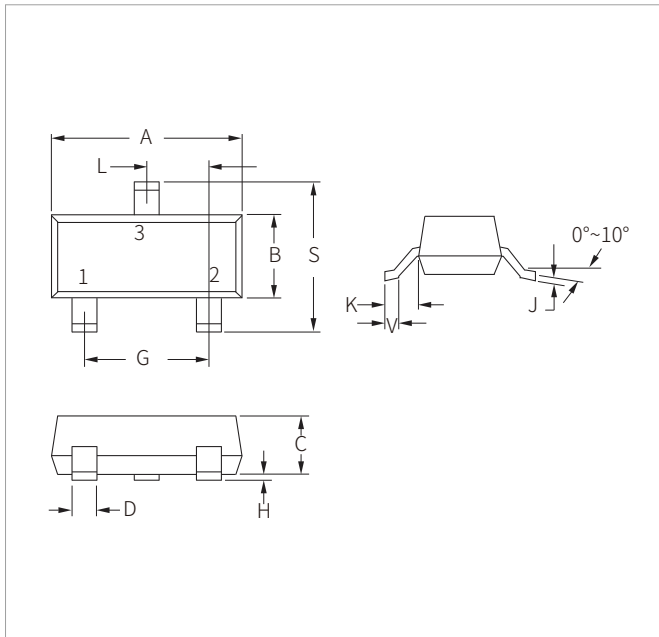
Fig 3. Capacitance Characteristics

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

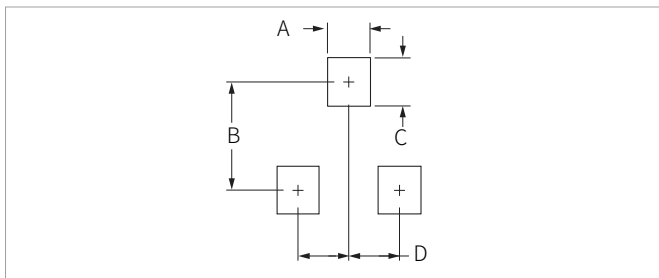


SOT-323 PACKAGE INFORMATION



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
BAV99WQ	SOT-323	3000PCS	7"

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