

FEATURES

| Fast Switching Device (TRR <3uS)

| Power Dissipation of 250mW

| High Stability and High Reliability

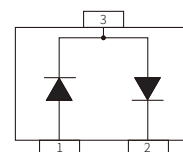
| Low reverse leakage



SOT-323



Marking



Schematic Symbol

MECHANICAL DATA

| SOT-323 Small Outline Plastic Package

| Polarity: Color band denotes cathode end

| Mounting Position: Any

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
Reverse Voltage		V_R	85	V
Non-repetitive Peak Forward Current	Single diode	I_{FM}	160	mA
	Double diode		140	mA
Repetitive Peak Forward Current		I_{FRM}	500	mA
Peak Forward Surge Current; $T_A=25^{\circ}\text{C}$	@tp=1.0us	I_{FSM}	4.0	A
	@tp=1.0ms		1.0	A
	@tp=1.0s		0.5	A
Power Dissipation		P_D	250	mW
Typical thermal resistance		$R_{\theta JA}$	500	$^{\circ}\text{C/W}$
Operating junction temperature		T_J	150	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-65 to +150	$^{\circ}\text{C}$

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

Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Reverse Voltage	$I_B = 100\mu\text{A}$	V_{RB}	85			V
Reverse Current	$V_R = 75\text{V}$	I_R			5	nA
Forward Voltage	$I_F = 1\text{mA}$	V_F			0.90	V
	$I_F = 10\text{mA}$				1.00	V
	$I_F = 50\text{mA}$				1.10	V
	$I_F = 150\text{mA}$				1.25	V
Capacitance between terminals	$V_R = 0\text{V}, f = 1\text{MHz}$	C_T		2.0		pF
Reverse Recovery Time	$I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$	t_{rr}			3	μs

CHARACTERISTIC CURVES

Fig 1. Power Derating Curve

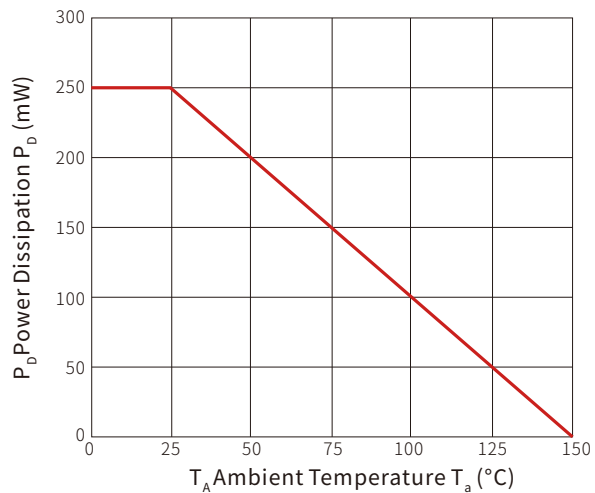


Fig 2. Current Derating Curve

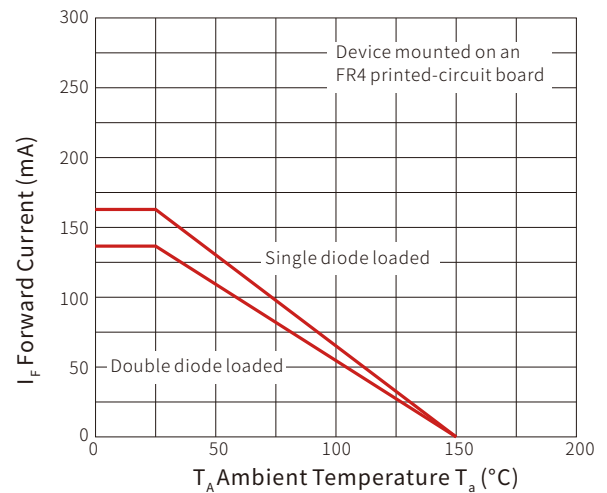
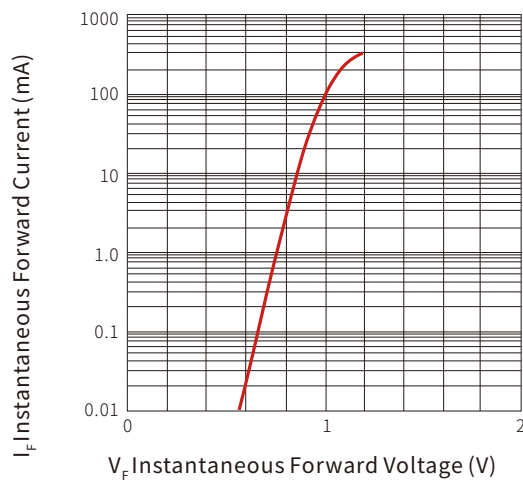
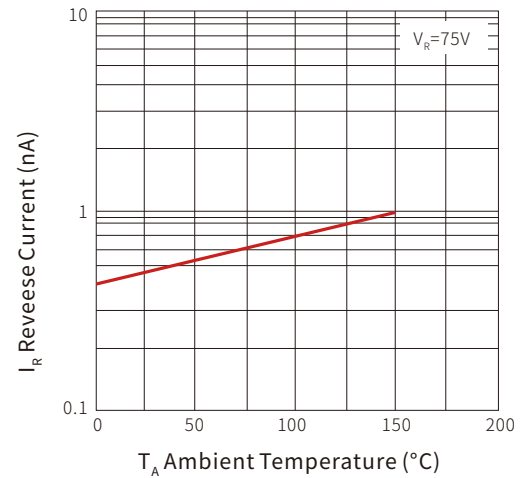
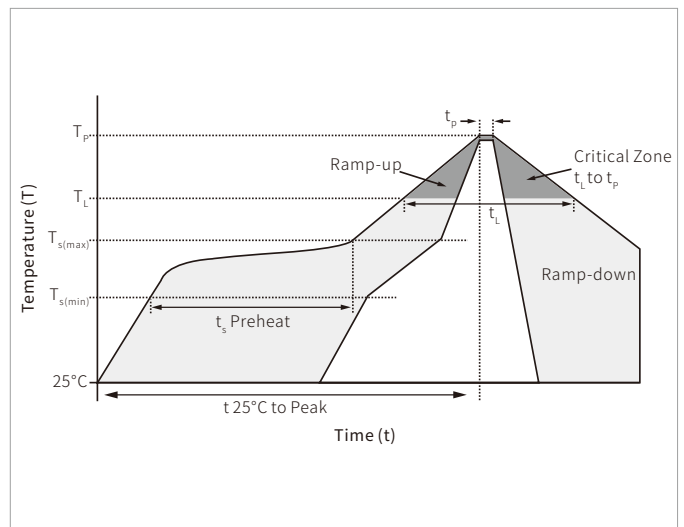


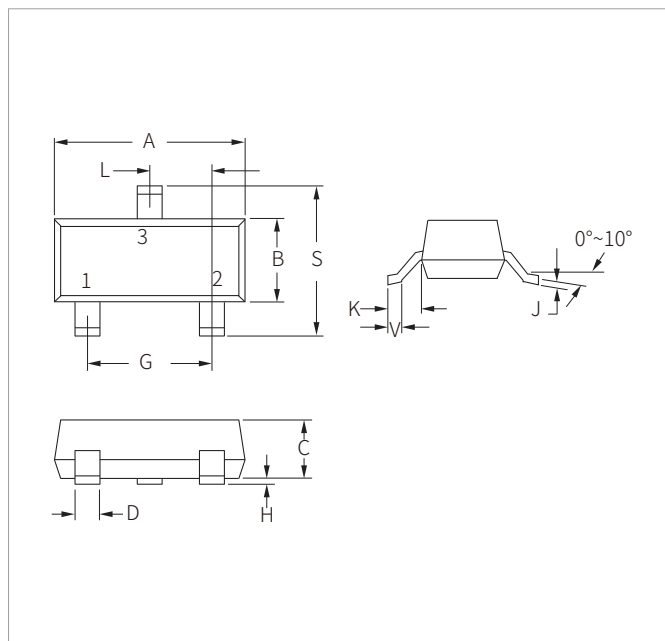
Fig 3. Typical Forward Characteristics

Fig 4. Typical Reverse Characteristics


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

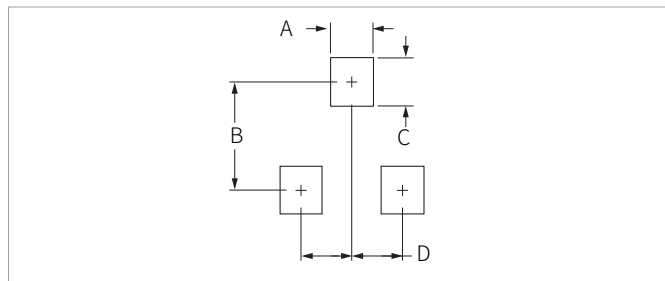


SOT-323 PACKAGE INFORMATION



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
BAV199W	SOT-323	3000PCS	7"

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