

FEATURES

- | Fast Switching Device (TRR <50 nS)

- | Power Dissipation of 225mW

- | High Stability and High Reliability

- | Low Reverse Leakage



SOT-23



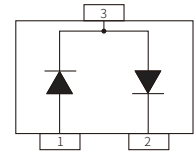
Marking

MECHANICAL DATA

- | SOT-23 Small Outline Plastic Package

- | Epoxy UL: 94V-0

- | Mounting Position: Any



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
Reverse Voltage	V_R	250	V
Peak Repetitive Reverse Voltage	V_{RRM}	250	V
Power Dissipation	P_D	225	mW
Forward Continuous Current	I_{FM}	400	mA
Repetitive Peak Forward Surge Current	I_{FRM}	625	mA
Non-Repetitive Peak Forward Surge Current @t=8.3ms; $T_A=25^{\circ}\text{C}$	I_{FSM}	2.5	A
Operating Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_S	-55 to +150	$^{\circ}\text{C}$
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	555	$^{\circ}\text{C}/\text{W}$

Valid provided that electrodes are kept at ambient temperature.

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

Parameter	Test Condition	Symbol	Min.	Max.	Unit
Reverse Voltage	$I_R = 100\mu\text{A}$	$V_{(BR)}$	250		V
Reverse Leakage Current	$V_R = 200\text{V}$	I_R		0.1	μA
Forward Voltage	$I_F = 100\text{mA}$	V_F		1.00	V
	$I_F = 200\text{mA}$			1.25	
Reverse Recovery Time	$I_F = I_R = 30\text{mA}$	T_{RR}		50	nS
	$R_L = 100\Omega$				
	$I_{RR} = 0.1 \times I_R$				
Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$	C_T		5	pF

CHARACTERISTIC CURVES

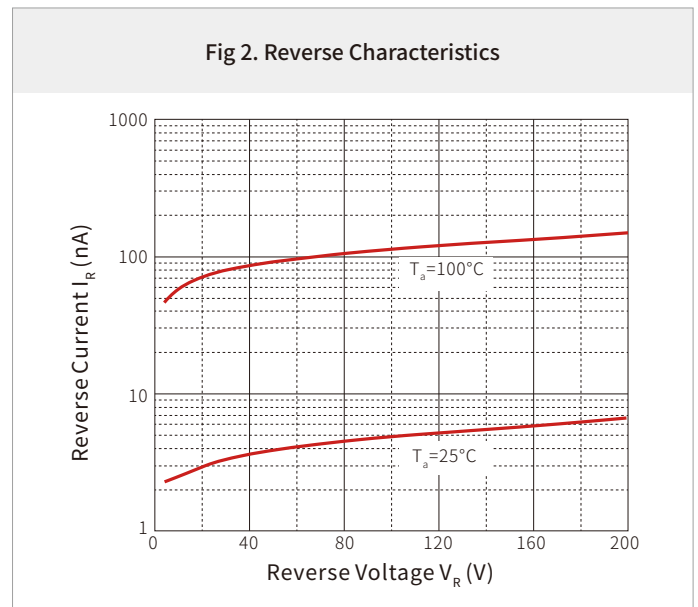
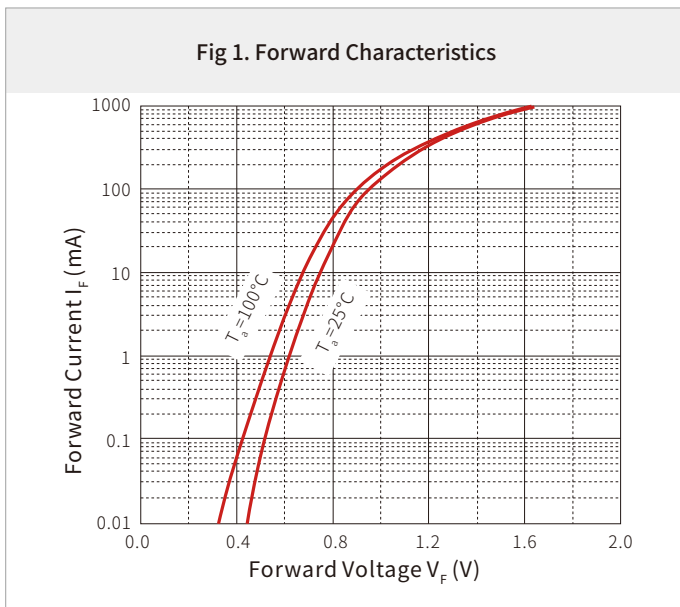
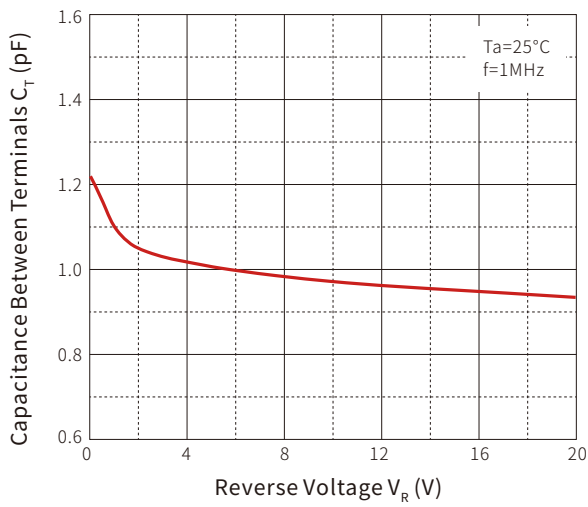
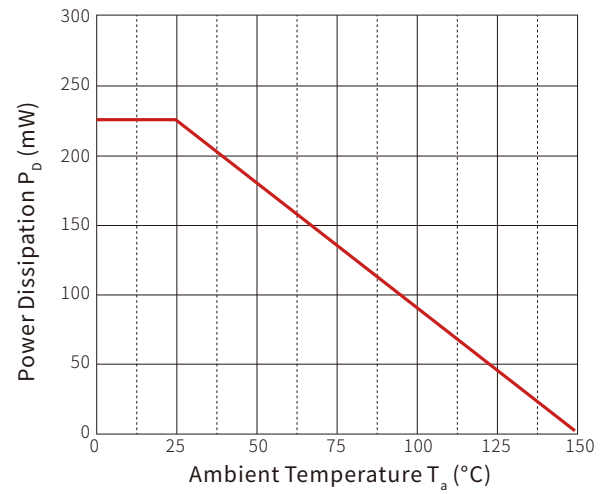
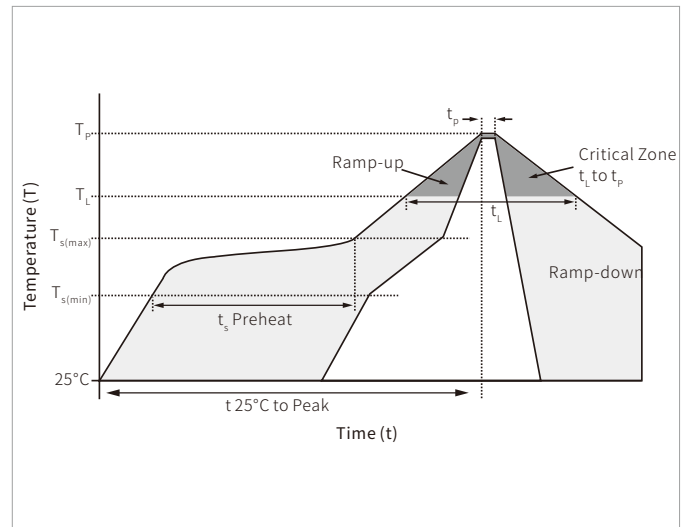


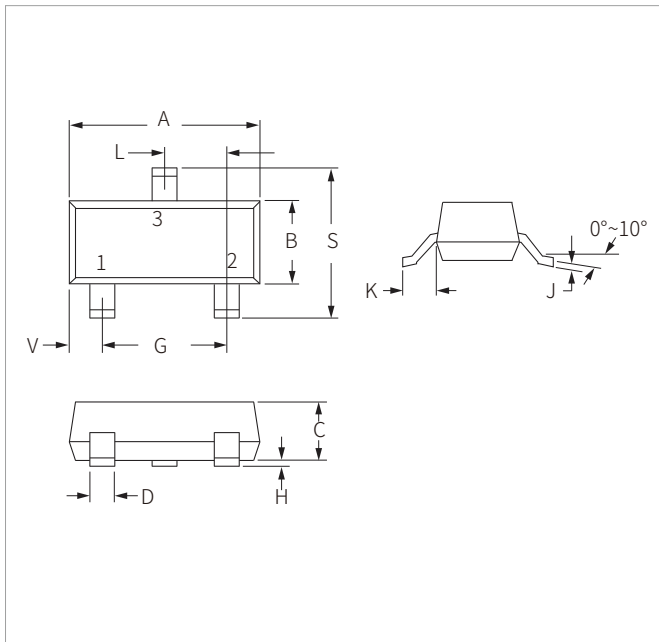
Fig 3. Capacitance Characteristics

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

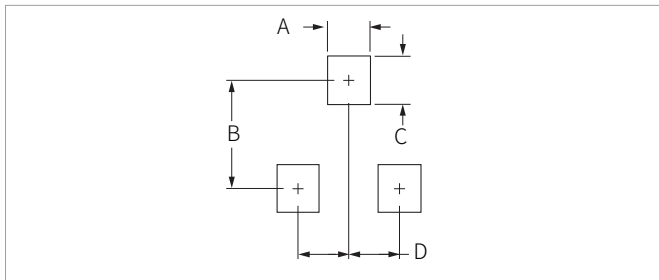


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BAS21S	SOT-23	3000PCS	7"

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