

## FEATURES

- | Fast Switching Speed

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- | For General Purpose Switching Applications

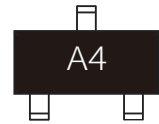
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- | High Conductance

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SOT-23



Marking

## MECHANICAL DATA

- | SOT-23 Small Outline Plastic Package

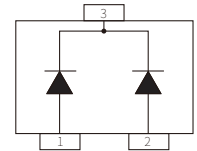
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- | Polarity: Color band denotes cathode end

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- | Mounting Position: Any

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Schematic Symbol

## APPROVALS

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

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

Parameter	Symbol	Value	Unit
Reverse Breakdown Voltage	$V_{RM}$	70	V
DC Blocking Voltage	$V_R$	70	V
Forward Current	$I_F$	200	mA
Repetitive Peak Forward Current	$I_{FRM}$	500	mA
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	556	$^{\circ}\text{C}/\text{W}$
Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	$I_{FSM}$	2.0	A
Power Dissipation	$P_D$	225	mW
Junction Temperature	$T_J$	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.	Max.	Unit
Reverse breakdown Voltage	$I_R = 100\mu\text{A}$	$V_R$	70		V
Reverse Current	$V_R = 70\text{V}$	$I_R$		2.5	$\mu\text{A}$
Forward Voltage	$I_F = 1\text{mA}$	$V_{F1}$		0.715	V
	$I_F = 10\text{mA}$	$V_{F2}$		0.855	V
	$I_F = 50\text{mA}$	$V_{F3}$		1	V
	$I_F = 150\text{mA}$	$V_{F4}$		1.25	V
Capacitance between terminals	$V_R = 0\text{V}, f = 1\text{MHz}$	$C_T$		1.5	pF
Reverse Recovery Time	$I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$	$t_{rr}$		6	nS

## CHARACTERISTIC CURVES

Fig 1. Forward Characteristics

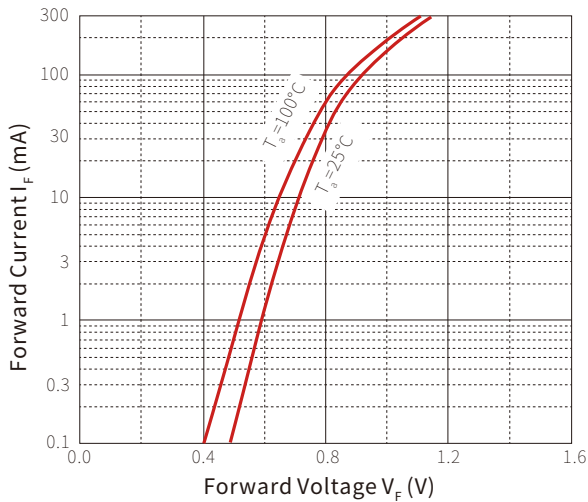
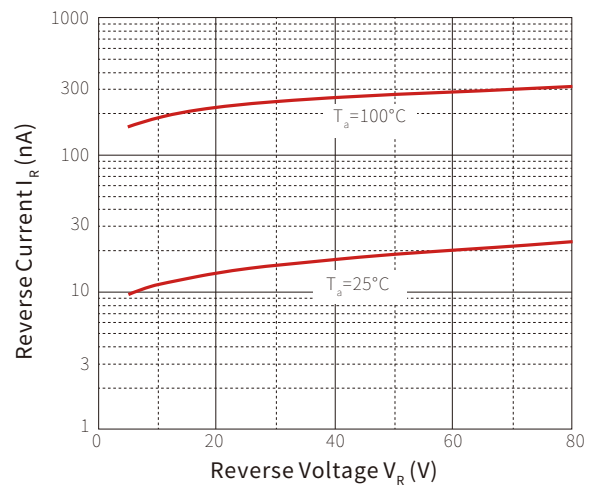
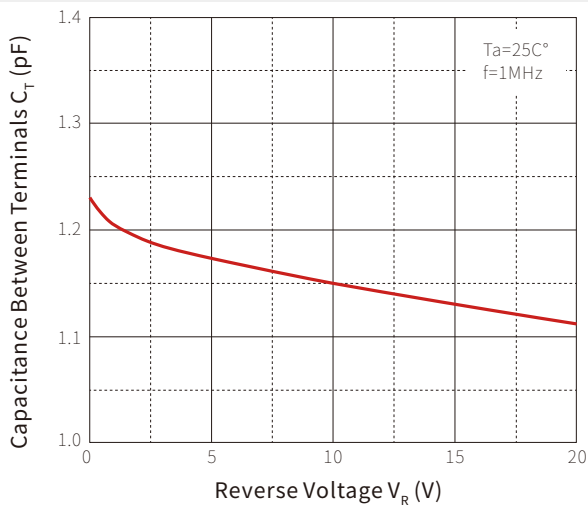
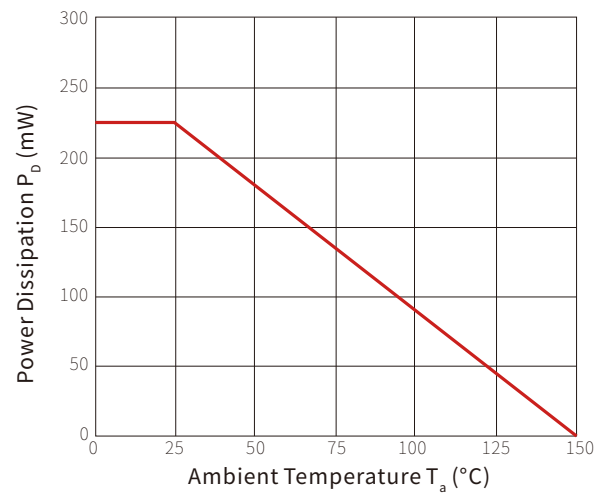


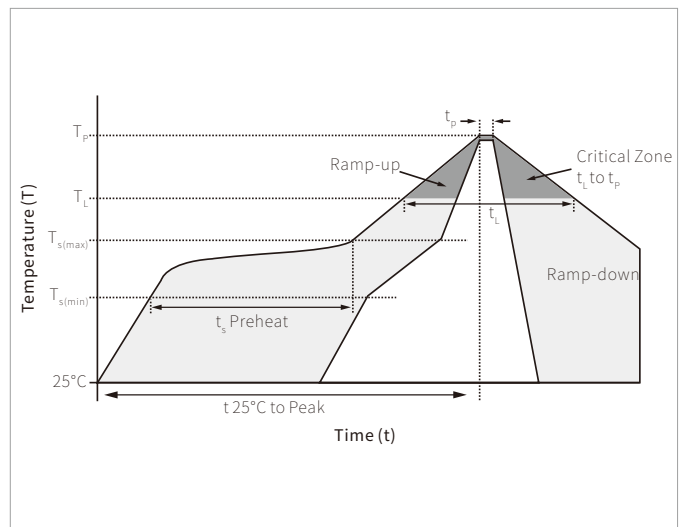
Fig 2. Reverse Characteristics



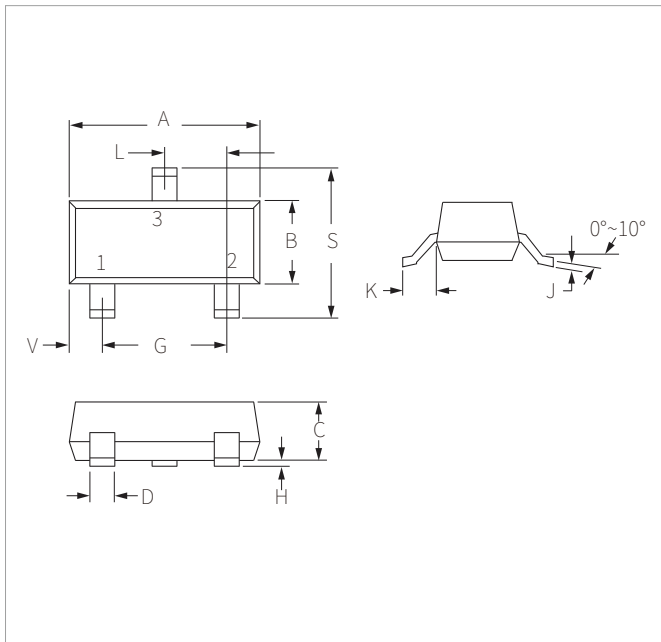
**Fig 3. Capacitance Characteristics**

**Fig 4. Power Derating Curve**


## SOLDERING PARAMETERS

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

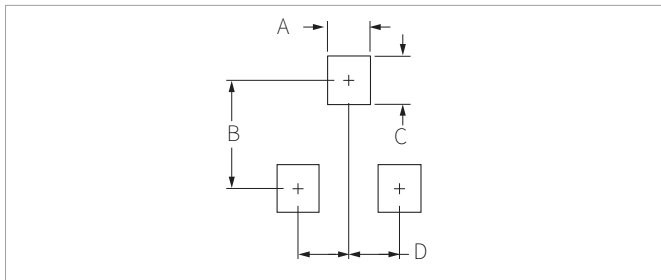


## SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.04	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.89	1.11	0.035	0.044
D	0.37	0.50	0.015	0.020
G	1.78	2.04	0.070	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	2.64	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
BAV70	SOT-23	3000PCS	7"

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