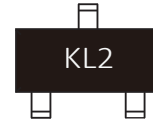


## FEATURES

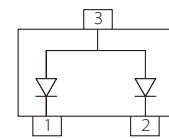
- | High Current Capability
- | Low Forward Voltage Drop
- | Extremely Fast Switching Speed



SOT-23



Marking



Schematic Symbol

## MECHANICAL DATA

- | SOT-23 Small Outline Plastic Package
- | Epoxy UL: 94V-0
- | Mounting Position: Any

## APPROVALS

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

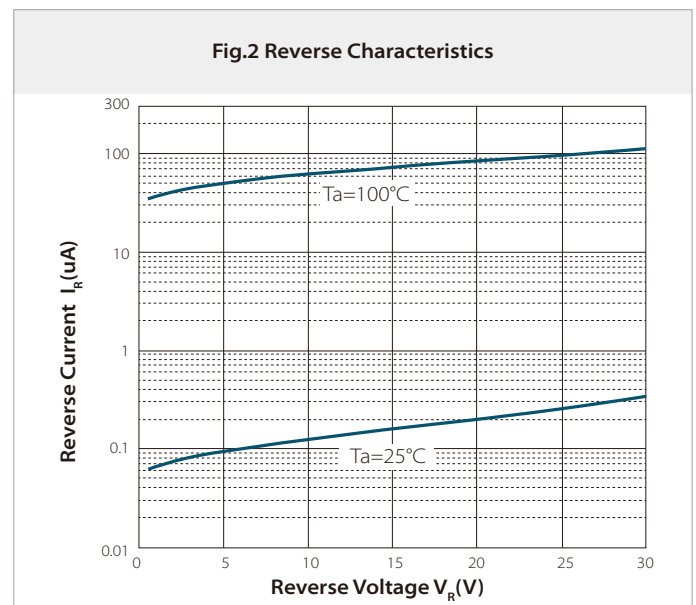
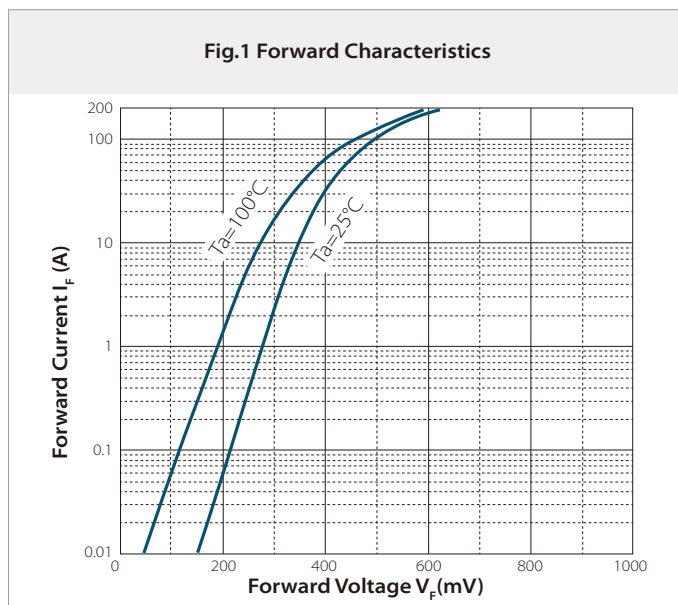
## MAXIMUM RATINGS (T<sub>A</sub> = 25°C )

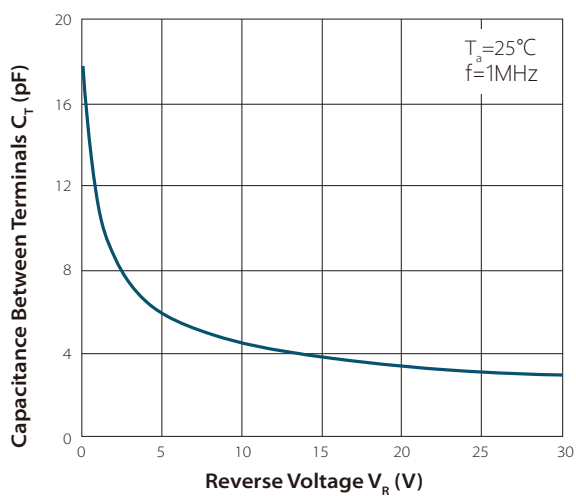
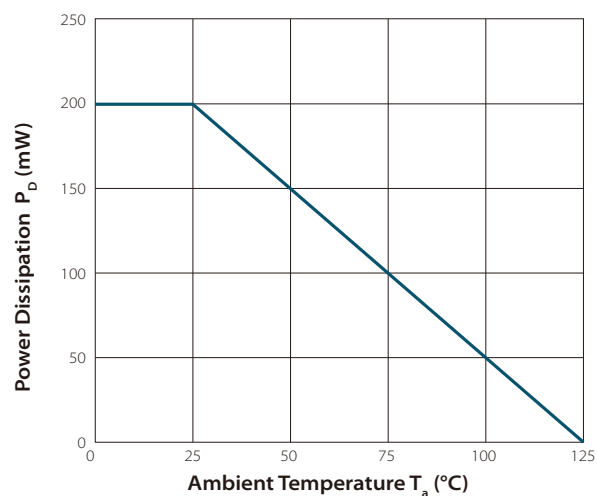
Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	30	V
Maximum RMS voltage	V <sub>RMS</sub>	21	V
Maximum DC blocking voltage	V <sub>DC</sub>	30	V
Maximum average forward rectified current	I <sub>FM</sub>	200	mA
Peak forward surge current 8.3 ms single half sine-wave	I <sub>FSM</sub>	600	mA
Typical thermal resistance	R <sub>θJA</sub>	500	°C/W
Power Dissipation	P <sub>D</sub>	200	mW
Junction Temperature	T <sub>J</sub>	125	°C
Storage temperature range	T <sub>stg</sub>	-50~+150	°C

## ELECTRICAL CHARACTERISTICS(T<sub>A</sub>=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =0.1mA			0.24	V
		I <sub>F</sub> =1.0mA			0.32	V
		I <sub>F</sub> =10mA			0.40	V
		I <sub>F</sub> =30mA			0.50	V
		I <sub>F</sub> =100mA			1.00	V
Reverse breakdown voltage	V <sub>(BR)</sub>	I <sub>R</sub> =100uA	30			V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> =25V			2	μA
Type junction capacitance	C <sub>j</sub>	V <sub>R</sub> =1V, f=1MHz			10	pF
Reverse Recovery Time	T <sub>RR</sub>	I <sub>F</sub> =I <sub>R</sub> =10mA, R <sub>L</sub> =100Ω I <sub>RR</sub> =0.1×I <sub>R</sub>			5	nS

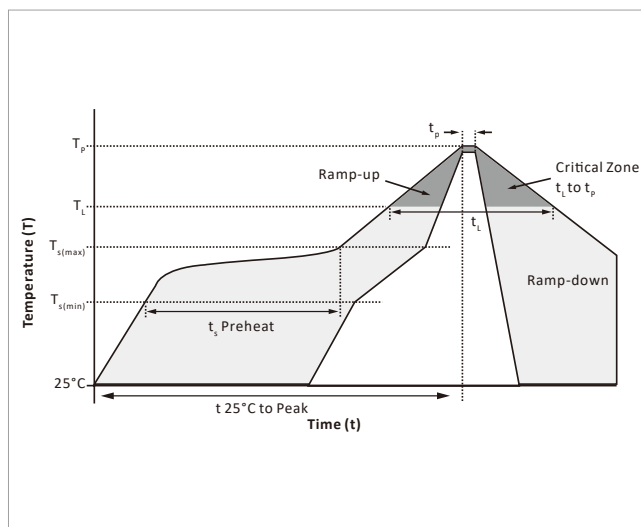
## CHARACTERISTIC CURVES



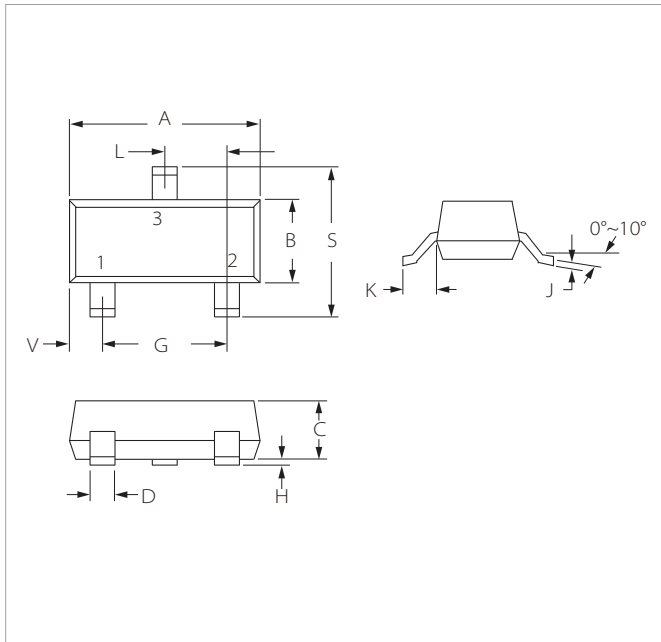
**Fig.3 Capacitance Characteristics**

**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

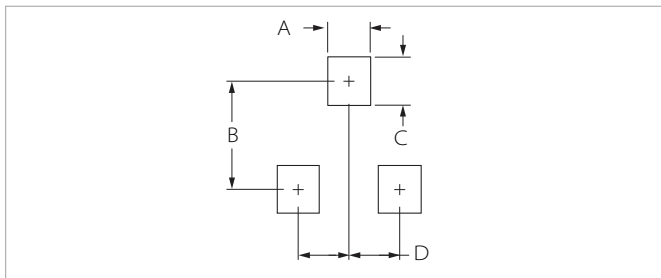


## SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.04	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
BAT54A	SOT-23	3000PCS	7"

To find your local partner within Semiwell's website : [www.semiwell.com.cn](http://www.semiwell.com.cn)

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