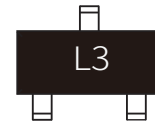


FEATURES

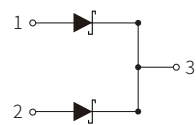
- Low Forward Voltage Drop
- Fast Switching
- Pn Junction Guard Ring For Transient And ESD Protection



SOT-523



Marking



Schematic Symbol

MECHANICAL DATA

- SOT-523 Small Outline Plastic Package
- Epoxy UL: 94V-0
- 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
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Working Peak Reverse Voltage	V_{RWM}	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Power Dissipation	P_d	150	mW
Operating Junction Temperature	T_J	125	$^{\circ}\text{C}$
Storage Temperature Range	T_S	-55 to +150	$^{\circ}\text{C}$
Average Rectified Output Current	I_O	600	mA
Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	I_{FSM}	300	mA
Peak Forward Surge Current @ $t_p=1\text{s}; \delta \leq 0.5$	I_{FRM}	2.0	A
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	600	$^{\circ}\text{C}/\text{W}$

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F=1\text{mA}$			0.32	V
		$I_F=10\text{mA}$			0.40	V
		$I_F=30\text{mA}$			0.50	V
		$I_F=100\text{mA}$			1.00	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R=100\mu\text{A}$	30			V
Reverse Leakage Current	I_R	$V_R=25\text{V}$			2	μA
Total Capacitance	C_{tot}	$V_R=1\text{V}$, $f=1\text{MHz}$			10	pF
Reverse Recovery Time	T_{RR}	$I_F=I_R=10\text{mA}$, $R_L=100\Omega$ $I_{RR}=0.1 \times I_R$			5	nS

CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

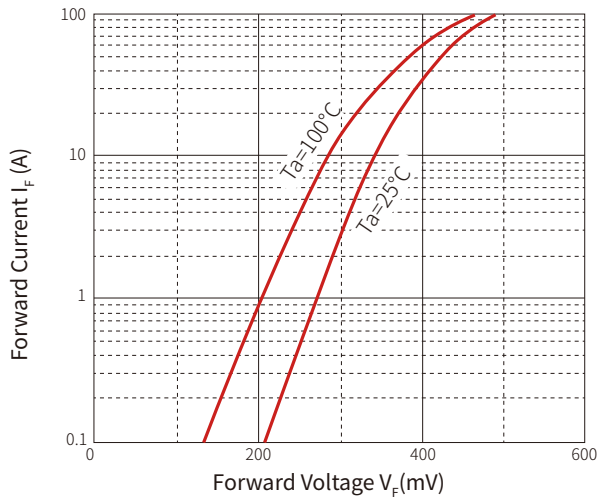


Fig.2 Reverse Characteristics

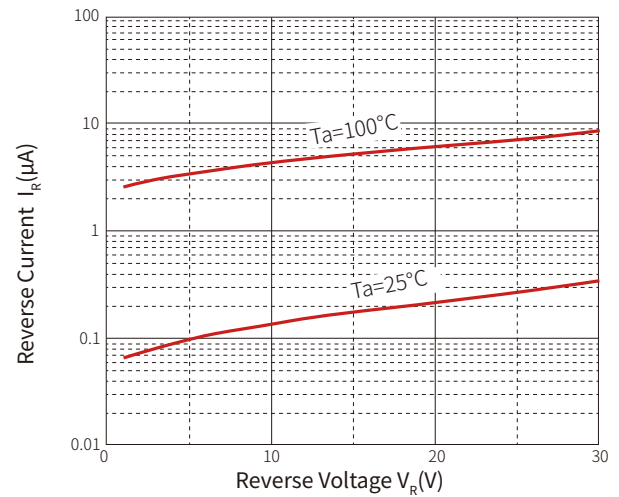
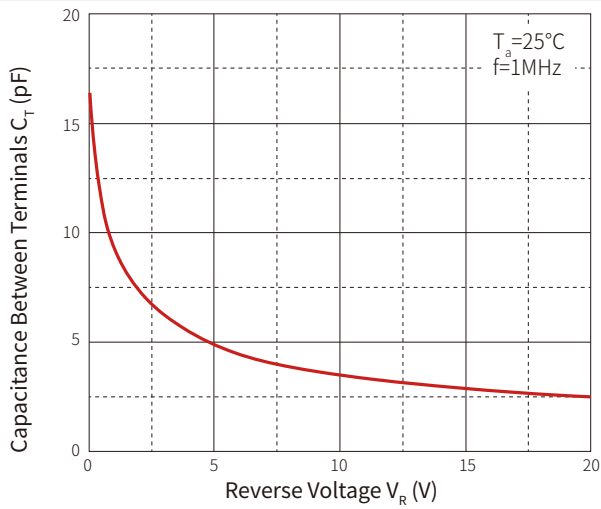
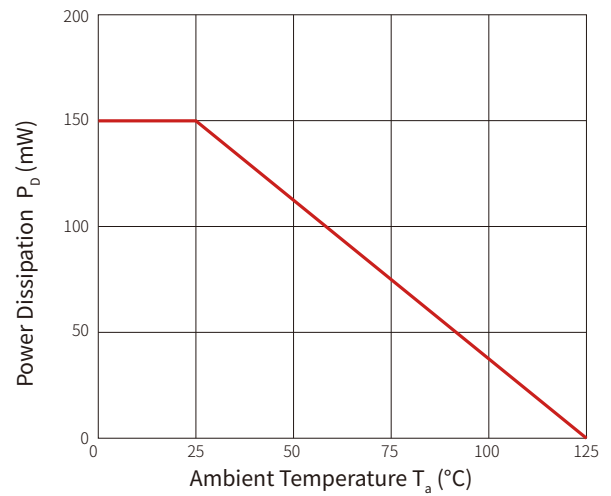
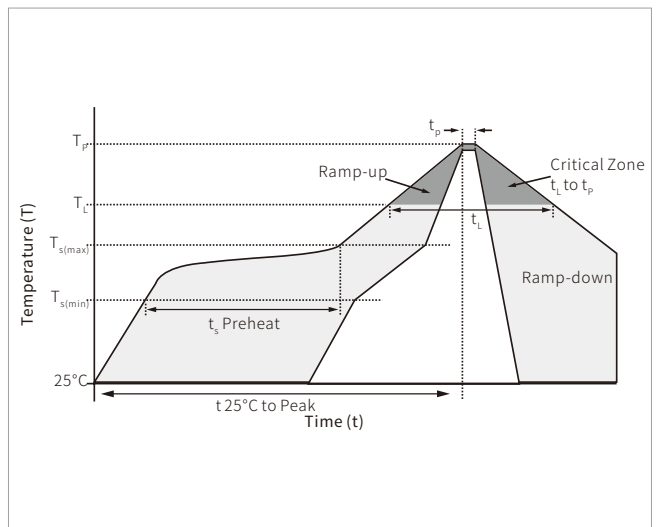


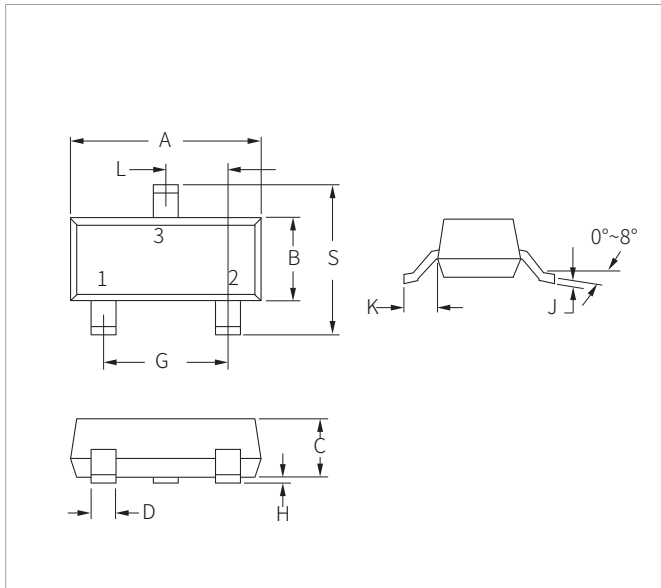
Fig.3 Capacitance Characteristics

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_L)	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 $^\circ\text{C}$

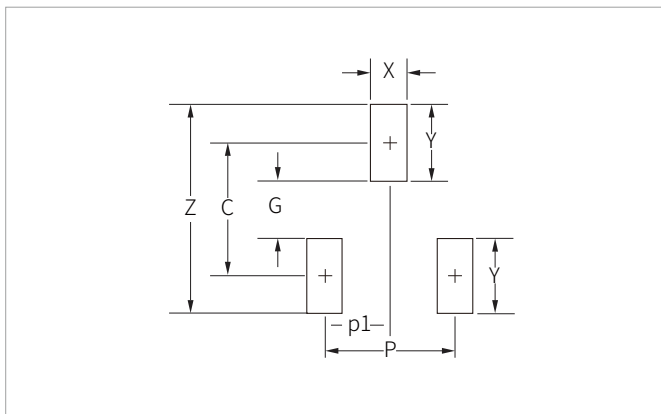


SOT-523 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.70	0.059	0.067
B	0.75	0.85	0.029	0.033
C	0.60	0.80	0.023	0.031
D	0.15	0.30	0.005	0.012
G	1.00BSC		0.039BSC	
H	0.00	0.10	0.000	0.004
J	0.10	0.20	0.004	0.008
K	(0.22)		(0.009)	
L	0.50BSC		0.020BSC	
S	1.45	1.75	0.057	0.069

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
C	(1.40)	(0.055)
P	1.00	0.039
p1	0.50	0.020
G	0.60	0.024
X	0.40	0.016
Y	0.80	0.031
Z	2.20	0.087

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BAT54CT	SOT-523	3000PCS	7"

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By QR Code

Website



Wechat

To find your local partner within Semiware's global website: www.semiware.com

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