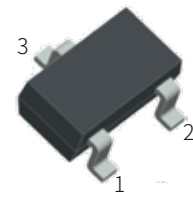


FEATURES

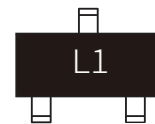
- | Low Forward Voltage Drop
- | Fast Switching
- | PN Junction Guard Ring for Transient and ESD Protection

MECHANICAL DATA

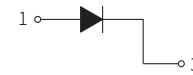
- | SOT-523 Small Outline Plastic Package
- | Epoxy UL: 94V-0
- | Mounting Position: Any



SOT-523



Marking



Schematic Symbol

APPROVALS

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

MAXIMUM RATINGS (T_A=25°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	°C
Storage Temperature Range	T _S	-55 to +150	°C
Average Rectified Output Current	I _O	600	mA
Repetitive Peak Forward Surge Current @t=8.3ms	I _{FSM}	300	mA
Peak Forward Surge Current @tp=1s; δ≤0.5	I _{FRM}	2.0	A
Thermal Resistance From Junction To Ambient	R _{θJA}	600	°C/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

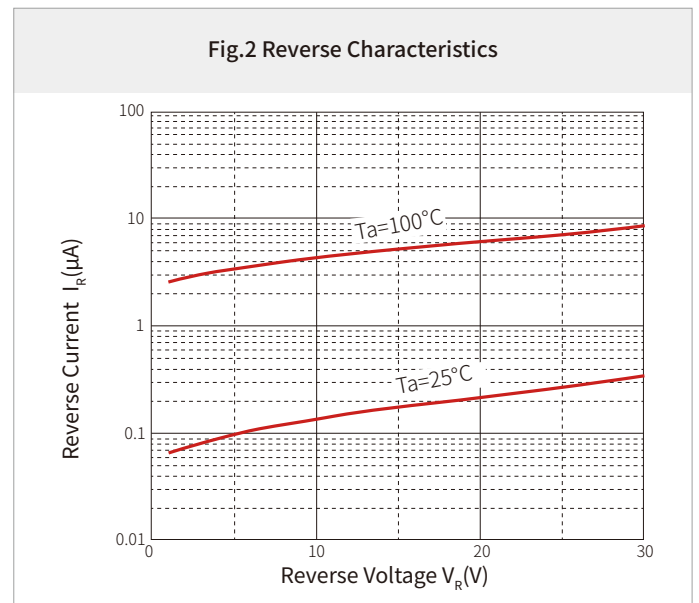
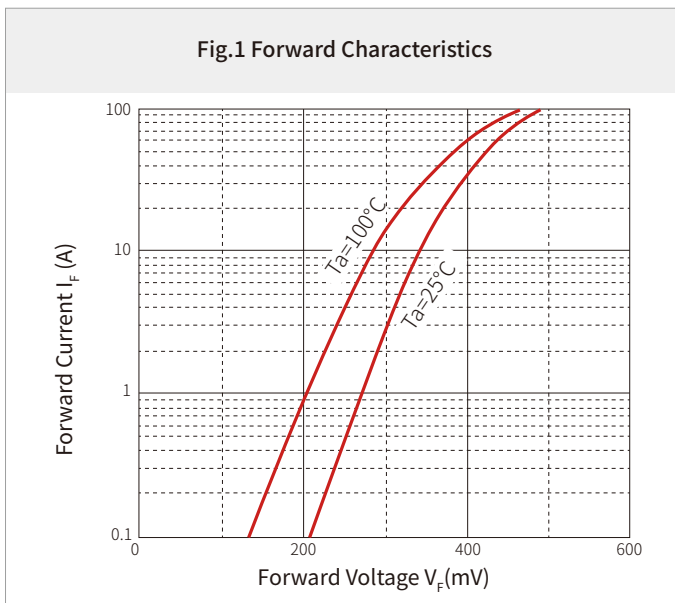
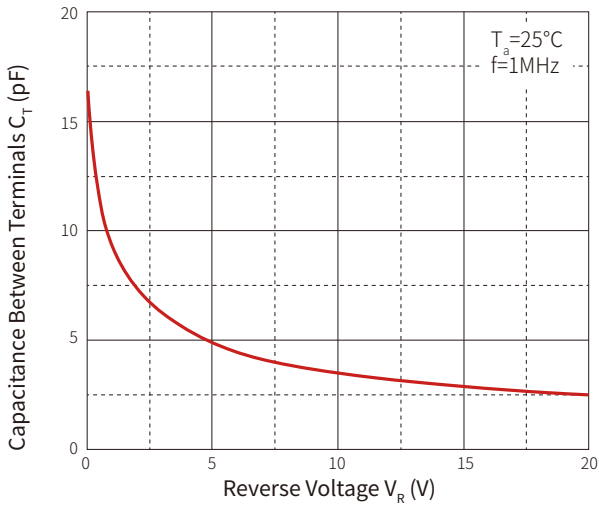
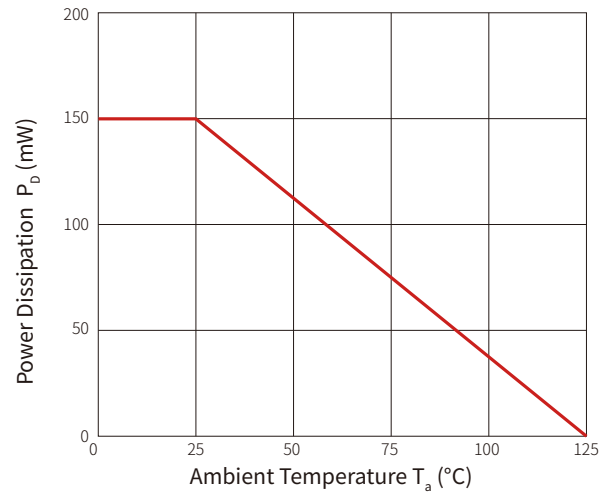
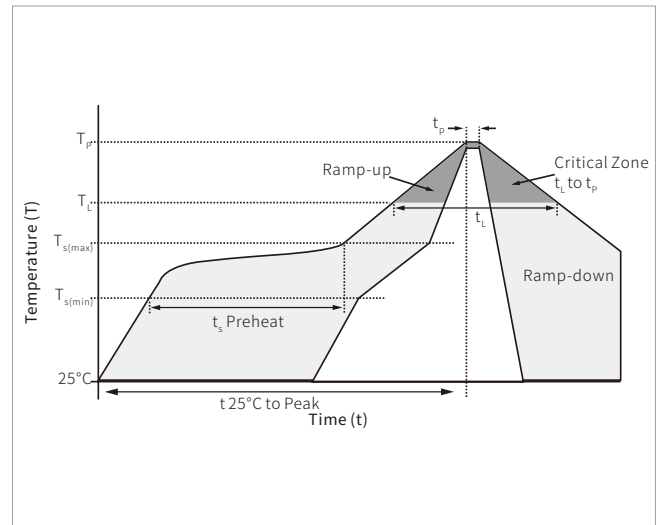


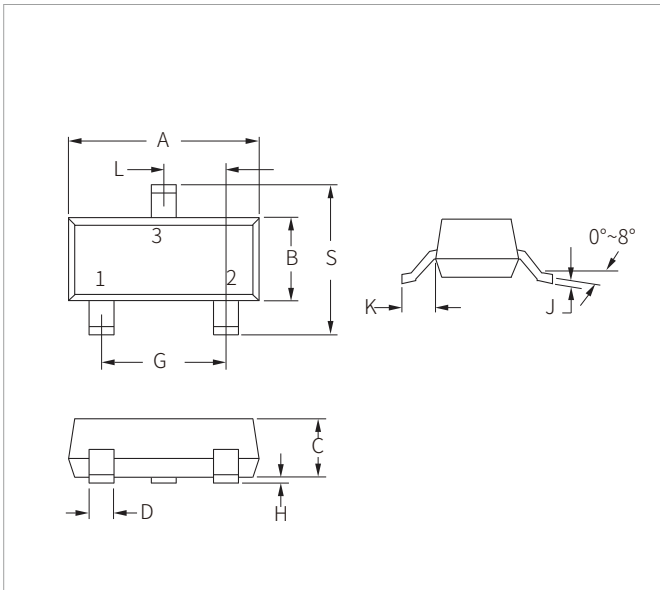
Fig.3 Capacitance Characteristics

Fig.4 Power Derating Curve


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(\text{min})}$)	150 $^\circ\text{C}$
	Temperature Max ($T_{s(\text{max})}$)	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
$T_{s(\text{max})}$ 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 $^\circ\text{C}$

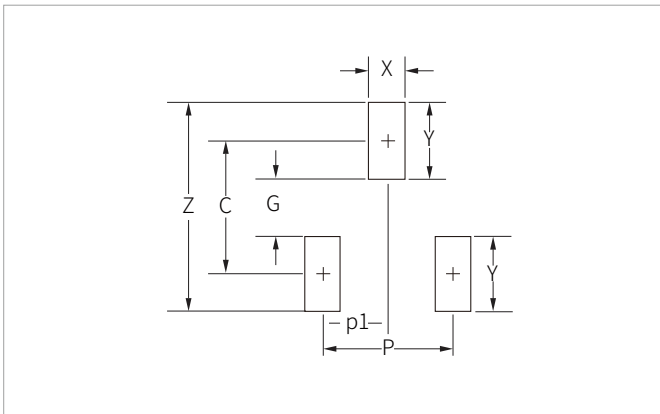


SOT-523 PACKAGE INFORMATION



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
BAT54T	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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