

## FEATURES

- | Fast Switching Device (TRR <4.0 nS)

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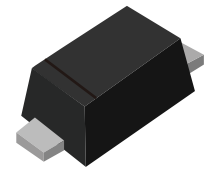
- | Power Dissipation of 150mW

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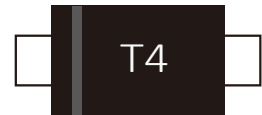
- | High Stability and High Reliability

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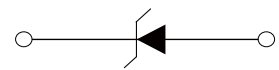
- | Low reverse leakage



SOD-523



Marking



Schematic Symbol

## MECHANICAL DATA

- | Encapsulation: SOD-523 Small Outline Plastic Package

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- | Polarity: Color band denotes cathode end

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- | Mounting Position: Any

## 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 Voltage	$V_R$	75	V
Peak Reverse Voltage	$V_{RM}$	100	V
Power Dissipation	Pd	150	mW
Working Inverse Voltage	$W_{IV}$	75	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$
Average Rectified Current	$I_o$	150	mA
Non-repetitive Peak Forward Current	$I_{FM}$	300	mA
Peak Forward Surge Current @tp=1us; $T_A=25^{\circ}\text{C}$	$I_{FSM}$	2.0	A
Operating junction temperature range	$T_J$	150	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to 150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Breakdown Voltage	B <sub>V</sub>	I <sub>R</sub> =100μA	100			V
		I <sub>R</sub> =5μA	75			V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> =20V			25	nA
		V <sub>R</sub> =75V			1	μA
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =1.0mA			0.715	V
		I <sub>F</sub> =10mA			0.855	V
		I <sub>F</sub> =50mA			1.00	V
		I <sub>F</sub> =150mA			1.25	V
Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz			2	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>			4	nS

## CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

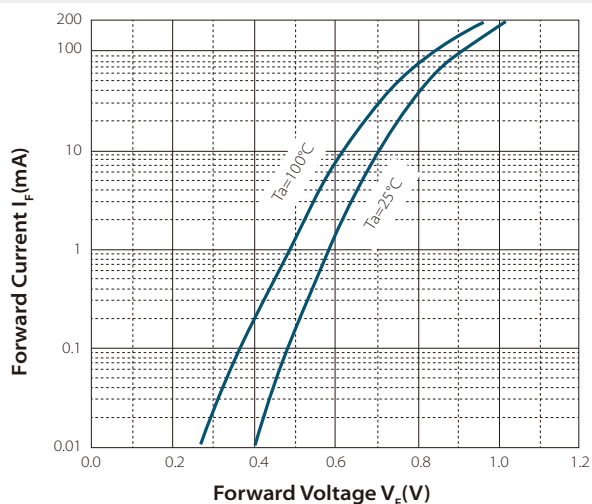
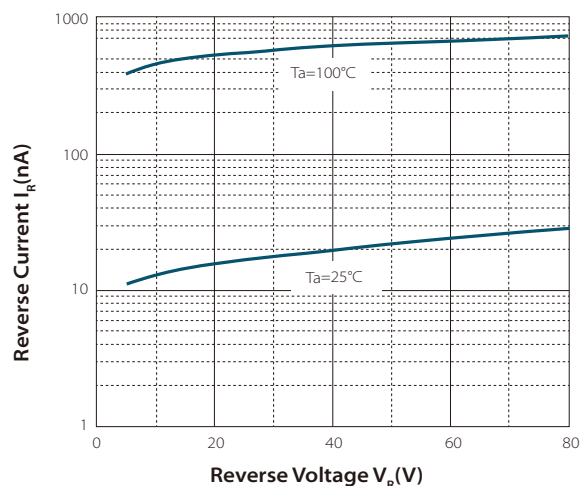
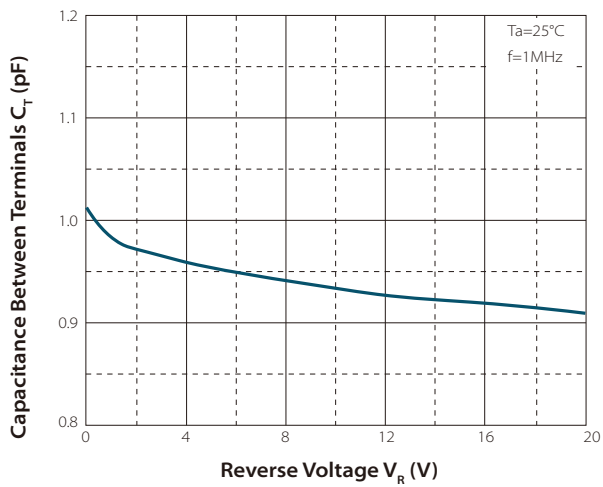
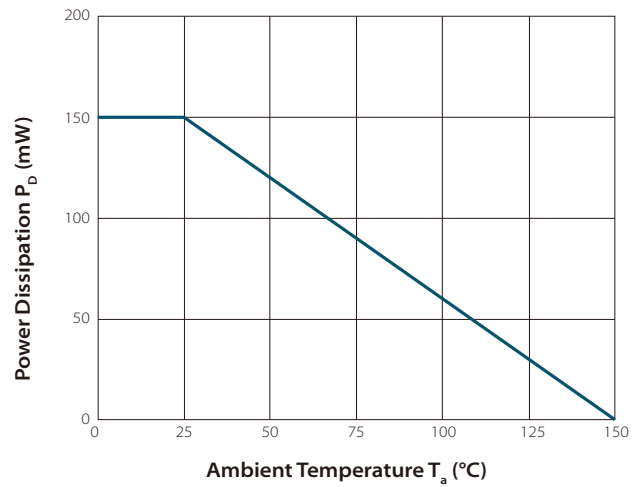


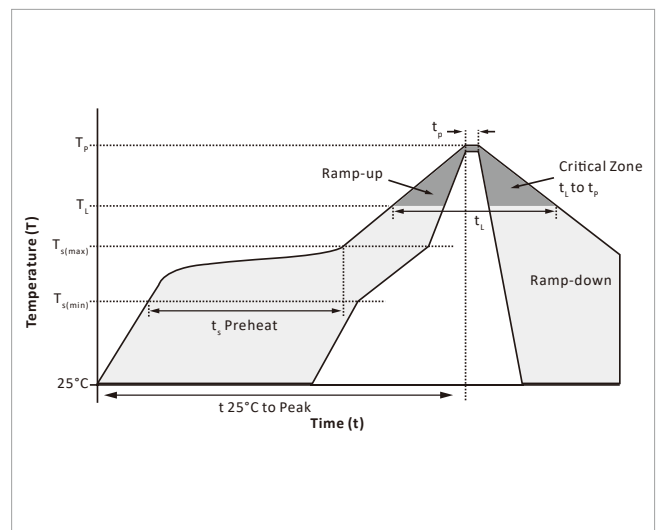
Fig.2 Reverse Characteristics



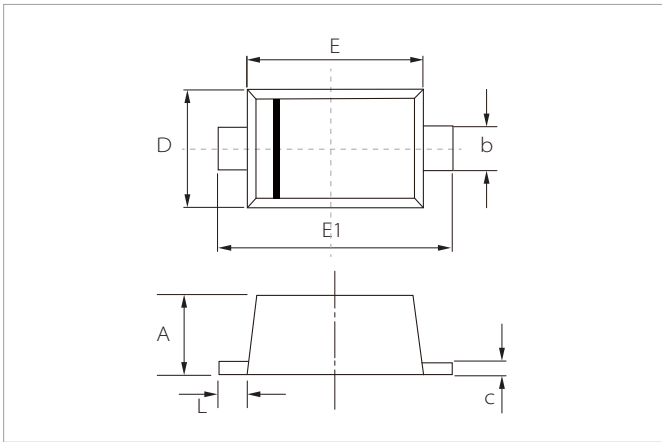
**Fig.3 Capacitance Characteristics**

**Fig.4 Power Derating Curve**


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°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) ( $t_r$ )	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

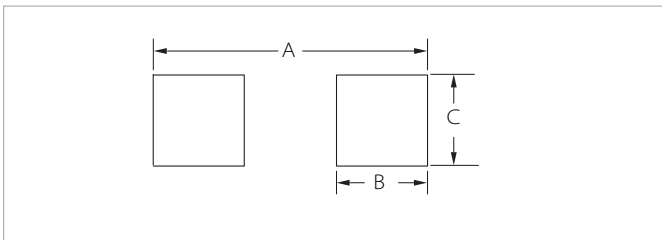


## SOD-523 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.50	0.80	0.020	0.031
b	0.25	0.35	0.010	0.014
c	0.07	0.20	0.003	0.008
D	0.70	0.90	0.028	0.035
E	1.10	1.30	0.043	0.051
E1	1.50	1.70	0.059	0.067
L	0.15	0.25	0.006	0.010

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
	Min.	Min.
A	2.00	0.0787
B	0.60	0.0236
C	0.70	0.0276

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
1N4148WT	SOD-523	3000PCS	7"

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

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