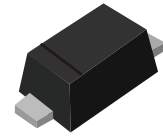


## FEATURES

- | SOD-523 Package
- | Epoxy meets UL-94 V-0 flammability rating and halogen free
- | Moisture Sensitivity Level 3



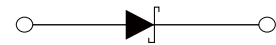
SOD-523

## APPLICATIONS

- | Extreme fast switches
- | Automotive



Marking



Schematic Symbol

## 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
Non-repetitive peak reverse voltage	V <sub>RM</sub>	30	V
DC blocking voltage	V <sub>R</sub>	21	V
Average rectified output current	I <sub>O</sub>	100	mA
Forward continuous current	I <sub>F</sub>	200	mA
Repetitive peak forward current	I <sub>FRM</sub>	300	mA
Non-Repetitive Peak Forward Surge Current @t=8.3ms; TA=25°C	I <sub>FSM</sub>	600	mA
Power Dissipation	P <sub>D</sub>	150	mW
Thermal Resistance Junction to Ambient Air	R <sub>θJA</sub>	667	°C/W
Operating Junction Temperature	T <sub>J</sub>	-40-+125	°C
Storage Temperature Range	T <sub>STG</sub>	-50-+150	°C

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Voltage Leakage Current	$I_R$	$V_R=25\text{V}$			2.0	$\mu\text{A}$
Reverse breakdown voltage	$V_{BR}$	$I_R=100\mu\text{A}$	30			V
Forward Voltage	$V_F$	$I_F=0.1\text{mA}$			240	mV
		$I_F=1.0\text{mA}$			320	
		$I_F=10\text{mA}$			400	
		$I_F=30\text{mA}$			500	
		$I_F=100\text{mA}$			1000	
Reverse recovery time	$t_{rr}$	$I_F=10\text{mA}$ , $I_R=10\text{mA}$ to $1\text{mA}$ , $R_L=100\Omega$			5.0	ns
Capacitance between terminals	$C_T$	$V_R=1\text{V}$ , $f=1\text{MHz}$			10	pF

## CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

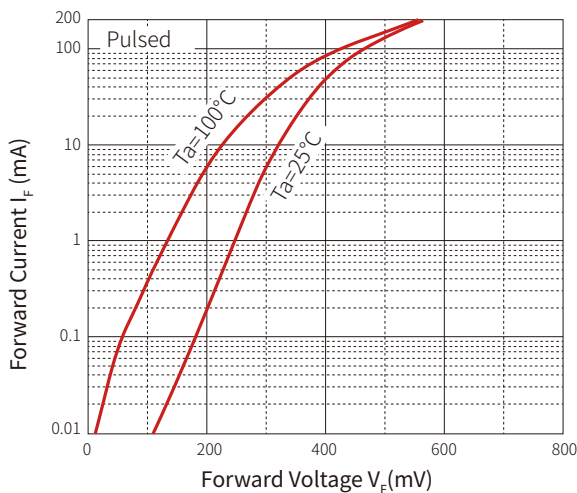
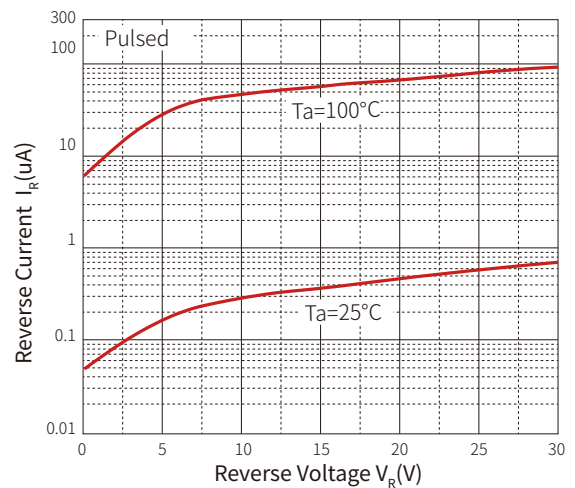
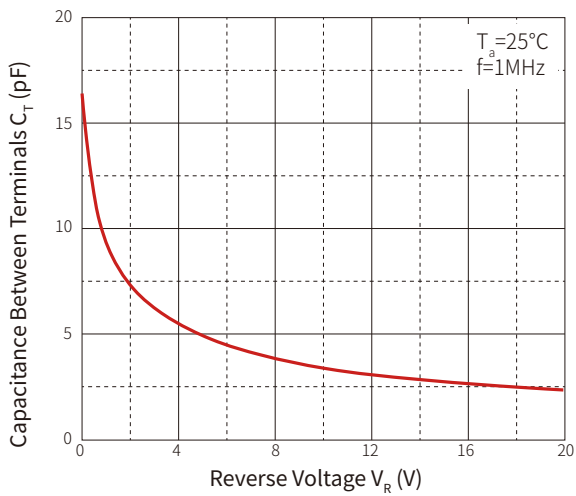
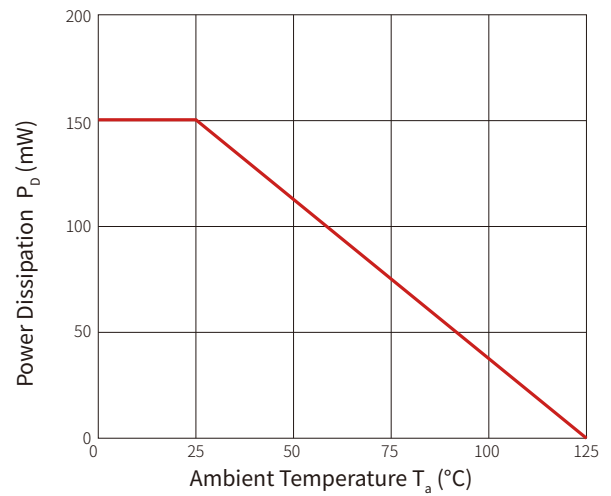


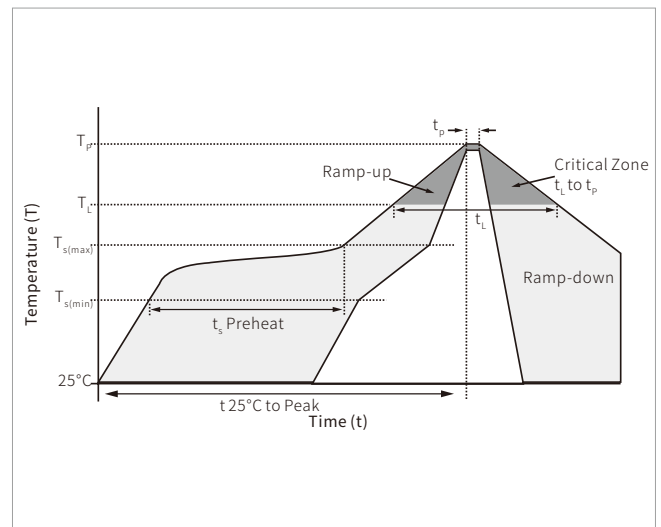
Fig.2 Reverse Characteristics



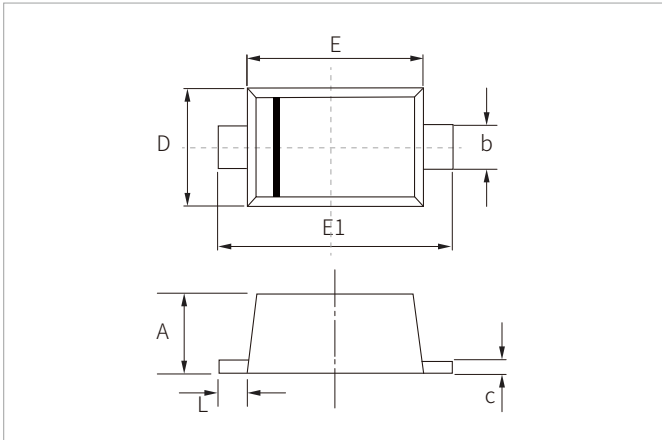
**Fig.3 Capacitance Characteristics**

**Fig.4 Power Derating Curve**


## SOLDERING PARAMETERS

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

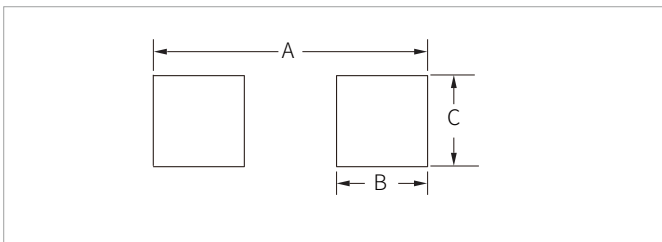


## SOD-523 PACKAGE INFORMATION



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
BAT54X	SOD-523	3000PCS	7"

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