

FEATURES

- | SOD-123 Package
- | Epoxy meets UL-94 V-0 flammability rating and halogen free
- | Meet AEC-Q101 Requirements



SOD-123

APPLICATION

- | Extreme fast switches
- | Automotive



Marking



Schematic Symbol

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
Repetitive peak reverse voltage	V_{RRM}	100	V
Average forward current	$I_{F(AV)}$	200	mA
Peak forward surge current($t_p=1\mu s$)	I_{FSM}	2	A
Power dissipation	P_D	500	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	$^{\circ}\text{C}/\text{W}$
Operating junction temperature range	T_J	-55 ~ +150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-65 ~ +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Breakdown Voltage	V_R	$I_R=100\mu\text{A}$	100			V
		$I_R=5\mu\text{A}$	75			V
Reverse Current	I_R	$V_R=20\text{V}$			0.025	μA
		$V_R=75\text{V}$			2.5	μA
Forward Voltage	V_F	$I_F=5\text{mA}$			0.72	V
		$I_F=10\text{mA}$		0.72	0.855	V
		$I_F=100\text{mA}$		0.93	1.00	V
		$I_F=150\text{mA}$			1.25	V
Diode Capacitance	C_J	$V_R=V_F=0\text{V}$, $f=1\text{MHz}$			4	pF
Reverse Recovery Time	t_{rr}	$I_F=10\text{mA}$, $R_L=100\Omega$, $I_{RR}=0.1\times I_R$			4	ns

CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

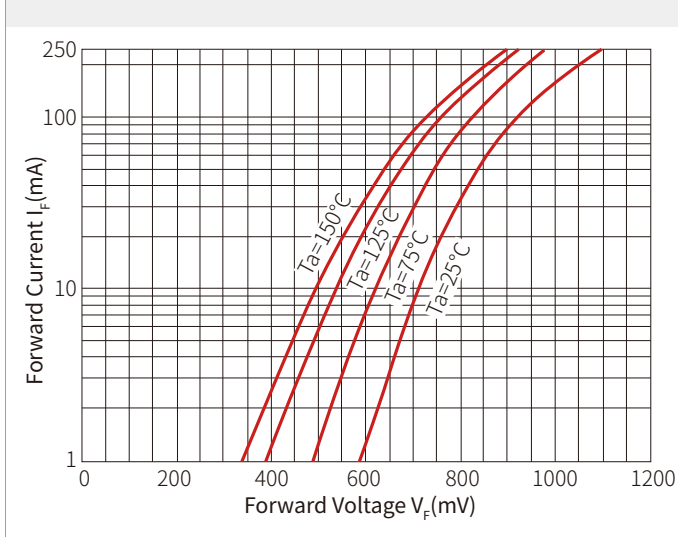


Fig.2 Reverse Characteristics

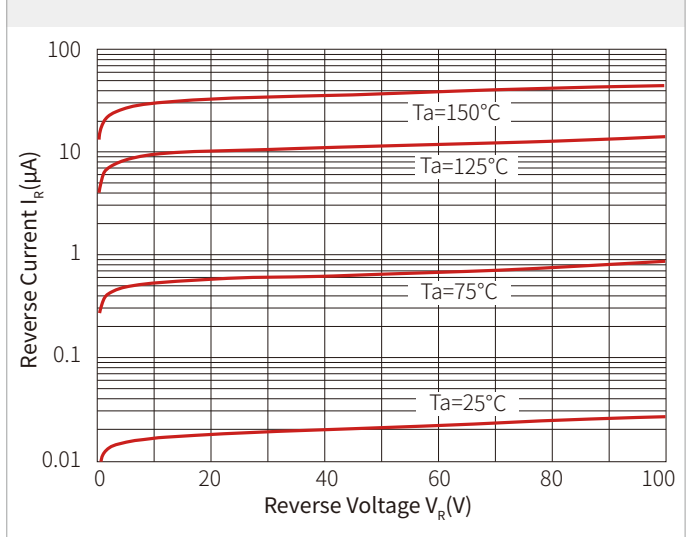
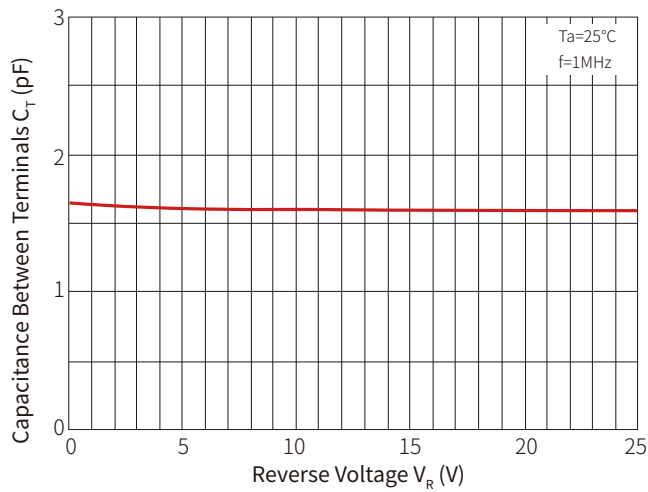
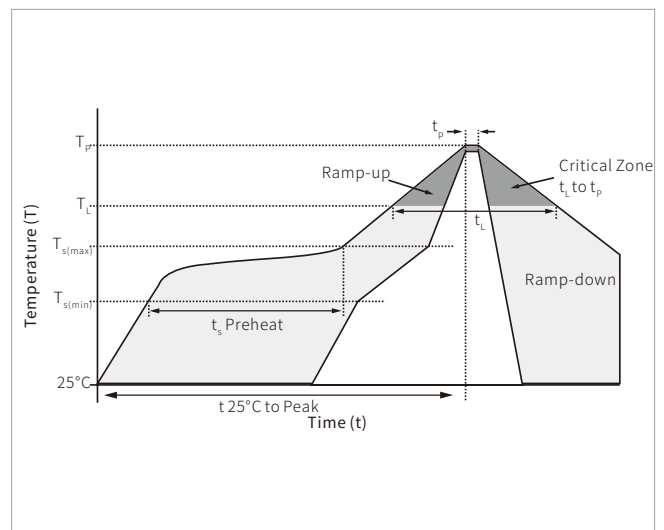


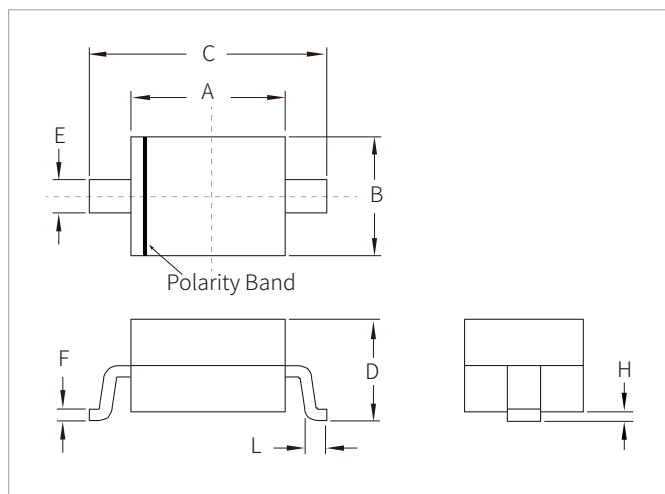
Fig.3 Capacitance Characteristics


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

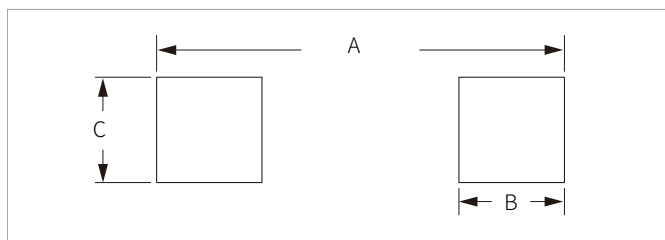


SOD-123 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	2.80	0.102	0.110
B	1.50	1.70	0.059	0.067
C	3.55	3.85	0.140	0.152
D	1.05	1.25	0.041	0.049
E	0.45	0.65	0.018	0.026
F	0.08	0.15	0.003	0.006
H	0.00	0.10	0.000	0.004
L	0.25	0.45	0.010	0.018

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.19	3.29	0.126	0.130
B	0.75	0.85	0.030	0.033
C	0.95	1.05	0.037	0.041

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
1N4448WQ	SOD-123	3000PCS	7"

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