

FEATURES

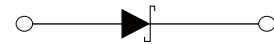
- High Current Capability
- Low Forward Voltage Drop



SOD-123

MECHANICAL DATA

- SOD-123 Small Outline Plastic Package
- Polarity: Color Band Denotes Cathode End
- Mounting Position: Any



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	SD103AW	SD103BW	SD103CW	Unit
Marking		S4	S5	S6	
Peak Repetitive Reverse Voltage	V_{RRM}	40	30	20	V
Rms Reverse Voltage	$V_{R(RMS)}$	28	21	14	V
Maximum DC Blocking Voltage	V_{DC}	40	30	20	V
Maximum Average Forward Rectified Current	I_{FM}	350			mA
Peak Forward Surge Current 8.3ms Single Half Sine-wave	I_{FSM}	2			A
Power Dissipation	P_D	400			mW
Typical Thermal Resistance	$R_{\theta JA}$	250			$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature	T_J	125			$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-50~+150			$^{\circ}\text{C}$

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

Parameter		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Maximum Forward Voltage		V_F	$I_F=20\text{mA}$			0.370	V
			$I_F=200\text{mA}$			0.600	V
Reverse Breakdown Voltage	SD103AW	V_R	$I_R=100\mu\text{A}$			40	V
	SD103BW					30	V
	SD103CW					20	V
Reverse Leakage Current	SD103AW	I_R	$V_R=30\text{V}$			5.0	μA
	SD103BW		$V_R=20\text{V}$				
	SD103CW		$V_R=10\text{V}$				
Type Junction Capacitance		C_J	$V_R=0\text{V}, f=1\text{MHz}$		50		pF
Reverse Recovery Time		T_{RR}	$I_F=I_R=200\text{mA}, R_L=100\Omega$ $I_{RR}=0.1 \times I_R$		10		nS

CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

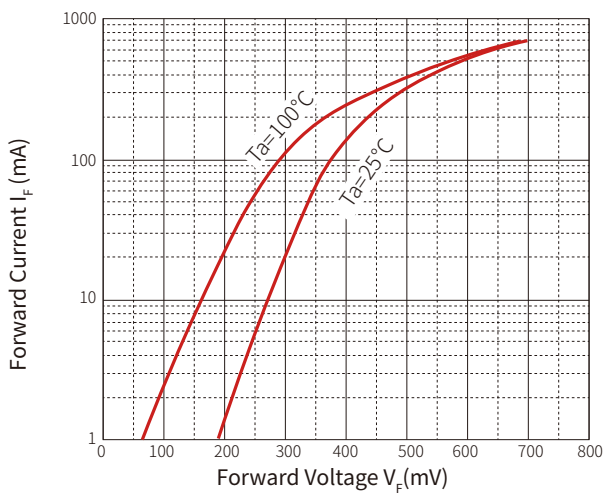


Fig.2 Reverse Characteristics

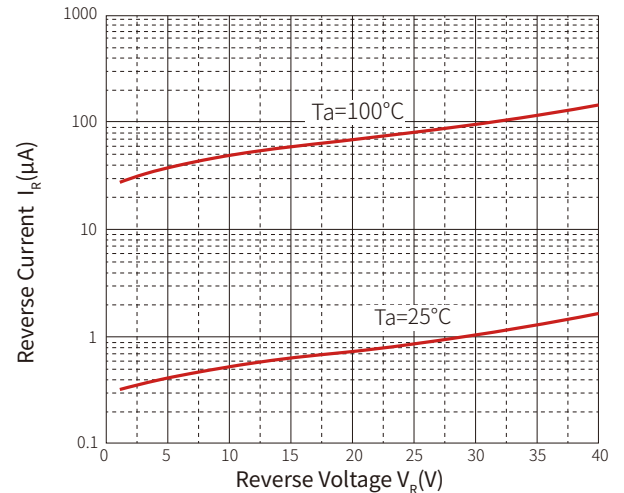
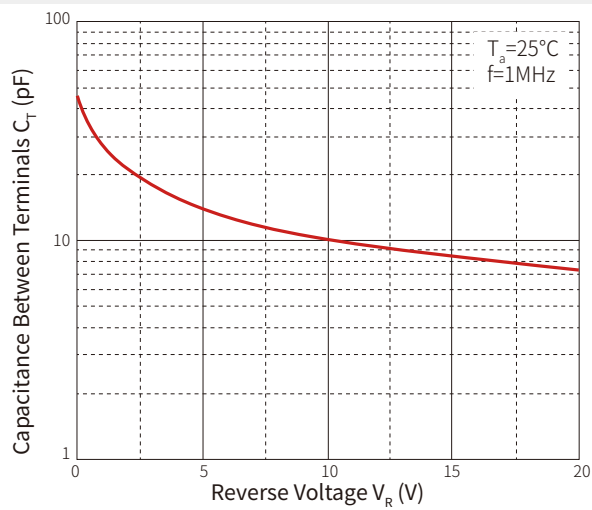
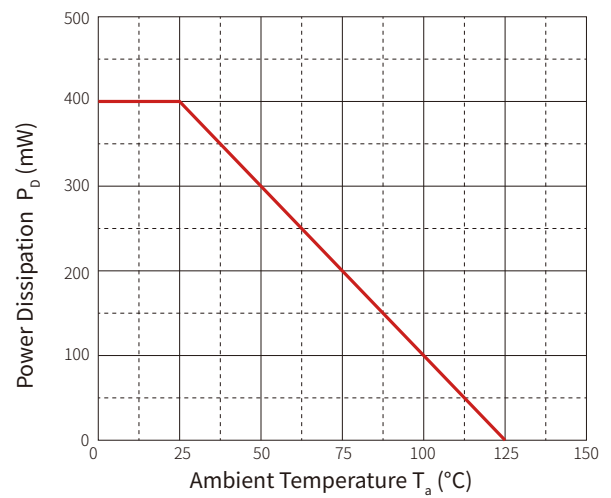
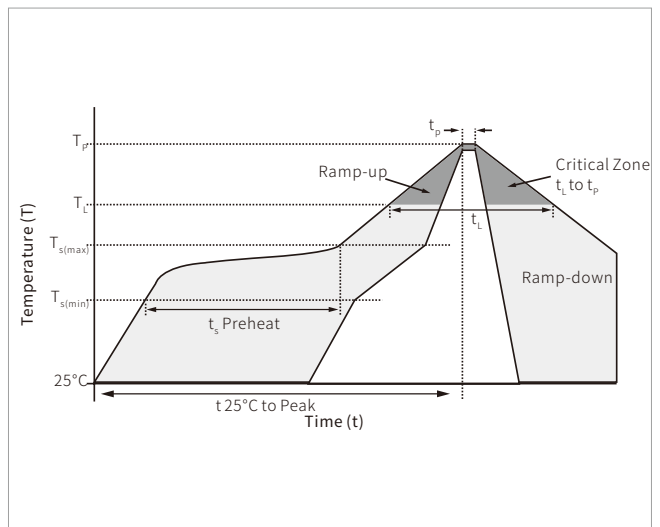


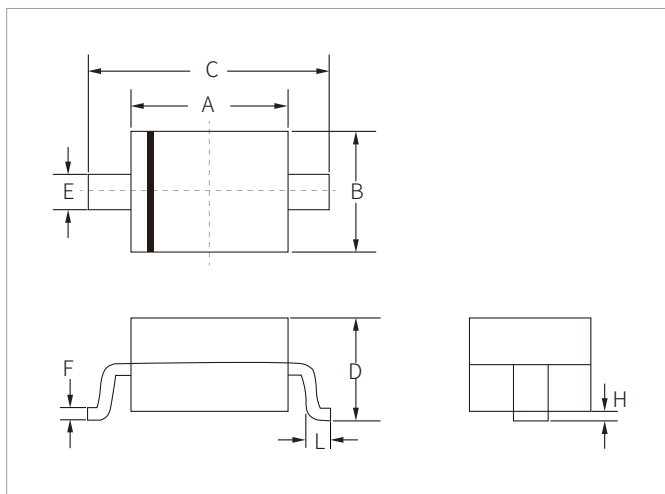
Fig.3 Capacitance Characteristics

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 $^\circ\text{C}$

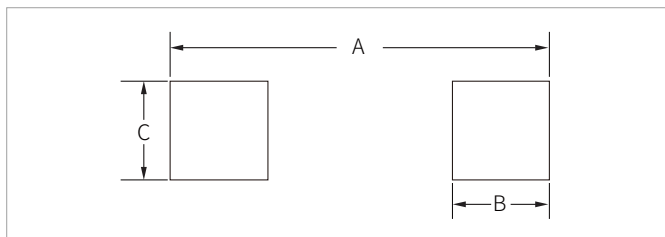


SOD-123 PACKAGE INFORMATION



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	4.00	4.30	0.157	0.169
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
SD103AW/BW/CW	SOD-123	3000PCS	7"

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