

VOLTAGE RANGE

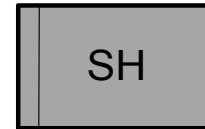
20 Volts

CURRENT

2.0 Ampere

FEATURES

Low Forward Voltage Drop
Very Small SMD Package



APPLICATIONS

Low Voltage Rectification
High Efficiency DC/DC Conversion
Switch Mode Power Supply
Inverse Polarity Protection
Low Power Consumption Applications

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit	
V_{RRM}	Peak Repetitive Reverse Voltage	20	V	
V_{RWM}	Working Peak Reverse Voltage			
$V_{R(RMS)}$	RMS Reverse Voltage	14	V	
I_F	Continuous Forward Current	2	A	
I_{FSM}	Non-repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	9	A	
P_D	Power Dissipation	Note1	250	mW
		Note2	480	
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	Note1	400	$^\circ\text{C/W}$
		Note2	208	
T_j	Operating Junction Temperature Range	-40 ~ +125	$^\circ\text{C}$	
T_{stg}	Storage Temperature Range	-55 ~ +150	$^\circ\text{C}$	

1: Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

2: Device mounted on an FR4 PCB with copper pad 10 x 10 mm.

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse breakdown voltage	$V_{(BR)}$	$I_R=1\text{mA}$	20			V
Reverse current	I_R	$V_R=10\text{V}$			80	μA
		$V_R=20\text{V}$			100	
Forward voltage	V_F^*	$I_F=1\text{A}$			0.45	V
		$I_F=2\text{A}$			0.55	
Total capacitance	C_{tot}	$V_R=4\text{V}, f=1\text{MHz}$			120	pF

*Pulse test: $t_p \leq 300 \mu\text{s}$; $\delta \leq 0.02$.

RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

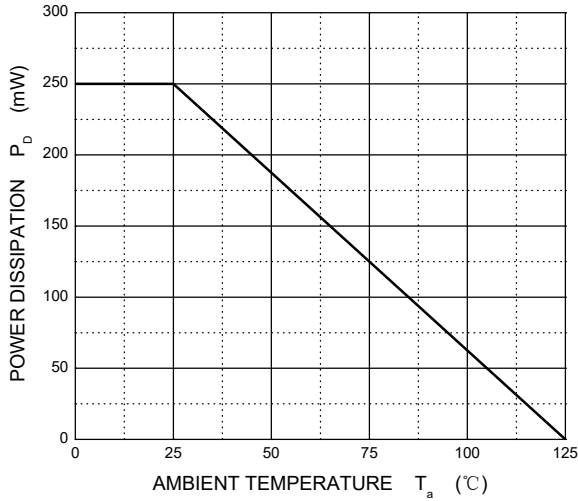


FIG.2-TYPICAL FORWARD CHARACTERISTICS

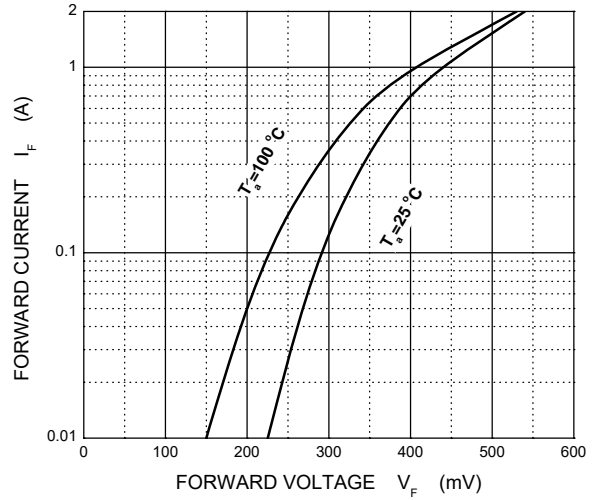


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

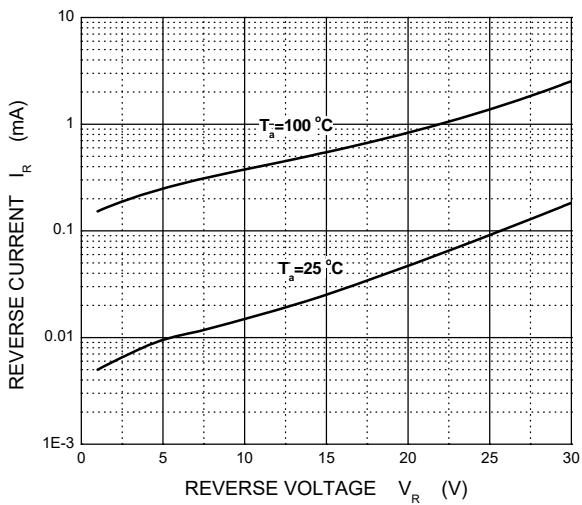
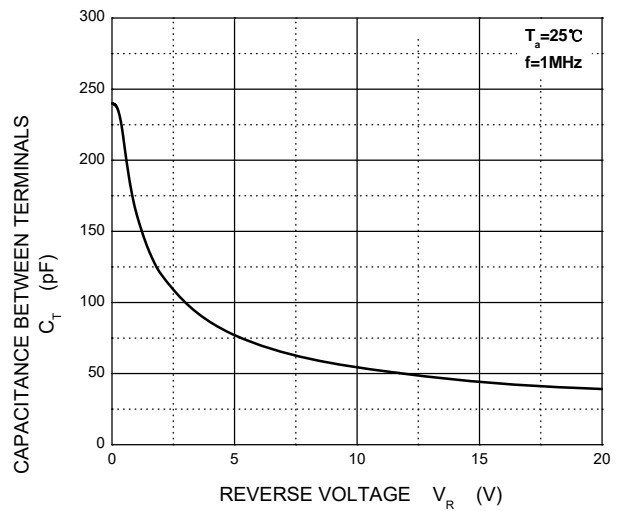


FIG.4-TYPICAL JUNCTION CAPACITANCE



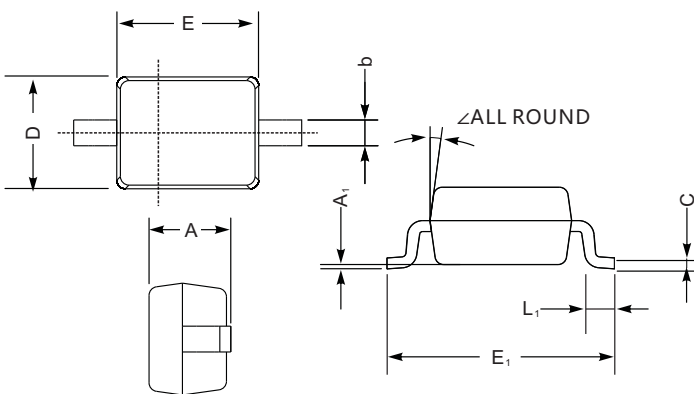
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



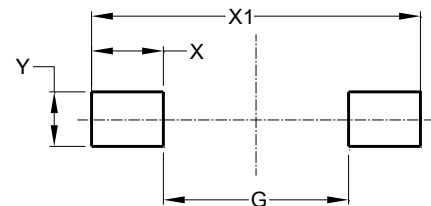
Package Dimensions & Suggested Pad Layout

SOD323



SOD-323 mechanical data

UNIT		A	C	D	E	E ₁	b	L ₁	A ₁	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	63	100	9.8	7.9	—	



Dimensions	Value (in mm)
G	1.40
X	1.20
X1	3.80
Y	1.00

Tape & reel specification

Tape		Symbol	Dimension (mm)		
		P0	4.00±0.20		
		P1	4.00±0.20		
		P2	2.00±0.20		
		D0	1.55±0.20		
		D1	1.00±0.20		
		E	1.55±0.25		
		F	3.60±0.20		
		W	8.00±0.20		
		A0	2.00±0.20		
		B0	3.25±0.20		
		K0	1.35±0.20		
		T	0.23±0.10		
		7" Reel		D2	177.0±5.0
				D3	55Min.
D4	R24.6±2.0				
G	R82.0±2.0				
I	13.0±2.0				
W1	10.20±3.0				
Quantity: 3000PCS					