

SD103AWS THRU SD103CWS
Small Signal Schottky Barrier Rectifiers



Voltage: 20~40 Volts

Power: 200 mW

Package: SOD-323

Features

- NH'S Small Signal Schottky Barrier Chip Technology
- Low Forward Voltage Drop For High Efficiency
- Small Package
- Low Cost

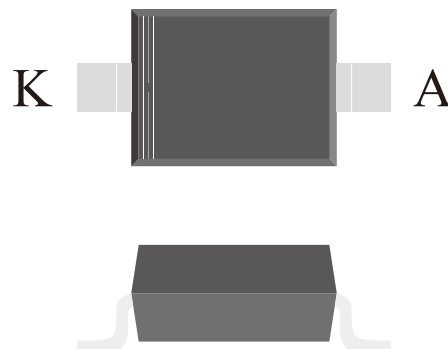
Mechanical Data

- Case:** Molded With UL-94 ClassV-0 Recognized, RoHS-Compliant
- Polarity:** Look At The Diagram And Polarity On The Right
- Terminals:** Tin Plated Leads,Solderable Per J-STD-002 And JESD22-B102

Typical Applications

- Small Signal Control Circuit
- Auxiliary Control Circuit
- Switch Mode Power Supplies (SMPS)
- LED Driver

Diagram:



Polarity:



Single Phase,Half Wave,60Hz,Resistive Or Inductive Load.For Capacitive Load,Derate Current By 20%

Maximum Ratings (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	SD103 AWS	SD103 BWS	SD103 CWS	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	40	30	20	V
Maximum RMS Voltag		V_{RMS}	28	21	14	V
Maximum Non-Repetitive Peak Reverse Voltage		V_{NRM}	40	30	20	V
Maximum Average Forward Rectified		$I_{F(AV)}$	0.35			A
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	2			A
Power Dissipation		P_D	200			mW

Electrical Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	SD103 AWS	SD103 BWS	SD103 CWS	Unit
Maximum Instantaneous Forward Voltage	$I_F = 0.02$ A	V_F	0.37	0.37	0.37	V
	$I_F = 0.2$ A		0.60	0.60	0.60	
Maximum DC Reverse Current at Rated DC Blocking Voltage	Ta=25°C , $V_R = V_{RRM}$	I_{RRM}	5			uA
	Ta=100°C , $V_R = V_{RRM} * 80\%$		1			mA
Typical Junction Capacitance	4 V,1MHz	C_T	50			pF

Thermal Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	SD103 AWS	SD103 BWS	SD103 CWS	Unit
Operating Junction Temperature Range		T_J	-55	to	125	°C
Storage Temperature Range		T_{STD}	-55	to	125	
Thermal Resistance Junction-Case With Steady-State	Device Mounted On 1 in2 FR-4 Board With 2oz. Copper	$R_{\theta JA}$	500			°C/W

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Typical Characteristics Curves

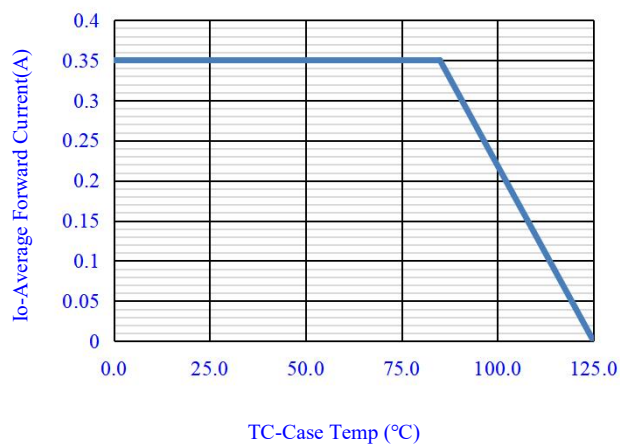


Fig.1-Forward Current Derating Curve

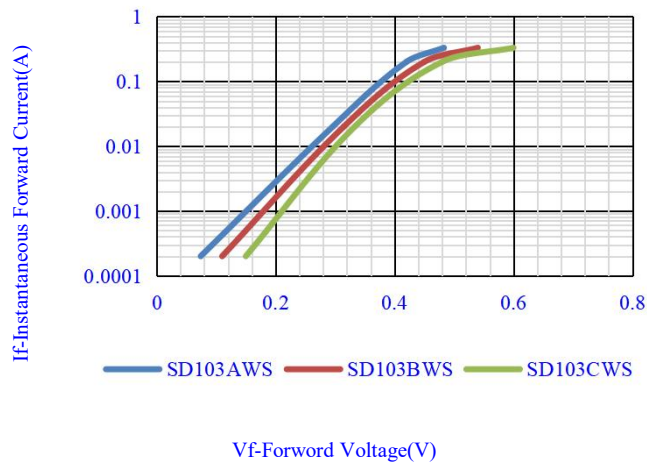


Fig.2-Typical Instantaneous Forward

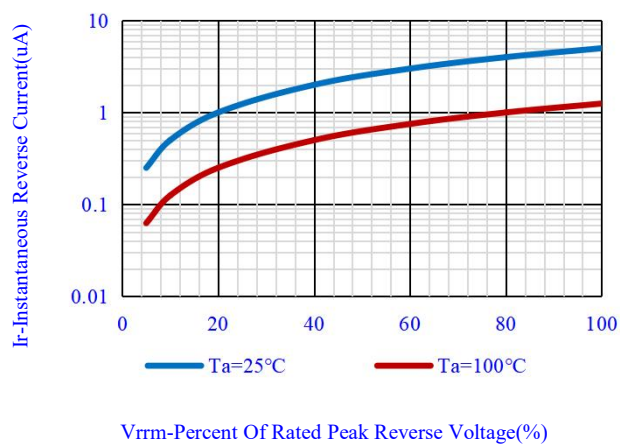


Fig.3-Typical Reverse Characteristics

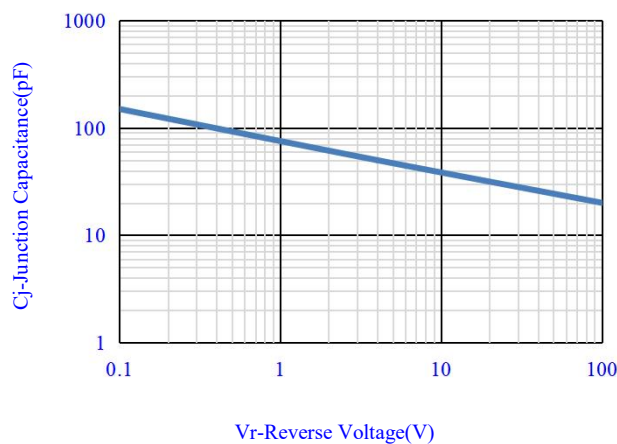


Fig.4- Typical Junction Capacitance

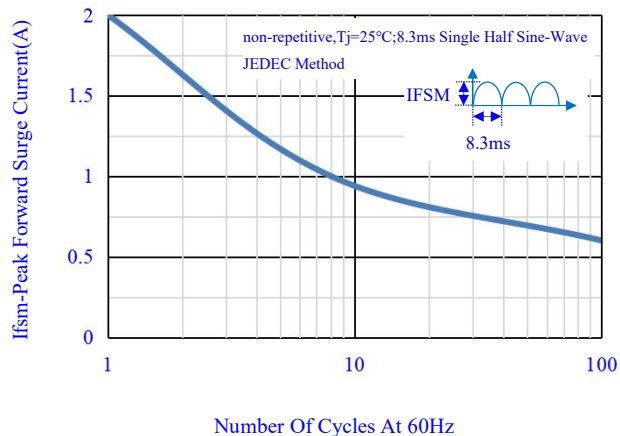


Fig.5-Max. Non-Repetitive Surge Current

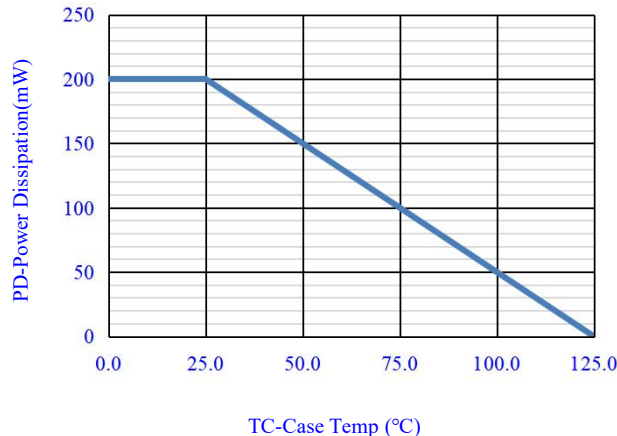


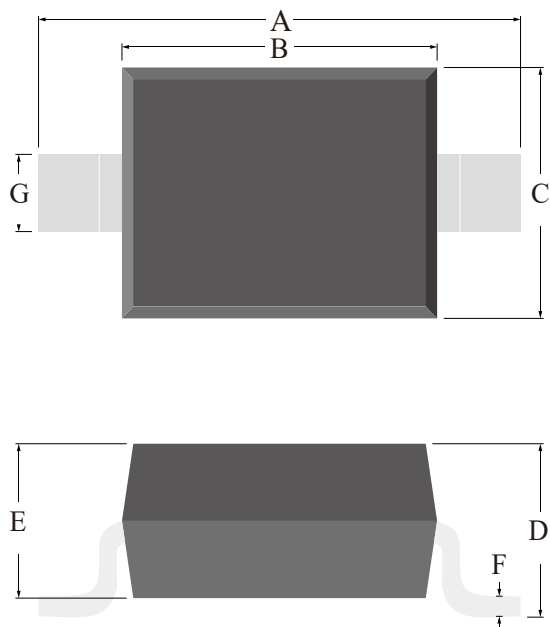
Fig.6-Power Dissipation Vs. Ambient Temp.

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OUTLINE DRAWINGS

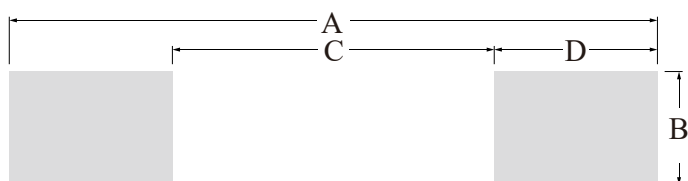
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OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.40	-	2.70	0.0945	-	0.1063
B	1.55	-	1.85	0.0610	-	0.0728
C	1.15	-	1.45	0.0453	-	0.0571
D	0.75	-	1.10	-	-	0.0433
E	0.70	-	1.00	0.0276	-	0.0394
F	-	0.10	-	-	0.0039	-
G	0.25	-	0.55	0.0098	-	0.0217

RECOMMENDED LAYOUT DRAWINGS

SOD-323

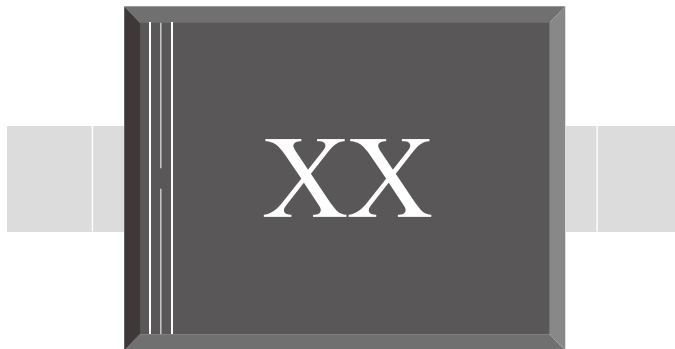


OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	2.90	-	-	0.1142	-
B	--	0.50	--	--	0.0197	--
C	--	1.44	--	--	0.0567	--
D	--	0.73	--	--	0.0287	--

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MARKING



MARKING INSTRUCTION

XX=Model,SD103AWS=S4,SD103BWS=S5,SD103CWS=S6
White band denotes cathode

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
SOD-323	P1	0.0041	7" Reel	3000	45000	180000

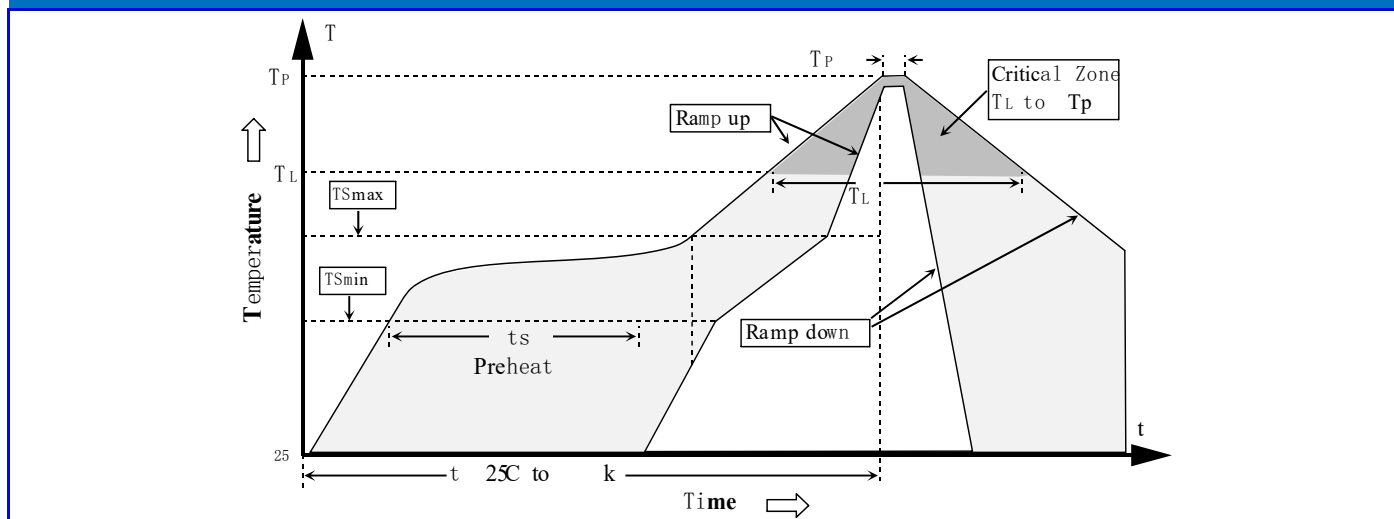
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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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