S5AB THRU S5MB

General Purpose Rectifiers

Pb-Free RoHS COMPLIANT

Voltage: 50~1000 Volts | **Current:** 5 A | **Package:** SMB

Features

- NH'S Standard Rectifier Chip Technology
- Low Forward Voltage Drop For High Efficiency
- Low Leakage Current For High Reliability
- High Surge Capability For High Reliability

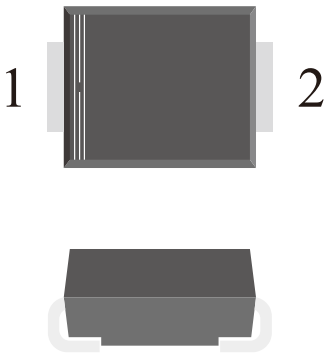
Mechanical Data

- **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

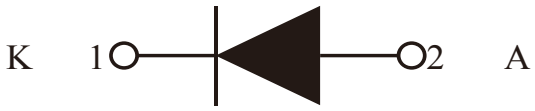
Typical Applications

- Switch Mode Power Supplies (SMPS)
- Fast Chargers
- LED Driver And Monitor Lighting
- Automotive Electronics And Charging Posts

Diagram:



Polarity:



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

Maximum Ratings (Ta=25℃ Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	S5 AB	S5 BB	S5 DB	S5 GB	S5 JB	S5 KB	S5 MB	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltag		V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage		V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current		$I_{F(AV)}$	5							A
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	150							A
Current Squared Time	t< 8.3ms	I^2t	93.4							A^2sec

Electrical Characteristcs (Ta=25℃ Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	S5 AB	S5 BB	S5 DB	S5 GB	S5 JB	S5 KB	S5 MB	Unit
Maximum Instaneous Forward Voltage	I_F= 5 A	V_F	1.1							V
Maximum DC Reverse Current at Rated DC Blocking Voltage	Ta=25℃ ,V_R=VRRM Ta=125℃ ,V_R=VRRM*80%	I_{RRM}	5 200							uA uA
Typical Junction Capacitance	4 V,1MHz	C_J	35							pF

Thermal Characteristcs (Ta=25℃ Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	S5 AB	S5 BB	S5 DB	S5 GB	S5 JB	S5 KB	S5 MB	Unit
Operating Junction Temperature Range		T_J	-55~150							℃
Storage Temperature Range		T_{STD}	-55~150							℃
Thermal Resistance Junction To Ambient With Steady-State	Still Air Environment With Ta=25℃	$R_{\theta JA}$	80.0							℃/W
Thermal Resistance Junction-Case With Steady-State	Device Mounted On 1 in2 FR-4 Board With 2oz. Copper	$R_{\theta JC}$	30.0							℃/W

Notes: 1.Pulse Test: 300 Us Pulse Width,1% Duty Cycle

S5AB THRU S5MB

General Purpose Rectifiers

Pb Pb-Free RoHS COMPLIANT

Typical Characteristics Curves

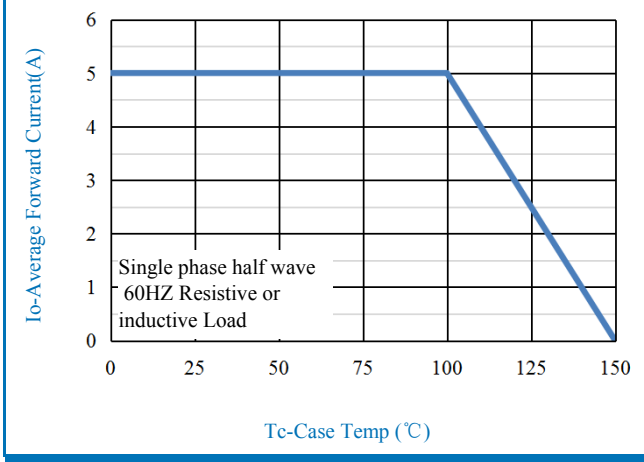


Fig.1-Forward Current Derating Curve

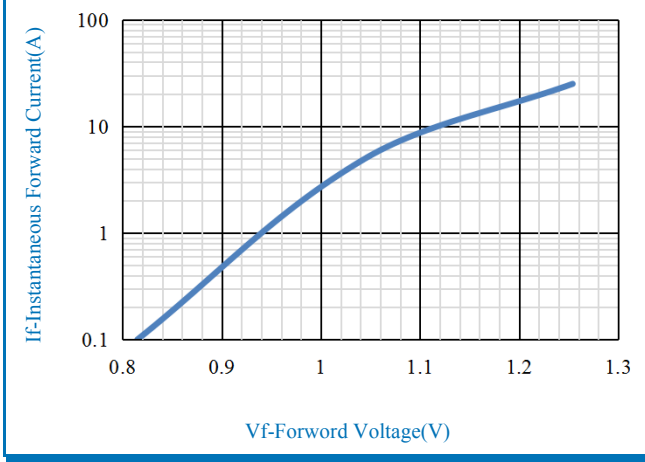


Fig.2-Typical Instantaneous Forward

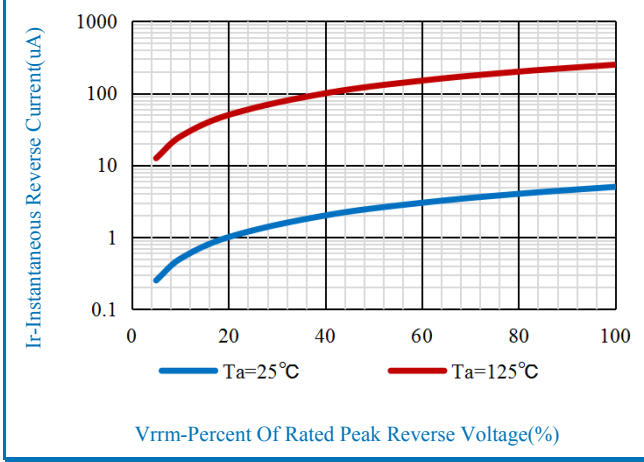


Fig.3-Typical Reverse Characteristics

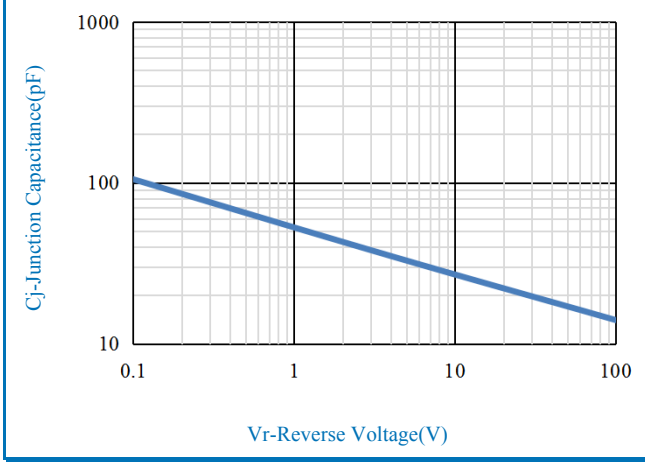


Fig.4-Typical Junction Capacitance

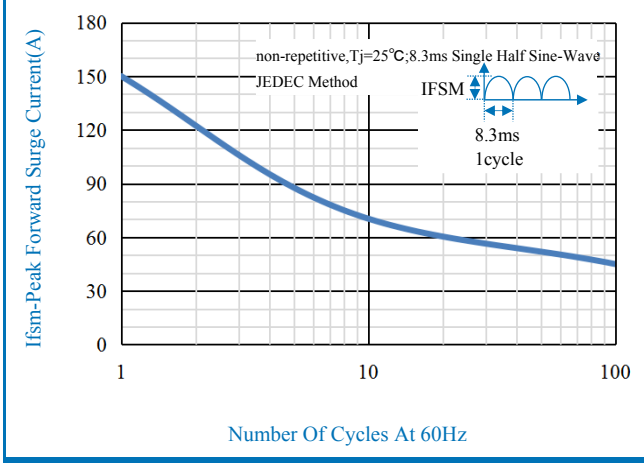


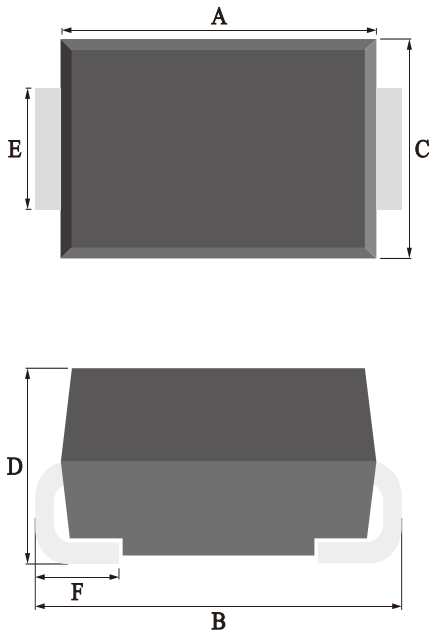
Fig.5-Max. Non-Repetitive Surge Current

S5AB THRU S5MB

General Purpose Rectifiers

Pb-Free RoHS COMPLIANT

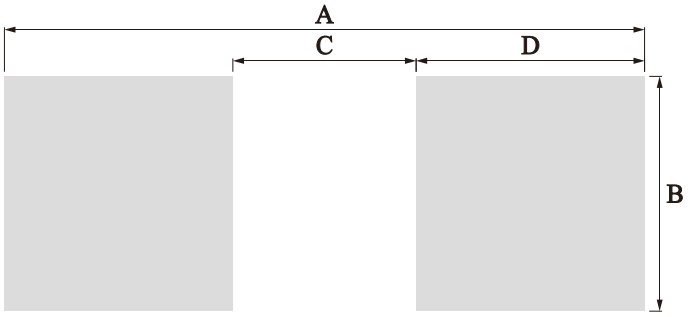
OUTLINE DRAWINGS



SMB

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.00	-	4.70	0.1575	-	1.8504
B	5.00	-	5.59	1.9685	-	2.2008
C	3.30	-	3.94	1.2992	-	1.5512
D	2.10	-	2.45	0.8268	-	0.9646
E	1.90	-	2.11	0.7480	-	0.8307
F	0.76	-	1.50	0.2992	-	0.5906

RECOMMEDNED LAYOUT DRAWINGS



SMB

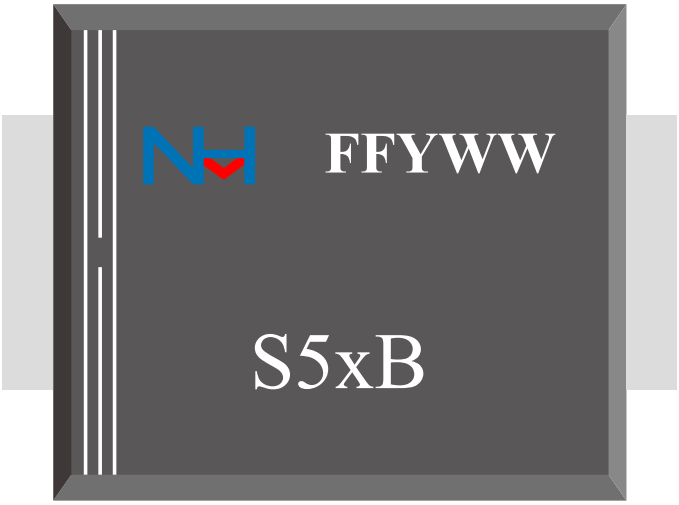
OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	6.34	-	-	2.4961	-
B	-	2.72	-	-	1.0709	-
C	-	1.76	-	-	0.6929	-
D	-	2.29	-	-	0.9016	-

S5AB THRU S5MB

General Purpose Rectifiers

Pb-Free RoHS COMPLIANT

MARKING



MARKING INSTRUCTION

NH=Niuhang Trademark

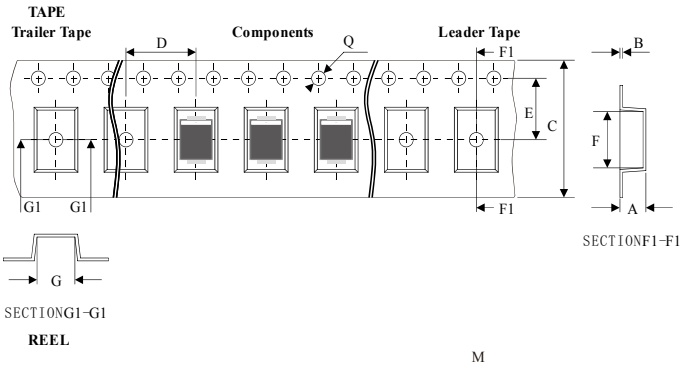
FF=Product Line Code,According To Actual Changes

YWW=Date Code,According To Actual Changes

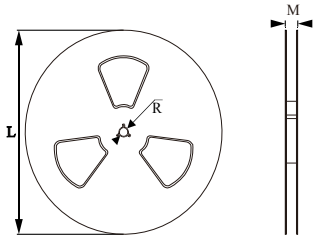
S5xB=Model,x=A,B,D,G,J,K,M

White band denotes cathode

PACKAGING



REEL



SMB

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
TAPE						
A	2.60	-	2.80	0.1024	-	0.1102
B	0.15	-	0.35	0.0059	-	0.0138
C	11.70	-	12.30	0.4606	-	0.4843
D	7.70	-	8.30	0.3031	-	0.3268
E	5.30	-	5.70	0.2087	-	0.2244
F	5.49	-	5.89	0.2161	-	0.2319
G	3.66	-	3.86	0.1441	-	0.1520
Q Φ	1.40	-	1.60	0.0551	-	0.0630
REEL						
L	328.00	-	332.00	12.913	-	13.071
R	12.00	-	14.00	0.4724	-	0.5512
M	15.00	-	17.00	0.5906	-	0.6693

PACKING INFORMATION

Package Type	Package Code	Productor Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
SMB	P1	0.095	13" Reel	3000	6000	48000
SMB	P1	0.095	13" Reel	3000	6000	60000

S5AB THRU S5MB

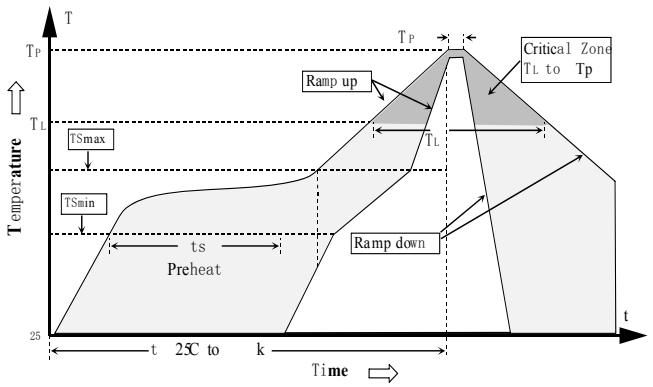
General Purpose Rectifiers

Pb Pb-Free RoHS COMPLIANT

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 (Tsmax to Tp)	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.

Disclaimer

- Reproducing and modifying informatiom of the document is prohibited without permission from Niuhang Electronics Technology Co., LTD
- Niuhang Electronics Technology Co., LTD. reserves the rights to make changes of the content herein the document anytime without notification.
- Niuhang Electronics Technology Co., LTD. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Niuhang Electronics Technology Co., LTD. does not assume any and all implied warranties,including warranties of fitness for particular purpose,non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation.Customers are responsible in comprehending the suitable use in particular applications.Niuhang Electronics Technology Co., LTD.makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining,such as medical instruments.transportation equipment,aerospae machinery et cetera.Customers usin or selling these products for use in such applications do so at their own rish and agree to fully indemnify Niuhang Electronics Technology Co., LTD.for any damages resulting resulting from such improper use or sale.
- When the appearance of the product and chip size does not change, in order to product the customer. quality, change the internal structure and the production process Niuhang can not notify

S5AB THRU S5MB

General Purpose Rectifiers

Pb Pb-Free RoHS COMPLIANT

Specification Revision History

Rev.	Date	Changed Items	Pre-Changed Content	Changed Content
A/1	2014-10-20	First Issue		

Blank Below