

SGBJ3510 THRU SGBJ3516

General Bridge Rectifiers



Voltage: 1000~1600 Volts

Current: 35 A

Package: SGBJ

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

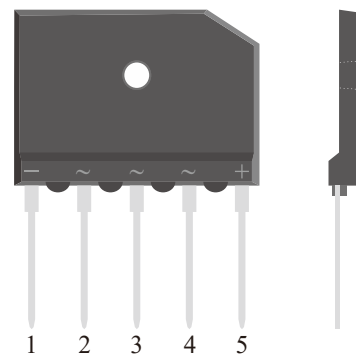
Mechanical Data

- **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

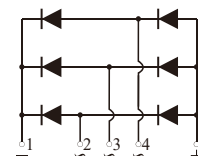
Typical Applications

- 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°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	SGBJ35 10	SGBJ35 12	SGBJ35 16	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	1000	1200	1600	V
Maximum RMS Voltag		V_{RMS}	700	840	1120	V
Maximum DC Blocking Voltage		V_{DC}	1000	1200	1600	V
Maximum Average Forward Rectified Current	With Heatsink 110 °C Without Heatsink 25 °C	$I_{F(AV)}$	35 5			A
Peak Forward Surge Current Per Diode	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	400			A
Current Squared Time Per Diode	$t < 8.3ms$	I^2t	664			A ² sec
Maximum Mounting Torque	M3 screw	T_{MM}	1.1			N.m

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

Parameter	Test Conditions	Symbol	SGBJ35 10	SGBJ35 12	SGBJ35 16	Unit
Maximum Instantaneous Forward Voltage	$I_F = 17.5 A$	V_F	1.1			V
Maximum DC Reverse Current at Rated DC Blocking Voltage	Ta=25°C , $V_R = V_{RRM}$ Ta=125°C , $V_R = V_{RRM} * 80\%$	I_{RRM}	5 500			uA
Typical Junction Capacitance Per Diode	4 V,1MHz	C_J	130			pF

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

Parameter	Test Conditions	Symbol	SGBJ35 10	SGBJ35 12	SGBJ35 16	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 _{θJA}	18			℃/W
Thermal Resistance Junction-Case With Steady-State	Device Mounted On 75mm x 45mm x 2.5mm Alu. Heat.	R _{θJC}	1.58			

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

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Typical Characteristics Curves

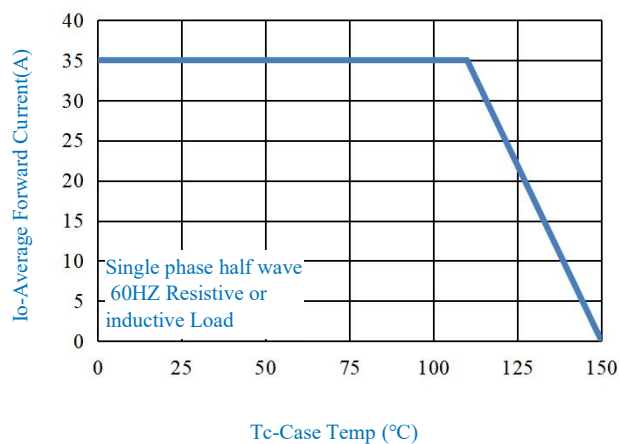


Fig.1-Forward Current Derating Curve

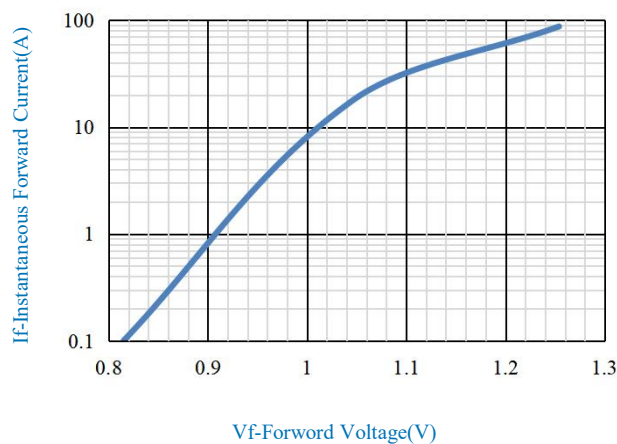


Fig.2-Typical Instantaneous Forward

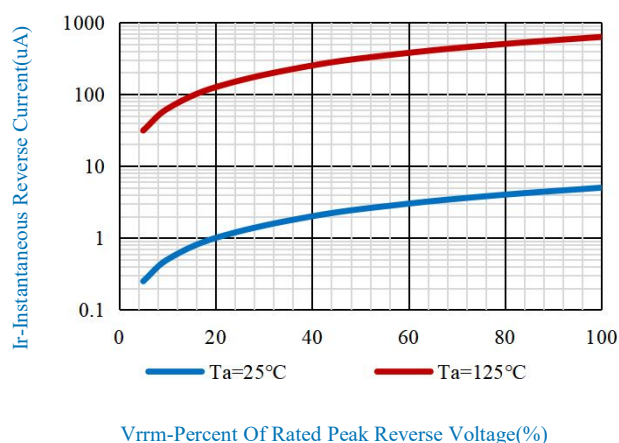


Fig.3-Typical Reverse Characteristics

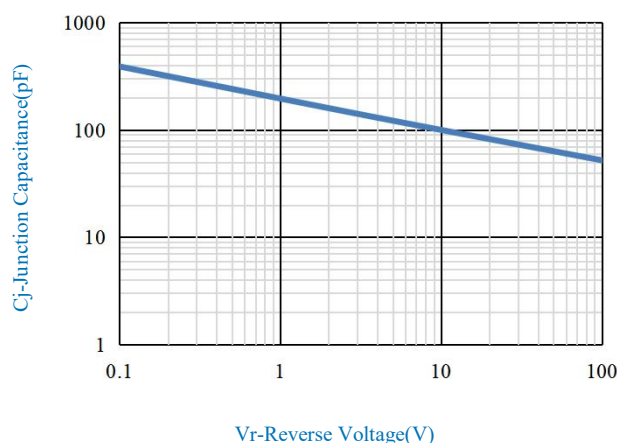


Fig.4-Typical Junction Capacitance

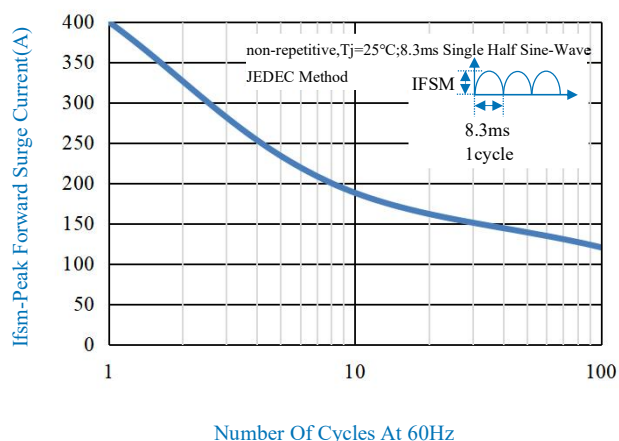
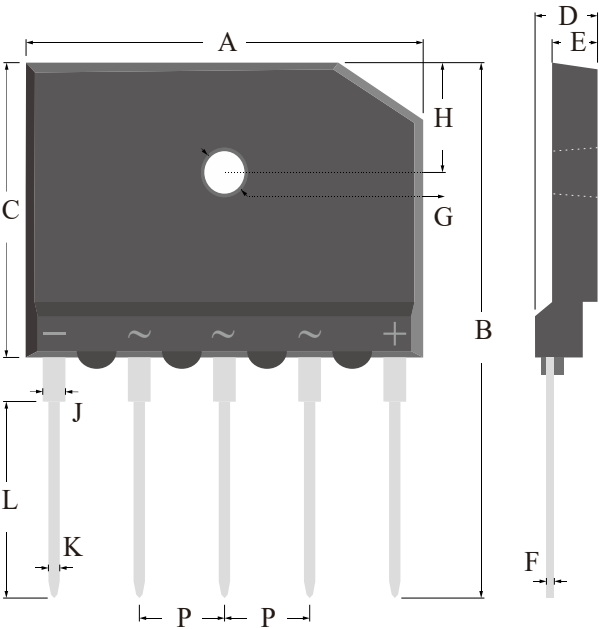


Fig.5-Max. Non-Repetitive Surge Current

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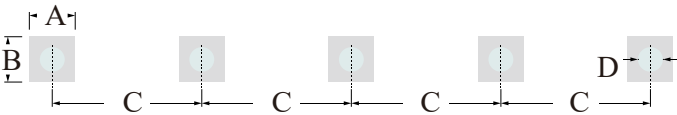
OUTLINE DRAWINGS



SGBJ

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	34.00	-	36.00	1.3386	-	1.4173
B	44.50	-	46.50	1.7520	-	1.8307
C	24.00	-	25.60	0.9449	-	1.0079
D	5.10	-	5.90	0.2008	-	0.2323
E	3.60	-	4.40	0.1417	-	0.1732
F	0.40	-	1.00	0.0157	-	0.0394
L	16.20	-	17.20	0.6378	-	0.6772
G	3.80	-	4.60	0.1496	-	0.1811
H	8.90	-	9.70	0.3504	-	0.3819
J	1.70	-	2.30	0.0669	-	0.0906
K	0.75	-	1.25	0.0295	-	0.0492
P	7.10	-	7.90	0.2795	-	0.3110

RECOMMEDND LAYOUT DRAWINGS



SGBJ

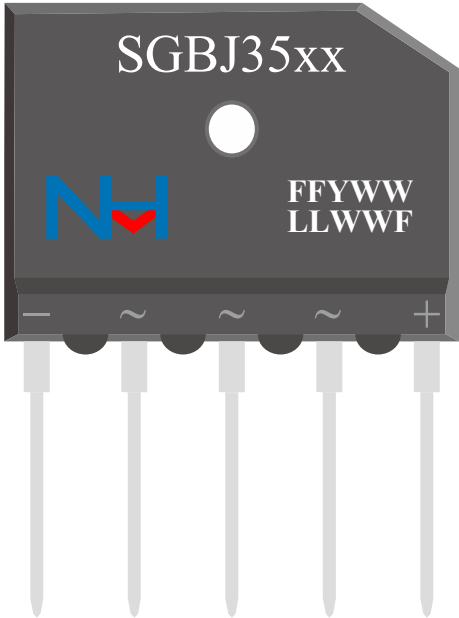
OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	2.30	-	-	0.0906	-
B	-	2.30	-	-	0.0906	-
C	-	7.50	-	-	0.2953	-
D	-	1.00	-	-	0.0394	-

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MARKING



MARKING INSTRUCTION

NH=Niuhang Trademark
FF=Product Line Code,According To Actual Changes
YWW=Date Code,According To Actual Changes
LLWWF=Inernal Code,According To Actual Changes
SGBJ35xx=Model,xx=10,12,16
- ~ ~ ~ +=Polarity Mark

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
SGBJ	P1	10	Box	250	250	5000
SGBJ	P2	10	Tube	20	1000	2000

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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 (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.

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Specification Revision History

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