

SBL8010

BRIDGE RECTIFIERS



VOLTAGE: 1000 Volts

CURRENT: 8 Amperes

Package: SBL

Marking And Polarity

FEATURES

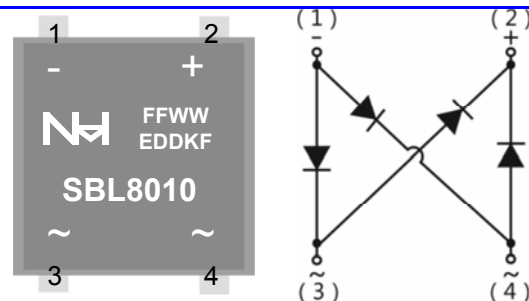
- Glass Passivated Chip Junction
- Low Forward Voltage Drop For High Efficiency
- Low Leakage Current For High Reliability
- High Forward Surge Capability For High Reliability

MECHANICAL DATA

- **Package:** Molding Compound Meets UL 94 V-0 Flammability Rating, RoHS-Compliant
- **Polarity:** As Marked On Case
- **Mounting Position:** Any
- **Weight: App. 0.435 Grams (0.15343 Ounce)**

TYPICAL APPLICATIONS

- General Purpose Use In AC/DC Bridge Full Wave Rectification For PD, Adapter, Power Supply, Monitor, LED Driver, Printer, Audio Equipment, TV And Home Appliances Etc. Applications.



Remark:

- ①. NH=Niuhan Trademark
- ②. FF=Product Line Code, According To Actual Changes
WW=Date Code, According To Actual Changes
EDDKF=Internal Code, According To Actual Changes
SBL8010=Model
- ③. - +~ ~~=Polarity Mark

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	SBL8010	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	1000	V
Maximum RMS Voltage		V_{RMS}	700	V
Maximum DC Blocking Voltage		V_{DC}	1000	V
Maximum Average Forward Rectified Current	@TC= 100 °C	$I_{F(AV)}$	8	A
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	250	A
Current Squared Time Per Diode	t<8.3ms	I^2t	259.4	A ² sec

Electrical Characteristics (Ta=25°C Unless otherwise specified)

Parameter	Test Conditions		Symbol	SBL8010			Unit
				Min.	Typ.	Max.	
Instantaneous forward voltage per diode (note1)	Ta=25°C	$I_F = 4.0 \text{ A}$	V_F	--	0.90	1.10	V
	Ta=125°C			--	0.81	1.03	
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1)	Ta=25°C	$V_R = V_{RRM}$	I_{RRM}	--	1.0	5	uA
	Ta=125°C	$V_R = 80\% \cdot V_{RRM}$		--	50.00	500	
Typical Junction Capacitance Per Diode	4.0V, 1MHz		C_J	--	70	--	pF

Thermal Characteristics (Ta=25°C Unless otherwise specified)

Parameter	Symbol	SBL8010	Unit
Operating Junction Temperature Range	T_J	-55 to 150	°C
Storage Temperature Range	T_{STD}	-55 to 150	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	60.0	°C/W
	$R_{\theta JC}$	10	

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

2. Device mounted on Device mounted on 75mm x 45mm x 5.5mm Aluminum Plate Heatsink.

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Typical Characteristics Curves

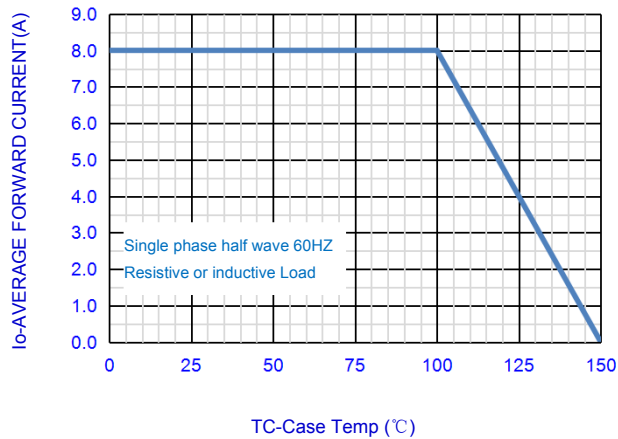


Fig.1-FORWARD CURRENT DERATING CURVE

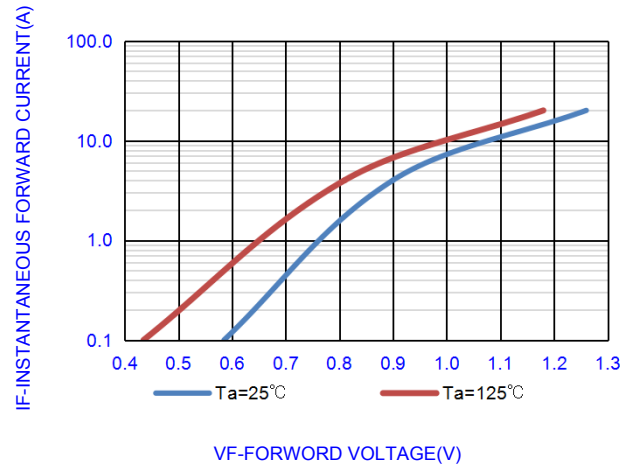


Fig.2- TYPICAL INSTANTANEOUS FORWARD

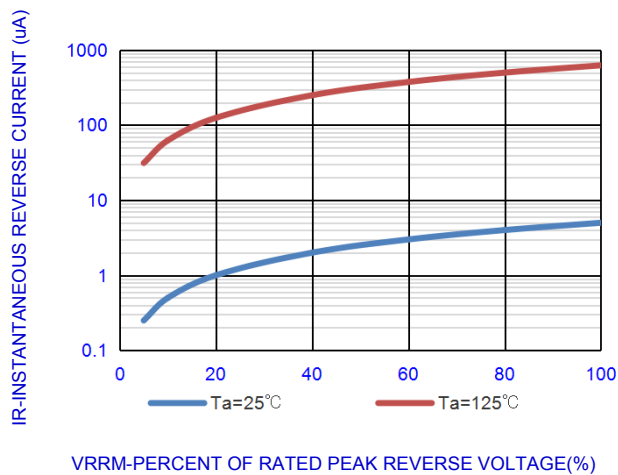


Fig.3- TYPICAL REVERSE CHARACTERISTICS

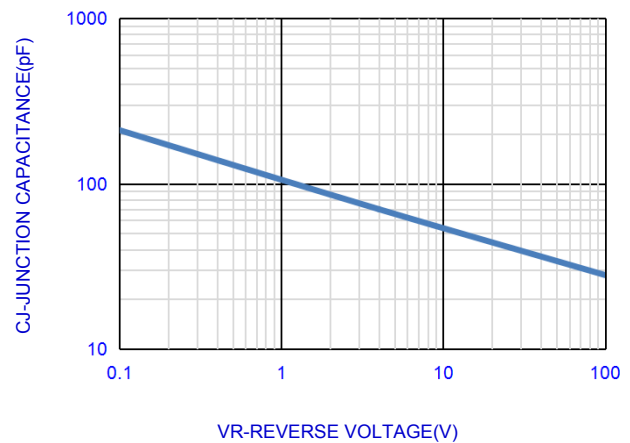


Fig.4- TYPICAL JUNCTION CAPACITANCE

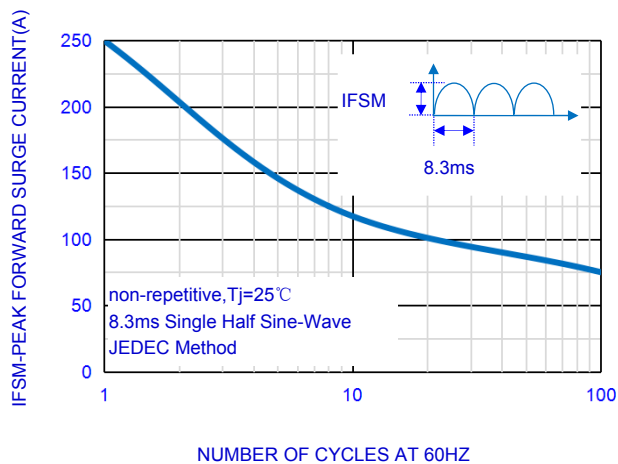


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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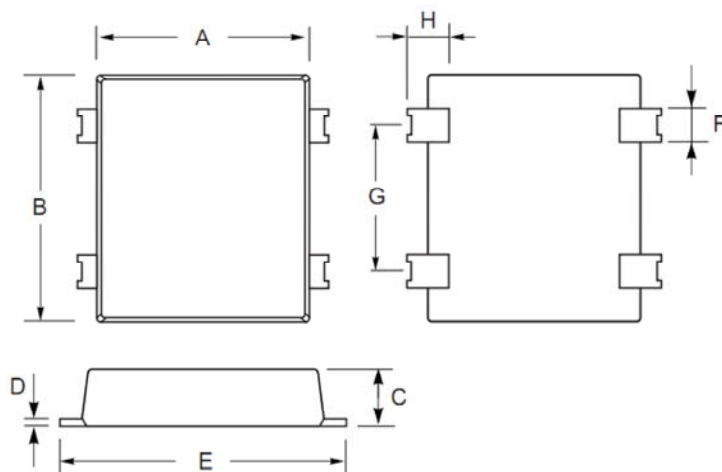


OUTLINE DRAWINGS

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OUTLINE DIMENSIONS

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	8.40	-	8.80	0.331	-	0.346
B	9.40	-	9.80	0.370	-	0.386
C	1.35	-	1.75	0.053	-	0.069
D	0.25	-	0.55	0.010	-	0.022
E	9.80	-	10.20	0.386	-	0.402
F	1.25	-	1.55	0.049	-	0.061
G	4.90	-	5.30	0.193	-	0.209
H	0.85	-	1.25	0.033	-	0.049

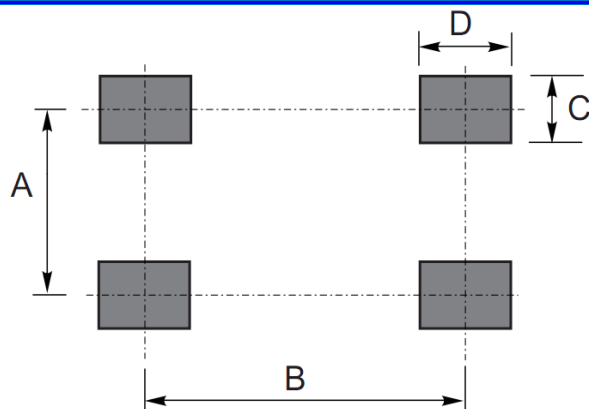


RECOMMENDED LAYOUT DRAWINGS

SBL

RECOMMENDED LAYOUT DIMENSIONS

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	5.100	-	-	0.201	
B	-	8.700	-	-	0.343	
C	-	2.100	-	-	0.083	
D	-	1.800	-	-	0.071	



PACKING INFORMATION

Package	Pack	Inner Box Size L×W×H(mm)	Quantity (pcs/Inner Box)	Outer Carton Size L×W×H(mm)	Quantity (pcs/carton)
SBL	Tape Reel	340×340×45	6000	360×360×240	30000

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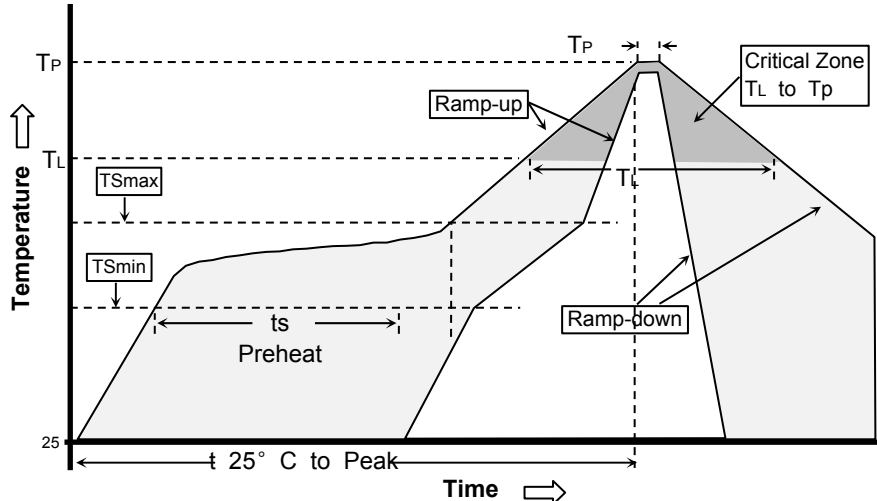
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Recommended wave soldering condition

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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