

RSBL8010

FAST RECOVERY BRIDGE RECTIFIERS



VOLTAGE: 1000 Volts

CURRENT: 8 Amperes

Package: SBL

Marking and Polarity

FEATURES

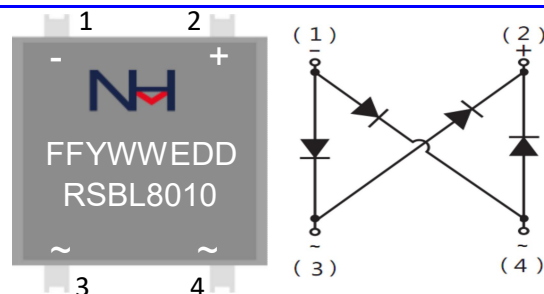
- Glass passivated chip junction
- Fast recovery time for EMC
- Low leakage current for high reliability
- High forward surge capability for high reliability

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 waverectification 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
YWW=Date code, According to actual changes
EDD=Internal code, According to actual changes
- ③. RSBL8010=Model
- ④. --+=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	RSBL8010	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 (see fig.1)	with heatsink @TC= 100 °C without heatsink @TC= 100 °C	$I_{F(AV)}$	8 1.5	A
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	200	A
Current Squared Time Per Diode	t<8.3ms	I^2t	166.0	A ² sec

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

Parameter	Test Conditions		Symbol	RSBL8010			Unit
				Min.	Typ.	Max.	
Instantaneous forward voltage per diode (note1)	Ta=25°C Ta=125°C	$I_F = 4.0 A$	V_F	--	0.95 0.85	1.1 1	V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1)	Ta=25°C Ta=125°C	$V_R = V_{RRM}$ $V_R = 80\% \cdot V_{RRM}$	I_{RRM}	--	0.80 80	10 500	uA
Typical Junction Capacitance Per Diode	4.0V, 1MHz		C_J	--	70.00	--	pF
Maximum Reverse Recovery Time	$I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A$		T_{RR}	--	300.00	350.00	nS

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

Parameter	Symbol	RSBL8010	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
	$R_{\theta JC}$	10.0	

Notes: 1.Pulse test: 300 μs 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

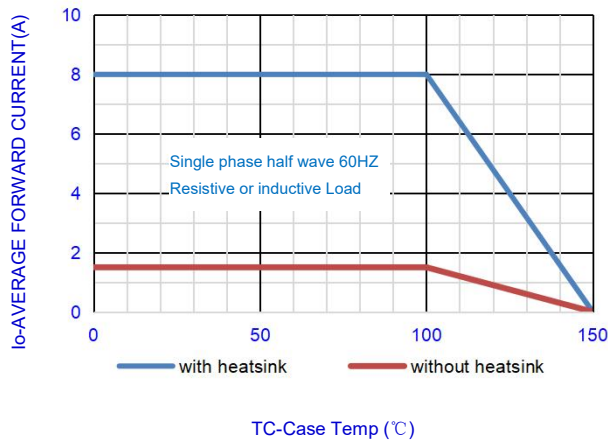


Fig.1-FORWARD CURRENT DERATING CURVE

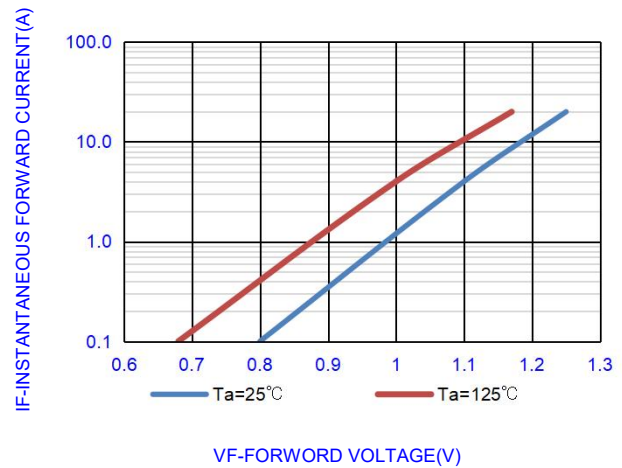


Fig.2- TYPICAL INSTANTANEOUS FORWARD

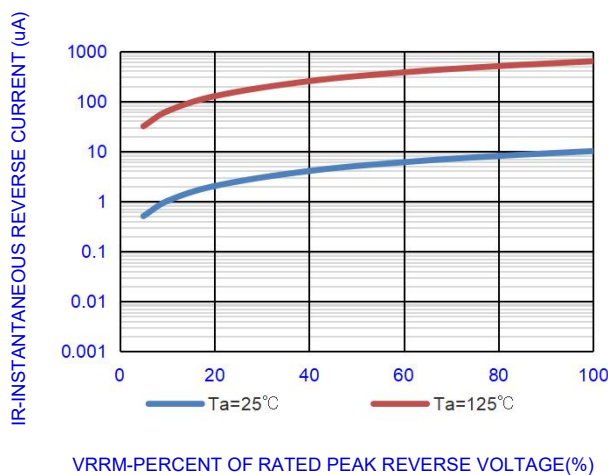


Fig.3- TYPICAL REVERSE CHARACTERISTICS

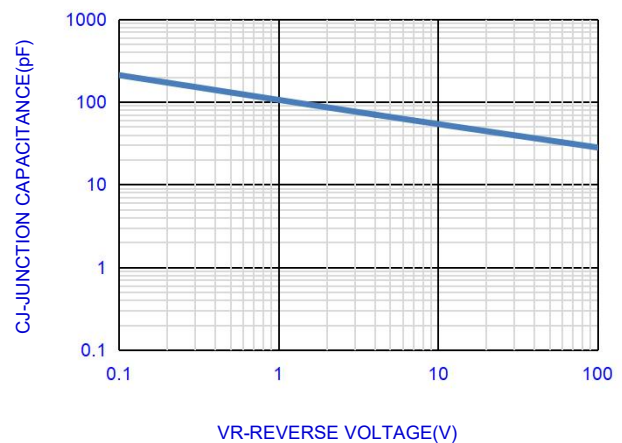


Fig.4- TYPICAL JUNCTION CAPACITANCE

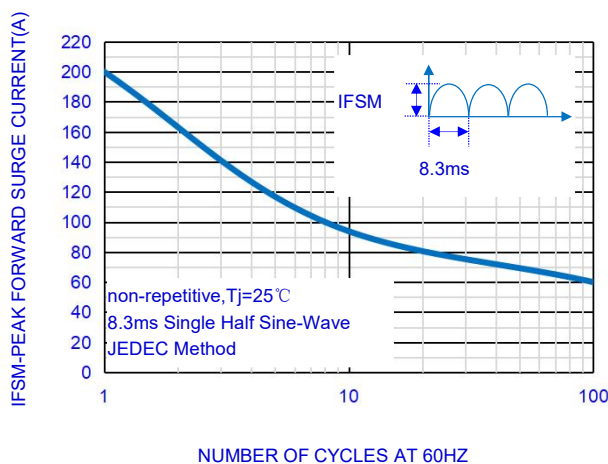


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

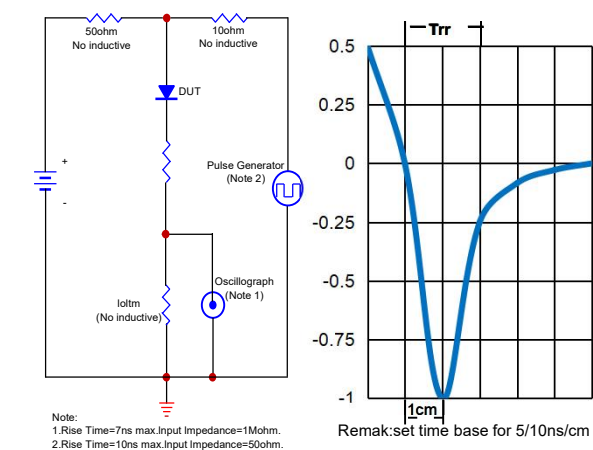


Fig.6-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT

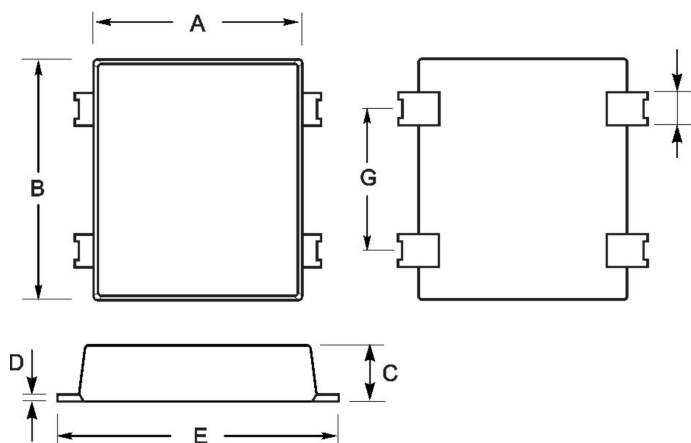
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OUTLINE DRAWINGS

SBL

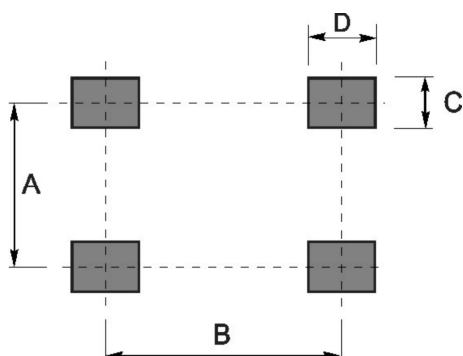


OUTLINE DIMENSIONS

Dim.	Milimeters			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

RECOMMENDED LAYOUT DRAWINGS

SBL



RECOMMENDED LAYOUT DIMENSIONS

Dim.	Milimeters			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

SBL

Package	Quantity(pcs/reel)	Box Size L×W×H (mm)	Quantity (pcs/box)	Carton Size L×W×H (mm)	Quantity (pcs/carton)
SBL	3000	340×340×45	6000	360×360×240	30000

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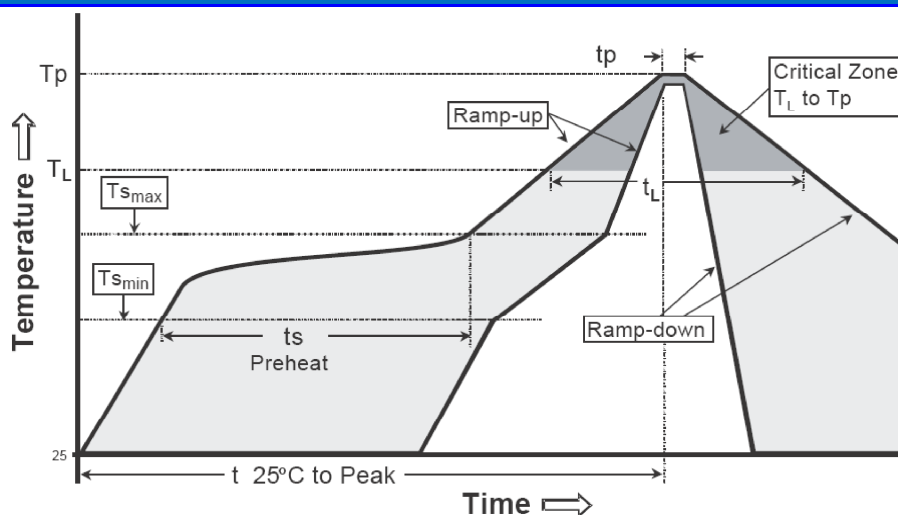
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Recommended wave soldering condition

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(T_{smin}) -Temperature Max(T_{smax}) -Time(t_{smin} to t_{smax})	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T_L) - Time (t_L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T_p)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(t_p)	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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