

RABS210

FAST RECOVERY BRIDGE RECTIFIERS



<b>VOLTAGE:</b> 1000 Volts	<b>CURRENT:</b> 2.0 Amperes	<b>ABS</b>	<b>Marking &amp; Schematic diagram</b>
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**FEATURES**

- Glass passivated die construction
- low forward voltage drop
- High surge current capability
- Good soft recovery features are good for EMC
- Plastic material-UL flammability 94V-0

**MECHANICAL DATA**

- **Case:** ABS
- **Terminals:** Plated Leads Solderable per MIL-STD-202, Method 208
- **Polarity:** As Marked on Case
- **Mounting Position:** Any
- **Lead Free:** For RoHS / Lead Free Version
- **Weight:** App. 0.1 grams (0.0035 ounce)

**TYPICAL APPLICATIONS**

- For use in switch power supply ,high frequency inverters , PD power supply applications

**Remark:**

- NH=niuhang trademark
- FF=Product line code,According to actual changes  
YWW=Data code,According to actual changes
- RABS210=Modle
- "- +"=Polarity mark

Single phase,half wave,60Hz,resistive or inductive load.For capacitive load,derate current by 20%

**Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified )**

Parameter	Symbol	RABS210	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	1000	V
Maximum RMS Voltag	$V_{RMS}$	700	V
Maximum DC Blocking Voltage	$V_{DC}$	1000	V
Maximum Average Forward Rectified Current @ TC=100°C (see fig.1)	$I_{F(AV)}$	2	A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method)	$I_{FSM}$	50	A
Current Squared Time Per Diode(t<8.3ms)	$I^2t$	10.38	A <sup>2</sup> sec

**Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified )**

Parameter	Test Conditions	Symbol	RABS210			Unit
			Min.	Typ.	Max.	
Maximum Forward Voltage Per Diode (Note 1)	Ta=25°C IF= 2.0 A	$V_{FM}$	--	--	1.3	V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1)	Ta=25°C VR= 1000 V	$I_{RRM}$	--	--	5	uA
	Ta=125°C VR= 1000 V		--	--	500	
Maximum Reverse Recovery Time	IF=0.5A, IR=1.0A, IRR=0.25A	$T_{RR}$	--	--	500	nS
Typical Junction Capacitance Per Diode	4V,1MHz	$C_J$	--	35	--	pF

**Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified )**

Parameter	Symbol	RABS210		Unit
Operating Junction Temperature Range	$T_J$	-55	to 150	°C
Storage Temperature Range	$T_{STD}$	-55	to 150	°C
Typical thermal resistance (Note 2)	$R_{\theta JA}$	62.5		°C/W
	$R_{\theta JL}$	25.0		

- Notes:
- Pulse test: 300 μs pulse width,1% duty cycle
  - Mounted on glass epoxy PC board with 4x1.5"x1.5" (3.81x3.81 cm) copper pad.

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RATING AND CHARACTERISTIC CURVES

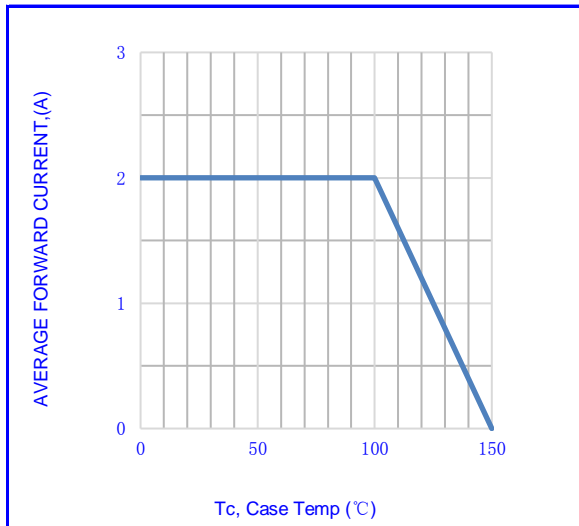


Fig.1-FORWARD CURRENT DERATING CURVE

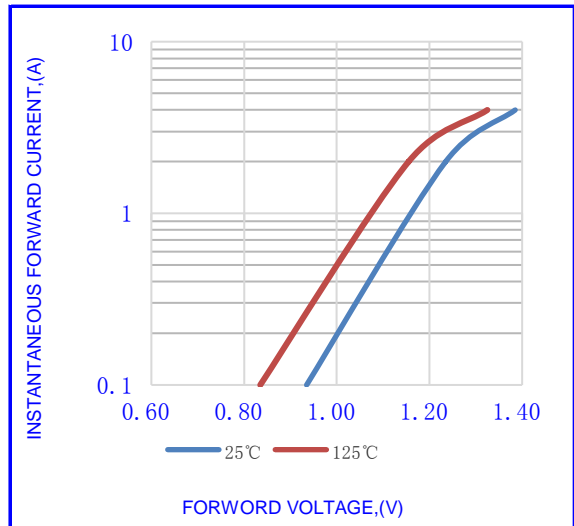


Fig.2- TYPICAL INSTANTANEOUS FORWARD

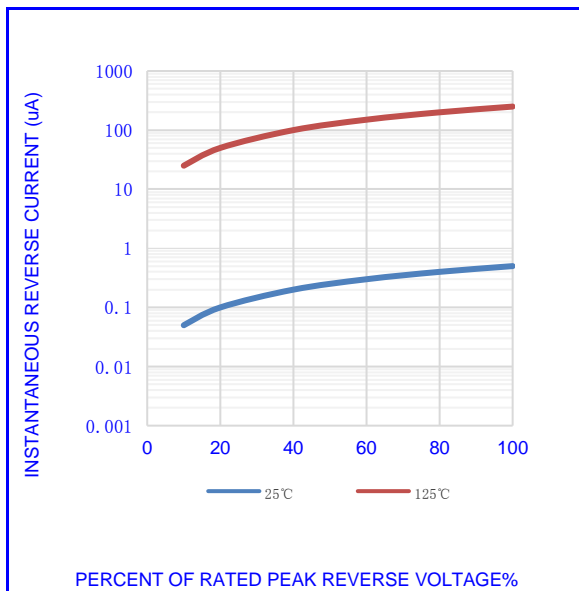


Fig.3- TYPICAL REVERSE CHARACTERISTICS

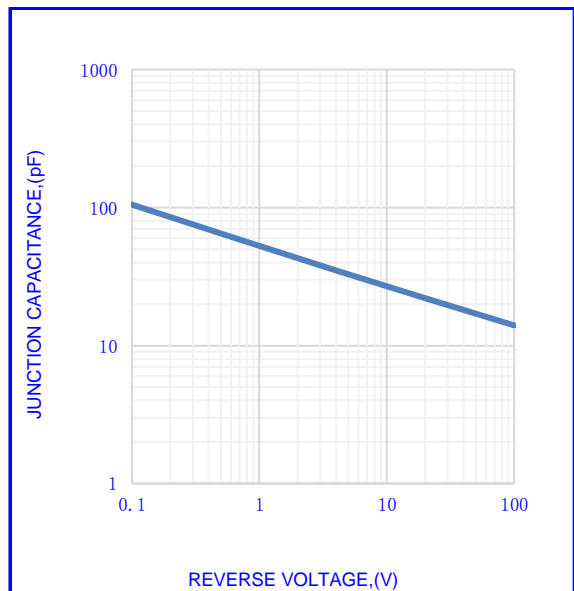


Fig.4- TYPICAL JUNCTION CAPACITANCE

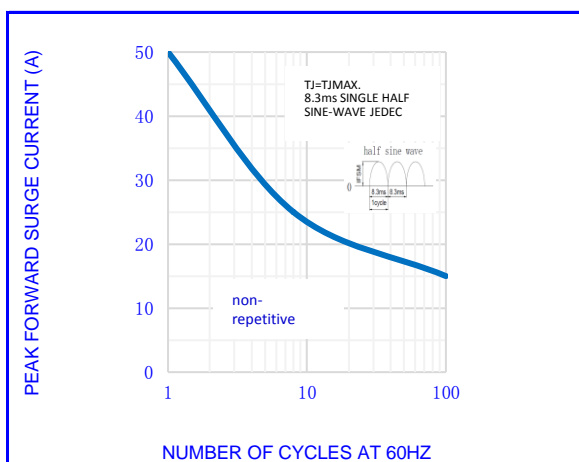


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

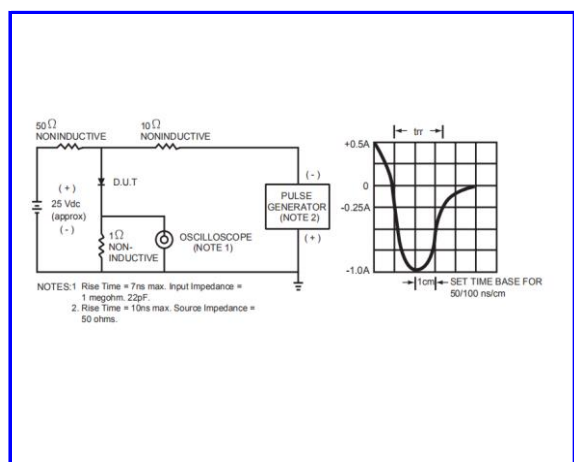


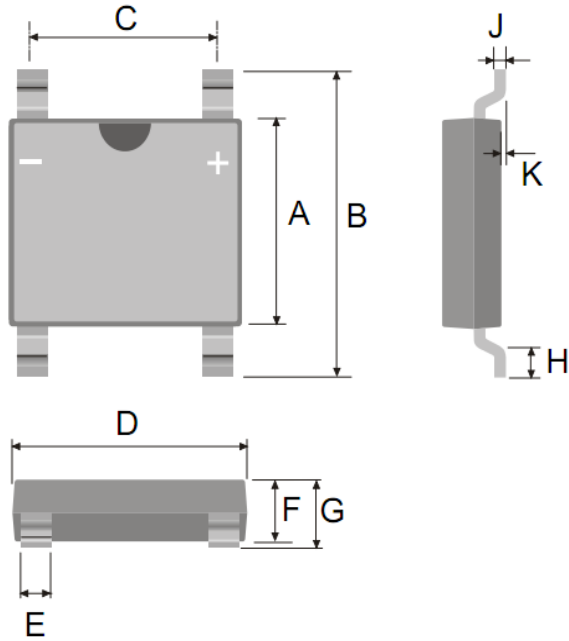
Fig.6- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

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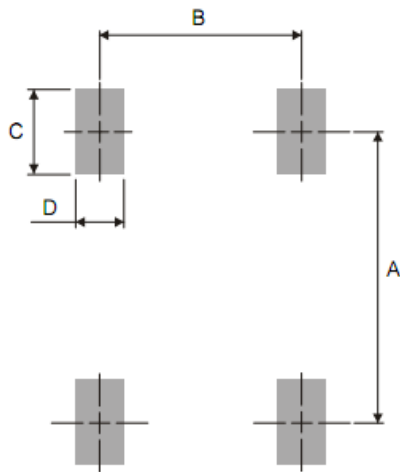
**OUTLINE DRAWINGS**



**ABS**

OUTLINE DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.300	-	4.500	0.169	-	0.177
B	6.000	-	6.500	0.236	-	0.252
C	3.800	-	4.400	0.150	-	0.173
D	4.900	-	5.400	0.193	-	0.213
E	0.550	-	0.850	0.022	-	0.033
F	1.220	-	1.450	0.048	-	0.056
G	-	-	1.500	-	-	0.059
H	0.300	-	0.800	0.012	-	0.031
J	0.150	-	0.250	0.006	-	0.010
K	0.030	-	0.150	0.001	-	0.006

**RECOMMENDED LAYOUT DRAWINGS**



**ABS**

RECOMMENDED LAYOUT DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	6.200	-	-	0.244	-
B	-	4.000	-	-	0.157	-
C	-	2.000	-	-	0.079	-
D	-	1.000	-	-	0.039	-

**PACKING INFORMATION**

**ABS**

Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size LxWxH(mm)	Quantity (pcs/Inner Box)	Outer Carton Size LxWxH(mm)	Quantity (pcs/carton)
Tape Reel	Φ330	5000	340x340x40	10000	360x360x260	60000

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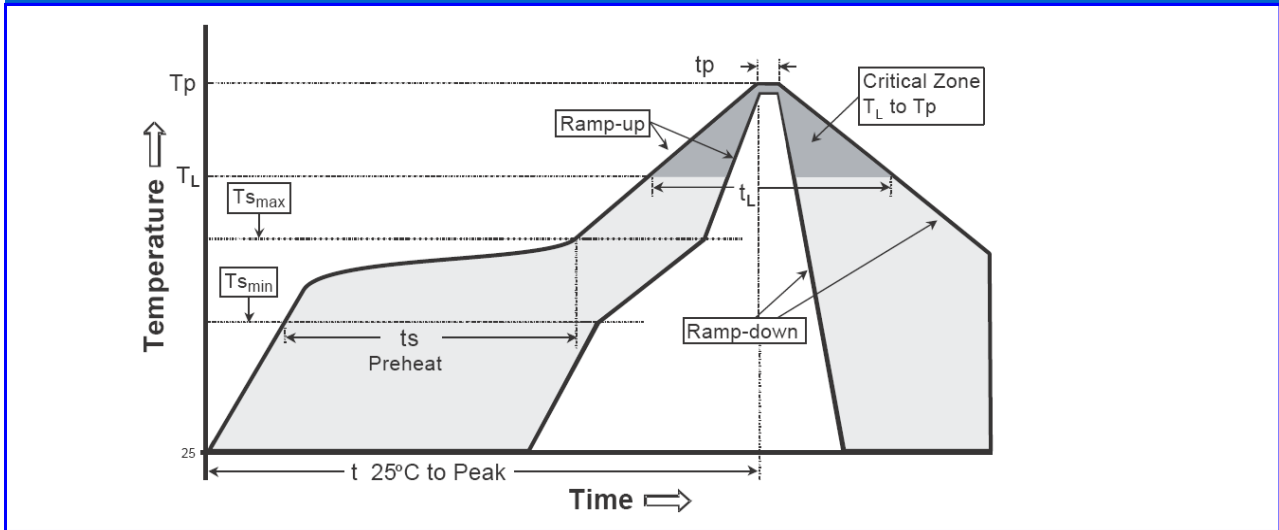
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**Recommended wave soldering condition**

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 (Tsmmax 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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