

RABS208G

FAST RECOVERY BRIDGE RECTIFIERS



| VOLTAGE: 800 Volts | CURRENT: 2.0 Amperes | ABS | Marking & Schematic diagram | | | | | | | | | | |
|---|-----------------------------|--|--|-----|-------------|---|-------------------|---|-----------------|---|--------------|---|--------------|
| FEATURES <ul style="list-style-type: none"> ■ 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 | | <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>PIN</th> <th>DISCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Output Cathode(-)</td> </tr> <tr> <td>2</td> <td>Output Anode(+)</td> </tr> <tr> <td>3</td> <td>Input Pin(-)</td> </tr> <tr> <td>4</td> <td>Input Pin(-)</td> </tr> </tbody> </table> | | PIN | DISCRIPTION | 1 | Output Cathode(-) | 2 | Output Anode(+) | 3 | Input Pin(-) | 4 | Input Pin(-) |
| PIN | DISCRIPTION | | | | | | | | | | | | |
| 1 | Output Cathode(-) | | | | | | | | | | | | |
| 2 | Output Anode(+) | | | | | | | | | | | | |
| 3 | Input Pin(-) | | | | | | | | | | | | |
| 4 | Input Pin(-) | | | | | | | | | | | | |
| MECHANICAL DATA <ul style="list-style-type: none"> ■ 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) | | Remark: <ol style="list-style-type: none"> ①. NH=niuhang trademark ②. FF=Product line code,According to actual changes YWW=Data code,According to actual changes ③. RABS208G=Mode ④. "- +"=Polarity mark | | | | | | | | | | | |
| TYPICAL APPLICATIONS <ul style="list-style-type: none"> ■ For use in switch power supply ,high frequency inverters , PD Charger applications | | | | | | | | | | | | | |

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 | RABS208G | Unit |
|---|-------------|----------|--------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 800 | V |
| Maximum RMS Voltag | V_{RMS} | 560 | V |
| Maximum DC Blocking Voltage | V_{DC} | 800 | 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} | 70 | A |
| Current Squared Time Per Diode(t<8.3ms) | I^2t | 20.34 | A ² sec |

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

| Parameter | Test Conditions | Symbol | RABS208G | | | Unit |
|--|---|-----------|----------|------|----------|------|
| | | | Min. | Typ. | Max. | |
| Maximum Forward Voltage Per Diode (Note 1) | Ta=25°C IF= 2.0 A | V_{FM} | -- | -- | 1.0 | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1) | Ta=25°C VR= 800 V Ta=125°C VR= 800 V | I_{RRM} | -- | -- | 5 500 | uA |
| Maximum Reverse Recovery Time (Note 3) | IF=0.5A, IR=1.0A, IRR=0.25A | T_{RR} | -- | -- | 350 | nS |
| Typical Junction Capacitance Per Diode | 4V,1MHz | C_J | -- | 40 | -- | pF |

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

| Parameter | Symbol | RABS208G | 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:
1. Pulse test: 300 μs pulse width,1% duty cycle
 2. 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

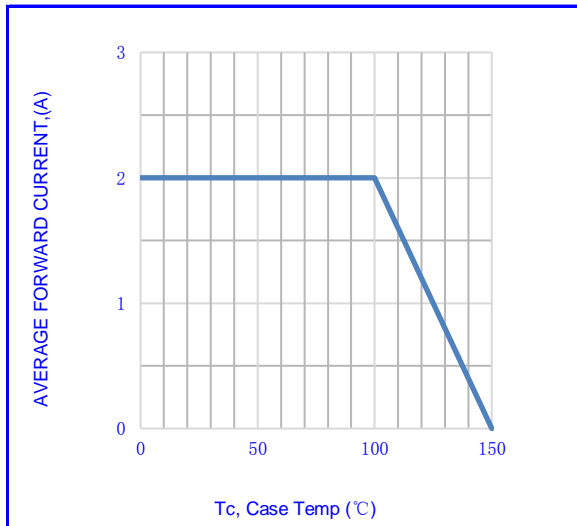


Fig.1-FORWARD CURRENT DERATING CURVE

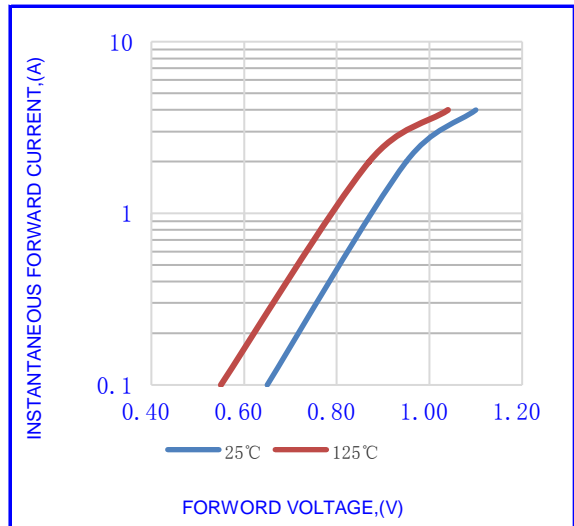


Fig.2- TYPICAL INSTANTANEOUS FORWARD

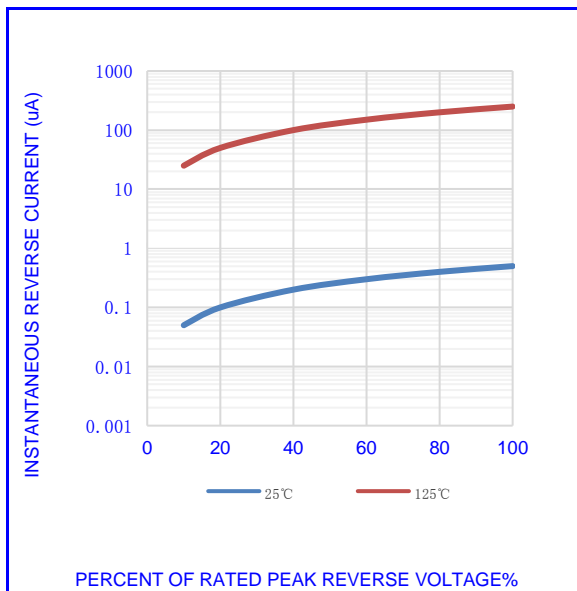


Fig.3- TYPICAL REVERSE CHARACTERISTICS

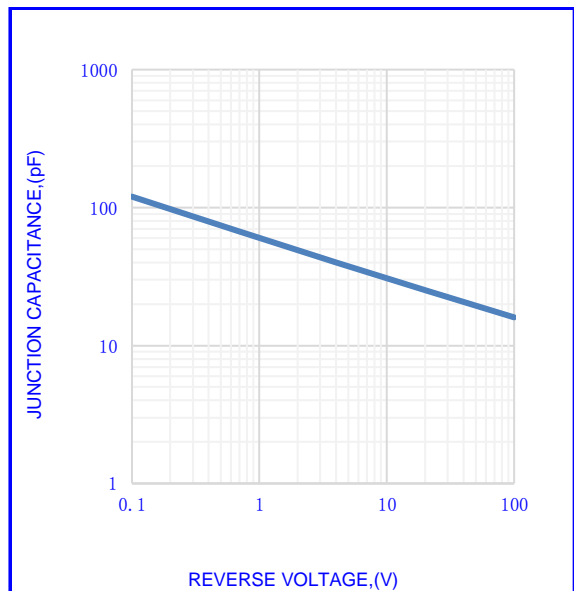


Fig.4- TYPICAL JUNCTION CAPACITANCE

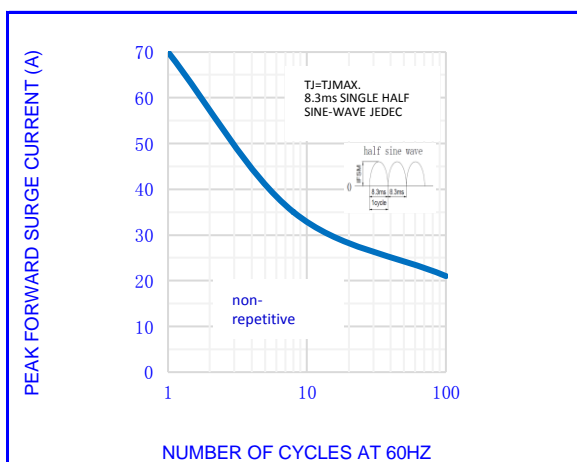


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

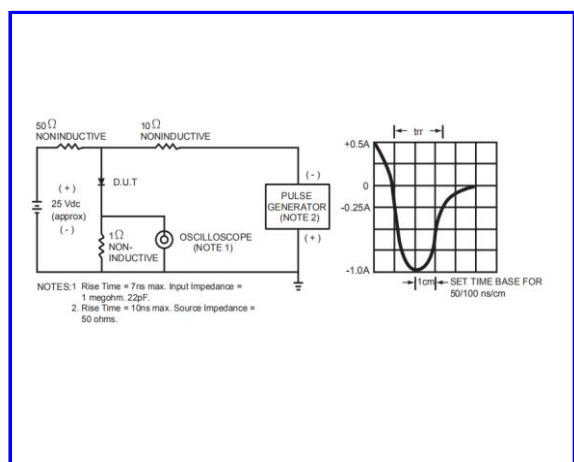


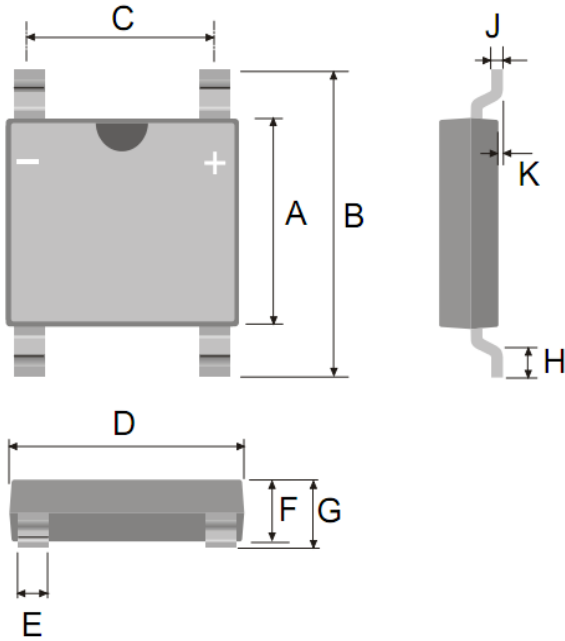
Fig.6- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

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OUTLINE DRAWINGS

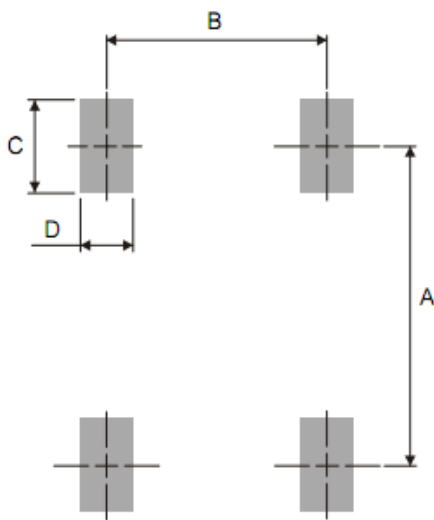


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OUTLINE DIMENSIONS

| 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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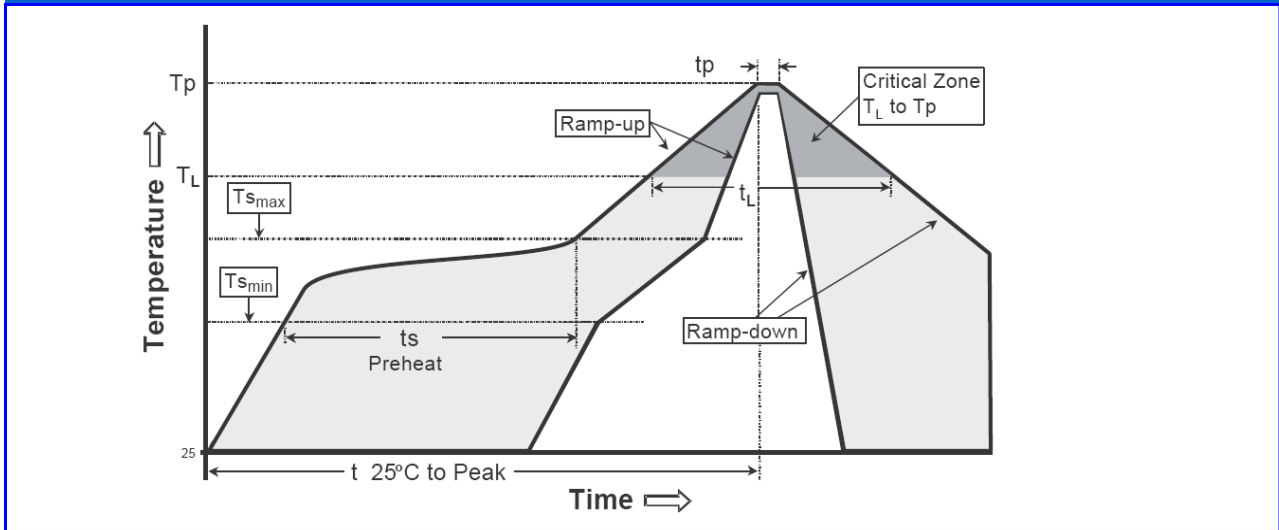
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Recommended wave soldering condition

| 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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