

**DB107**  
BRIDGE RECTIFIERS



**VOLTAGE:** 1000 Volts

**CURRENT:** 1.0 Amperes

**DB-1**

Marking & Schematic diagram

**FEATURES**

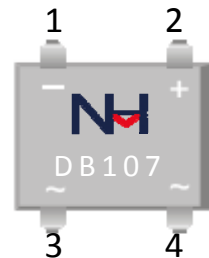
- Glass passivated die construction
- low forward voltage drop
- High surge current capability
- Plastic material-UL flammability 94V-0

**MECHANICAL DATA**

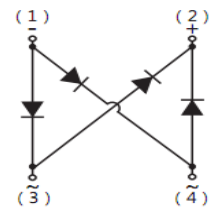
- **Case:** DB-1
- **Terminals:** Plated Leads Solderable per MIL-STD-202, Method 208
- **Polarity:** As Marked on Case
- **Mounting Position:** Any
- **Lead Free:** For RoHS / Lead Free Version
- **Weight:** App. 0.349 grams

**TYPICAL APPLICATIONS**

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



PIN	DISCRIPTION
1	Output Cathode(-)
2	Output Anode(+)
3	Input Pin(-)
4	Input Pin(-)



Remark:

- ①. NH=niuhang trademark
- ②. DB107=Modle
- ③. "- + ~ ~"=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	DB107	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)	$I_{F(AV)}$	1	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 Characterstcs (Ratings at 25°C ambient temperature unless otherwise specified )**

Parameter	Test Conditions		Symbol	DB107			Unit
				Min.	Typ.	Max.	
Maximum Forward Voltage Per Diode (Note 1)	Ta=25°C	IF= 1.0 A	$V_{FM}$	--	--	1.0	V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1)	Ta=25°C	VR= 800 V	$I_{RRM}$	--	--	10	uA
	Ta=125°C	VR= 800 V		--	--	500	
Typical Junction Capacitance Per Diode	4V,1MHz		$C_J$	--	25	--	pF

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

Parameter	Symbol	DB107	Unit
Operating Junction Temperature Range	$T_J$	-55 to 150	°C
Storage Temperature Range	$T_{STD}$	-55 to 150	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	40	°C/W
	$R_{\theta JL}$	15	

- Notes:
1. Pulse test: 300 μs pulse width,1% duty cycle
  2. Mounted on glass epoxy PC board with 4×1.5"×1.5" (3.81×3.81 cm) copper pad.

DB107  
BRIDGE RECTIFIERS



RATING AND CHARACTERISTIC CURVES

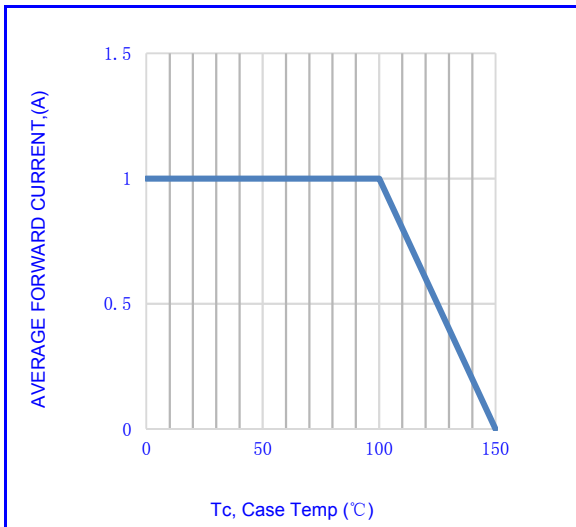


Fig.1-FORWARD CURRENT DERATING CURVE

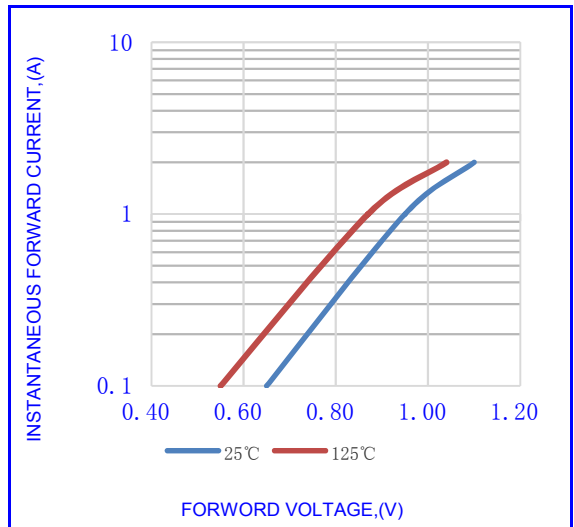


Fig.2- TYPICAL INSTANTANEOUS FORWARD

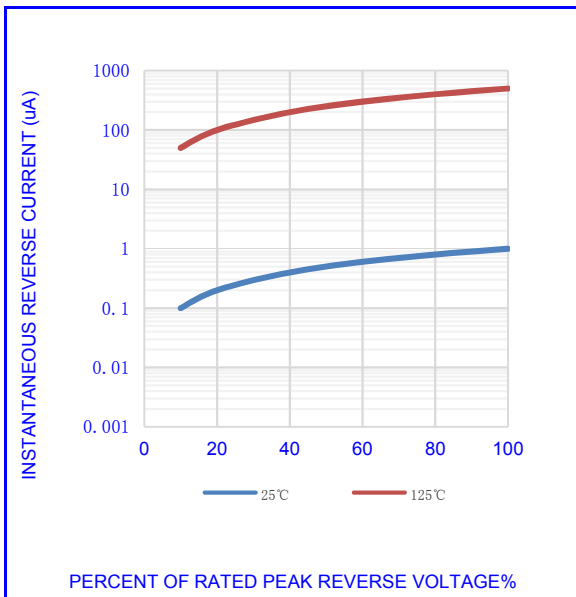


Fig.3- TYPICAL REVERSE CHARACTERISTICS

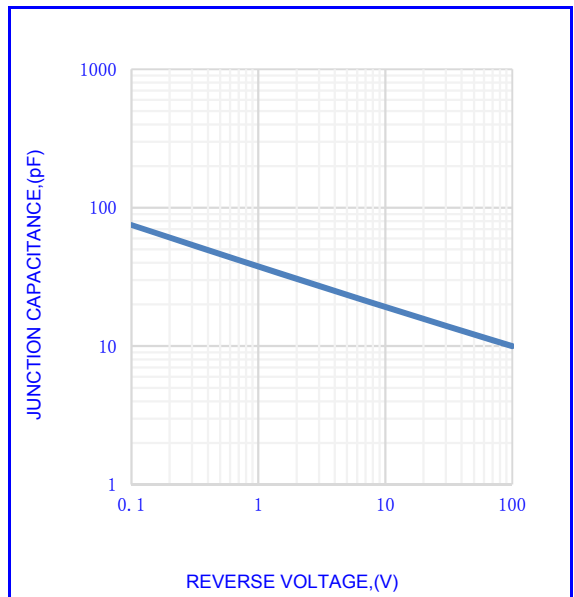


Fig.4- TYPICAL JUNCTION CAPACITANCE

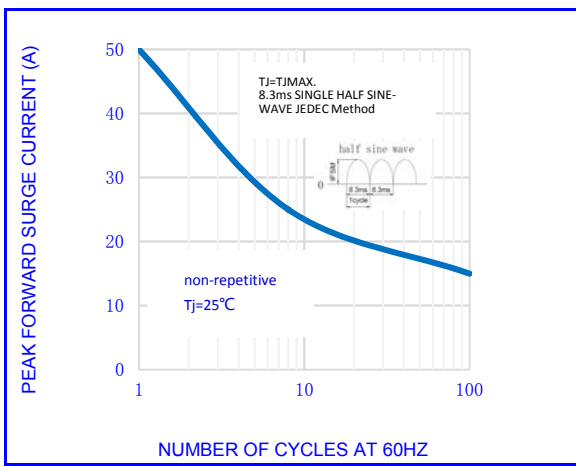
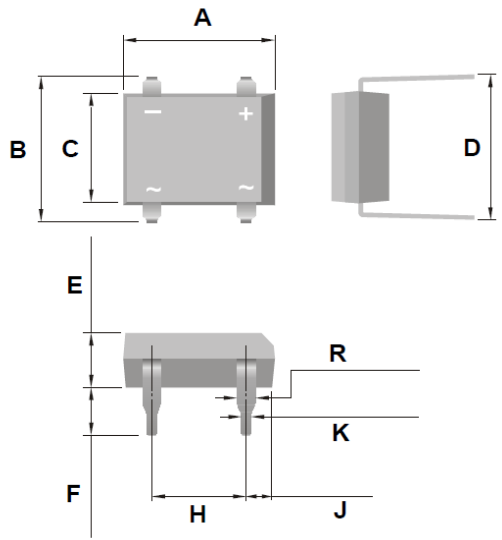


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

**DB107**  
BRIDGE RECTIFIERS



**OUTLINE DRAWINGS**



**DB-1**

OUTLINE DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	8.000	-	8.400	0.315	-	0.331
B	7.200	-	8.000	0.283	-	0.315
C	6.000	-	6.800	0.236	-	0.268
D	-	7.700	-	-	0.303	-
E	2.300	-	2.900	0.091	-	0.114
F	4.000	-	5.000	0.157	-	0.197
H	4.200	-	4.900	0.165	-	0.193
R	0.900	-	1.200	0.035	-	0.047
K	0.400	-	0.700	0.016	-	0.028
J	-	1.600	-	-	0.063	-

**Packing Information**

Package Code	Package Method	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton SizeL×W×H(mm)	Quantity(box)	Quantity (pcs/carton)
DB-1	P/T	460×150×70	2500	480×230×175		12500

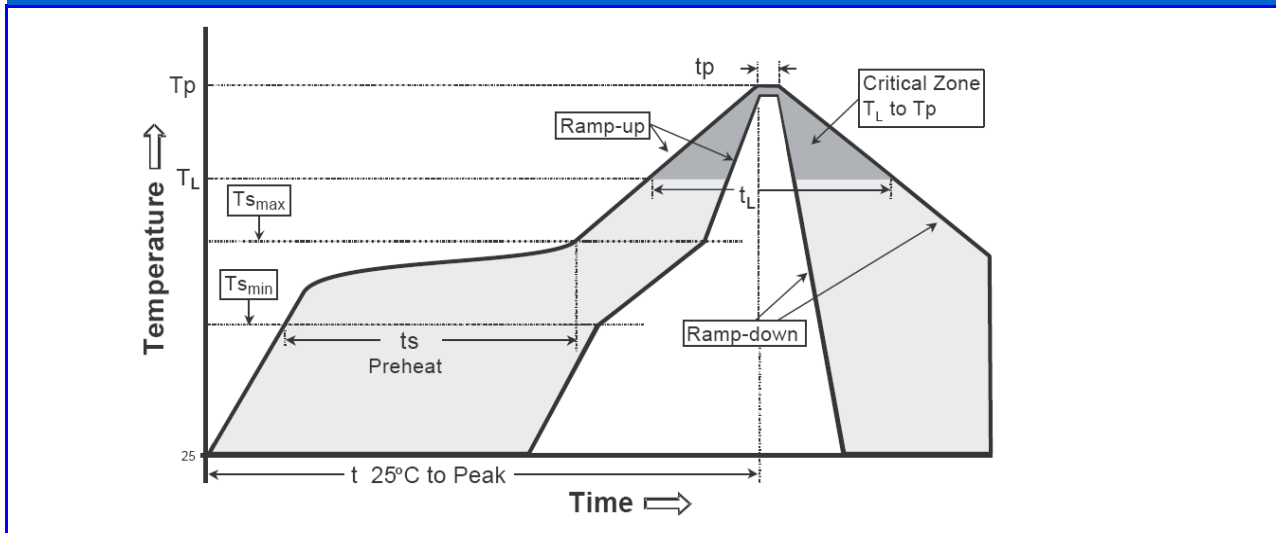
**DB107**  
BRIDGE RECTIFIERS



**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.

**DB107**  
BRIDGE RECTIFIERS



**Disclaimer**

- Reproducing and modifying information of the document is prohibited without permission from niuhang Electronics co., LTD
- Niuhan Electronics co., LTD. reserves the rights to make changes of the content herein the document anytime without notification.
- Niuhan Electronics co., LTD. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Niuhan Electronics co., LTD. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Niuhan Electronics co., LTD. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Niuhan Electronics co., LTD. for any damages resulting from such improper use or sale.
- When the appearance of the product and chip size does not change, in order to product the customer quality, change the internal structure and the production process Niuhan can not notify