

### MB6S THRU MB10S

#### BRIDGE RECTIFIERS



**VOLTAGE:** 600~1000 Volts

**CURRENT:** 1.0 Amper

**MBS**

**Marking & Schematic diagram**

#### FEATURES

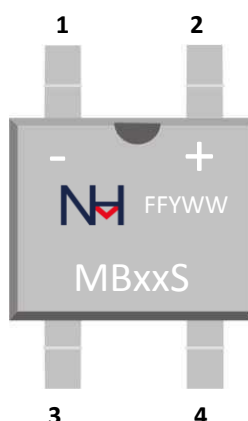
- Glass passivated die construction
- low forward voltage drop
- High surge current capability(IFSM)
- Small high-temperature leakage current(IR)
- Good consistency in electrical performance

#### MECHANICAL DATA

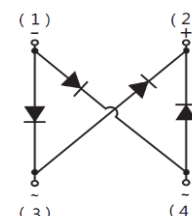
- **Case:** MBS  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Mounting Position:** Any
- **Weight:** App. 0.107 grams(0.0038 ounce)

#### TYPICAL APPLICATIONS

- For use in switch power supply ,LED Driver ,  
Charger applications



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



Remark:

- ①. NH=niu hang trademark
- ②. FF=Product line code,According to actual changes  
YWW=Data code,According to actual changes
- ③. MBxxF=Modle,xx=6,8,10
- ④. "- +"=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	MB6S	MB8S	MB10S	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	600	800	1000	V
Maximum RMS Voltag	$V_{RMS}$	420	560	700	V
Maximum DC Blocking Voltage	$V_{DC}$	600	800	1000	V
Maximum Average Forward Rectified Current @ TC=100°C (see fig.1)	$I_{F(AV)}$	1.0			A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method)	$I_{FSM}$	30			A
Current Squared Time Per Diode( $t < 8.3ms$ )	$I^2t$	3.74			A <sup>2</sup> sec

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

Parameter	Test Conditions	Symbol	MB6S	MB8S	MB10S	Unit
Maximum Forward Voltage Per Diode (Note 1)	Ta=25°C IF= 1mper A	$V_{FM}$	1.1			V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1)	Ta=25°C @ VR V	$I_{RRM}$	5			uA
	Ta=125°C @ VR V		300			
Typical Junction Capacitance Per Diode	4V,1MHz	$C_J$	13			pF

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

Parameter	Symbol	MB6S	MB8S	MB10S	Unit
Operating Junction Temperature Range	$T_J$	-55 to +150			°C
Storage Temperature Range	$T_{STD}$	-55 to +150			
Typical thermal resistance (Note 2)	$R_{\theta JA}$	85			°C/W
	$R_{\theta JC}$	25			

- 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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**RATING AND CHARACTERISTIC CURVES**

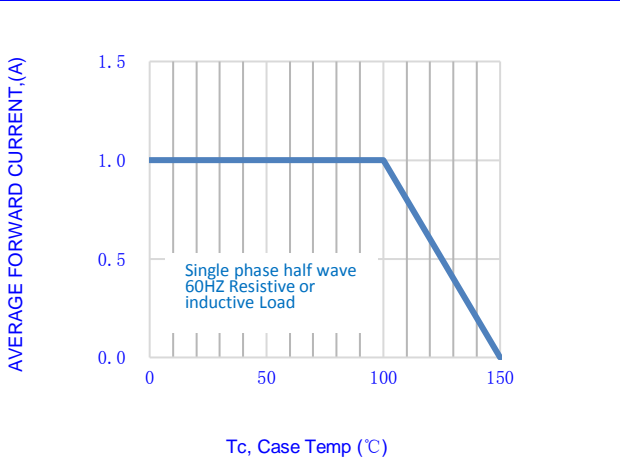


Fig.1-FORWARD CURRENT DERATING CURVE

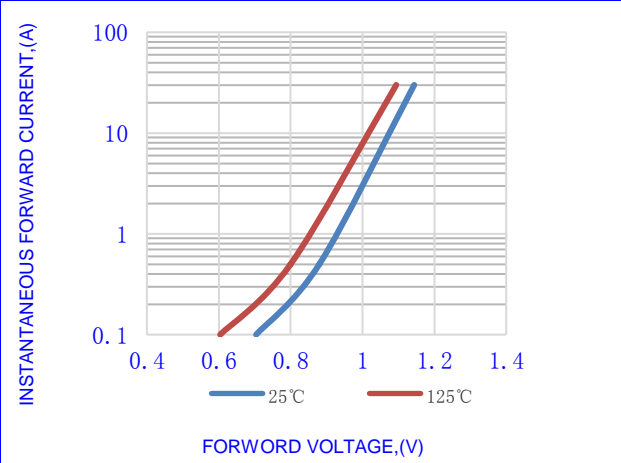


Fig.2- TYPICAL INSTANTANEOUS FORWARD

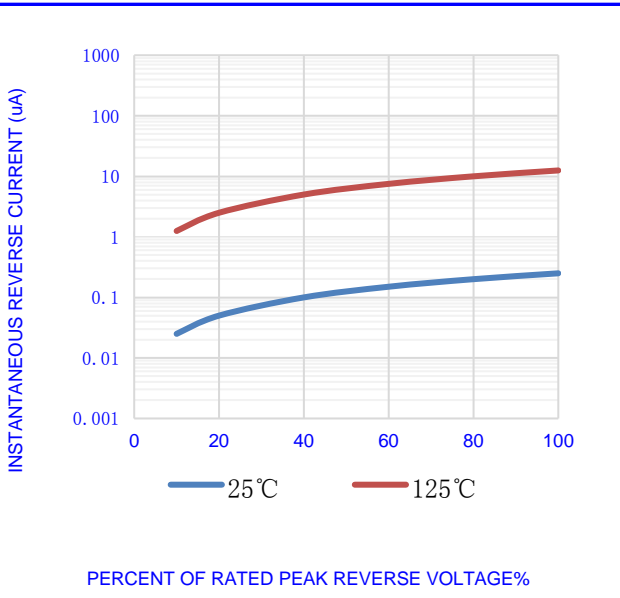


Fig.3- TYPICAL REVERSE CHARACTERISTICS

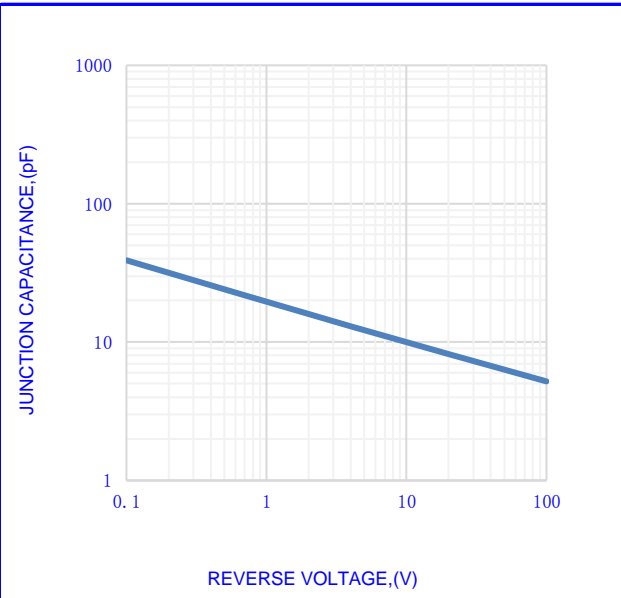


Fig.4- TYPICAL JUNCTION CAPACITANCE

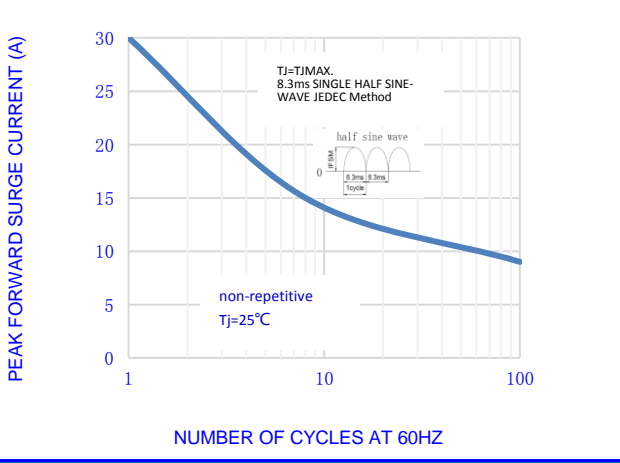


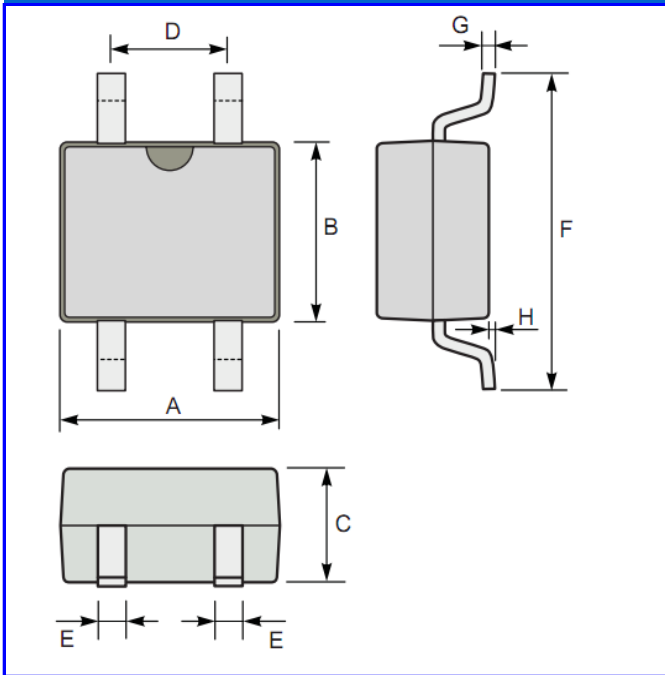
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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**OUTLINE DRAWINGS**

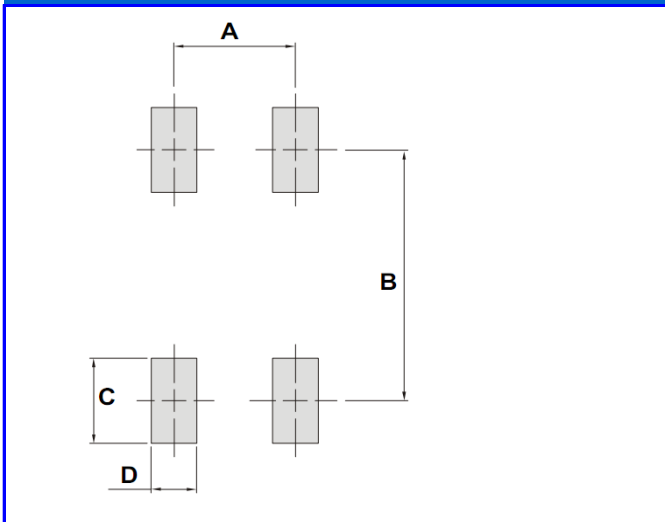
**MBS**



OUTLINE DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.500	-	4.900	0.177	-	0.193
B	3.600	-	4.000	0.142	-	0.157
C	2.300	-	2.700	0.091	-	0.106
D	2.200	-	2.800	0.087	-	0.110
E	0.450	-	1.050	0.018	-	0.041
F	6.600	-	7.000	0.260	-	0.276
G	0.150	-	0.350	0.006	-	0.014
H	-	-	0.200	-	-	0.008

**Recommended Mounting Pad Layout**

**MBS**



RECOMMENDED LAYOUT DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	2.400	-	-	0.0945	-
B	-	6.000	-	-	0.2362	-
C	-	1.840	-	-	0.0724	-
D	-	0.900	-	-	0.0354	-

**PACKING INFORMATION**

**MBS**

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

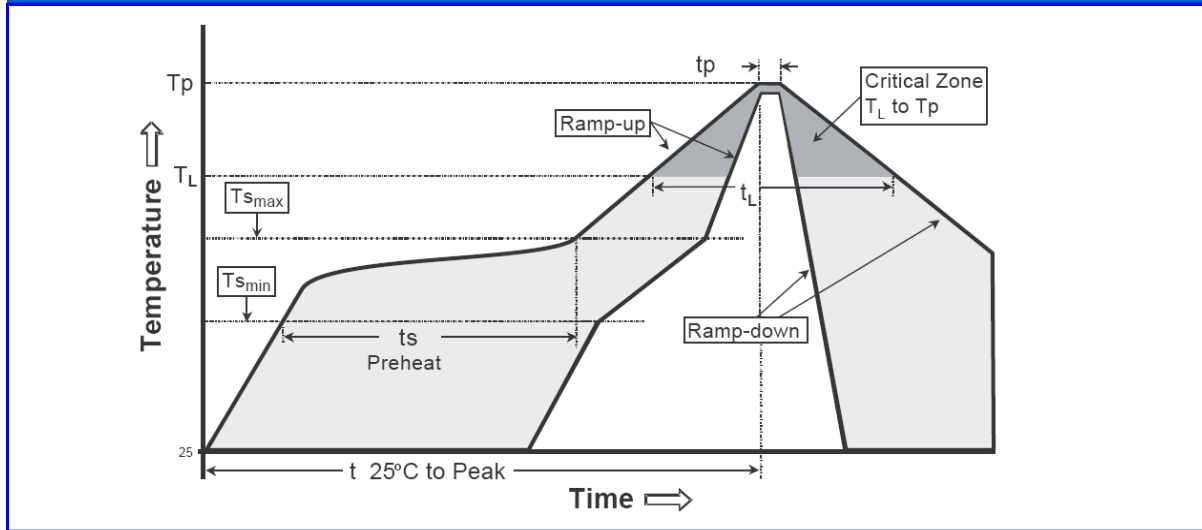
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**Recommended wave soldering condition**

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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