

MB24F

SURFACE MOUNT SHOTTKY BRIDGE



VOLTAGE: 40 Volts	CURRENT: 2.0 Amper	MBF	Marking & Schematic diagram
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FEATURES

- Reverse Voltage - 40V
- Forward Current - 2 A
- Schottky chip
- High Speed Switching

MECHANICAL DATA

- Case:** MBF
- 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. 0.077 grams (0.0027 ounce)

TYPICAL APPLICATIONS

- For use in switch DC-DC inverters

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

Remark:

- NH=niuhang trademark
- FF=Product line code,According to actual changes
YWW=Data code,According to actual changes
- MB24F=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	MB24F	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	40	V
Maximum RMS Voltag	V_{RMS}	28	V
Maximum DC Blocking Voltage	V_{DC}	40	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 ² sec

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

Parameter	Test Conditions		Symbol	MB24F			Unit
				Min.	Typ.	Max.	
Maximum Forward Voltage Per Diode (Note 1)	Ta=25°C	IF= 2.0 A	V_{FM}	--	0.50	0.53	V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1)	Ta=25°C	VR= 40 V	I_{RRM}	--	--	50	uA
	Ta=125°C	VR= 40 V		--	--	10	mA
Typical Junction Capacitance Per Diode	4V,1MHz		C_J	--	220	--	pF

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

Parameter	Symbol	MB24F	Unit
Operating Junction Temperature Range	T_J	-55 to 150	°C
Storage Temperature Range	T_{STD}	-55 to 150	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	75.0	°C/W
	$R_{\theta JL}$	20.0	

- 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

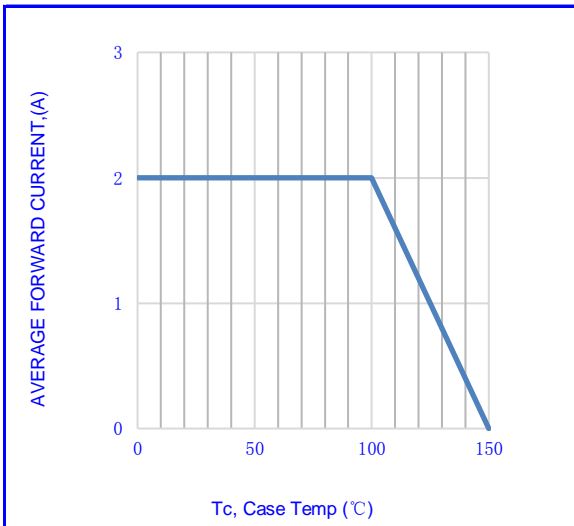


Fig.1-FORWARD CURRENT DERATING CURVE

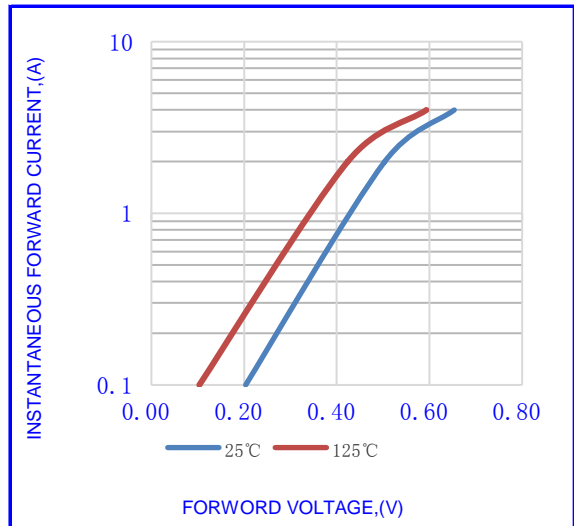


Fig.2- TYPICAL INSTANTANEOUS FORWARD

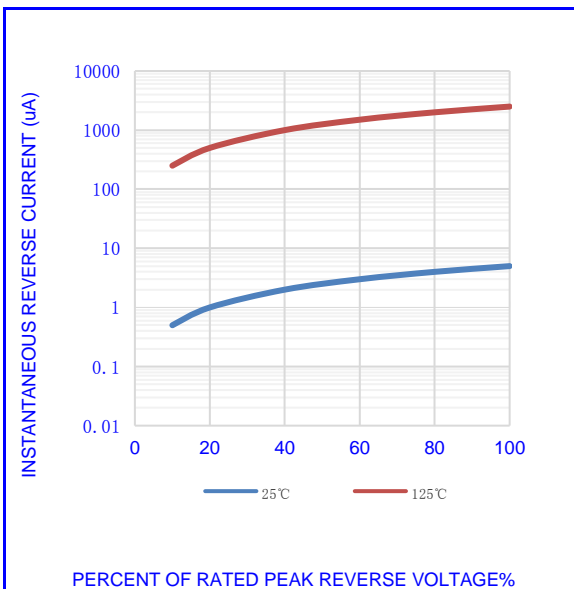


Fig.3- TYPICAL REVERSE CHARACTERISTICS

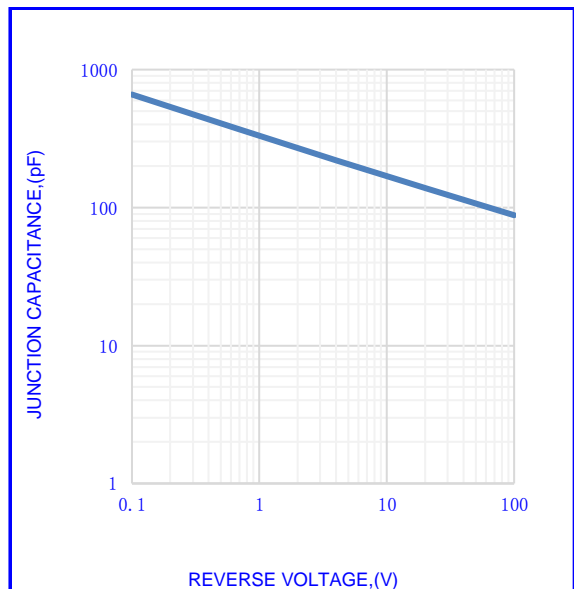


Fig.4- TYPICAL JUNCTION CAPACITANCE

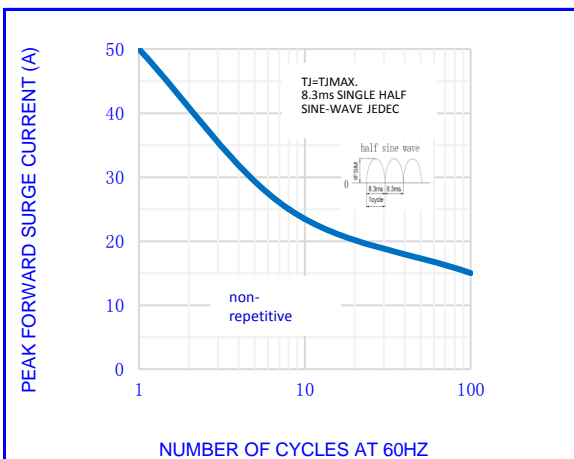


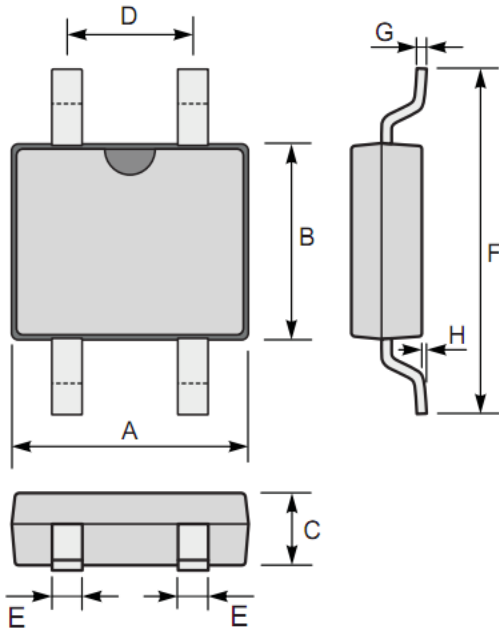
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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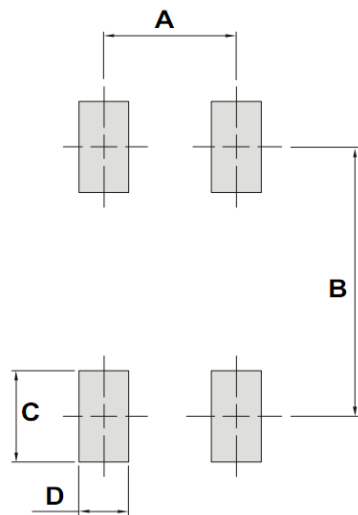
OUTLINE DRAWINGS



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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	1.200	-	1.600	0.047	-	0.063
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 LAYOUT DRAWINGS



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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

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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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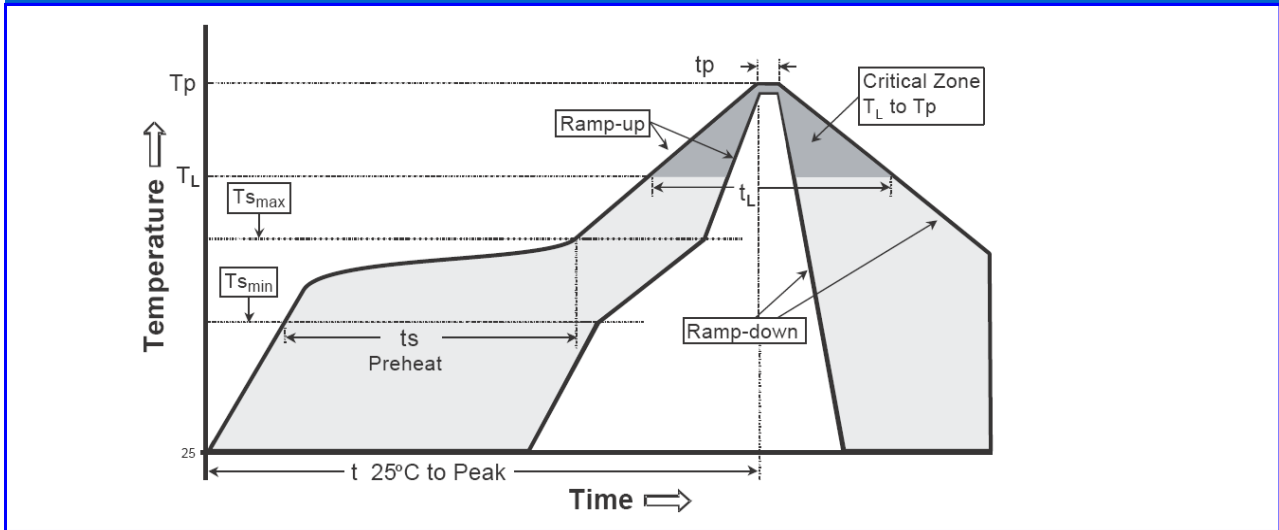
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Recommended wave soldering condition

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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