

MB24S

SURFACE MOUNT SHOTTKY BRIDGE



VOLTAGE: 1000 Volts	CURRENT: 1.0 Amperes	MBS	Marking & Schematic diagram										
FEATURES		<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(-)												
<ul style="list-style-type: none"> ■ Reverse Voltage - 40V ■ Forward Current - 2 A ■ Schottky chip ■ High Speed Switching 													
MECHANICAL DATA		<p>Remark:</p> <ul 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. MB24S=Modle ④. "- +"=Polarity mark 											
<ul style="list-style-type: none"> ■ Case: MBS ■ 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. 0.107 grams (0.0038 ounce) 													
TYPICAL APPLICATIONS													
<ul style="list-style-type: none"> ■ For use in switch DC-DC inverters 													

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	MB24S	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 ² sec

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

Parameter	Test Conditions		Symbol	MB24S			Unit
				Min.	Typ.	Max.	
Maximum Forward Voltage Per Diode (Note 1)	Ta=25°C	IF= 1.0 A	V_{FM}	--	0.50	0.53	V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1)	Ta=25°C	VR= 1000 V	I_{RRM}	--	--	50	uA
	Ta=125°C	VR= 1000 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	MB24S		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:
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

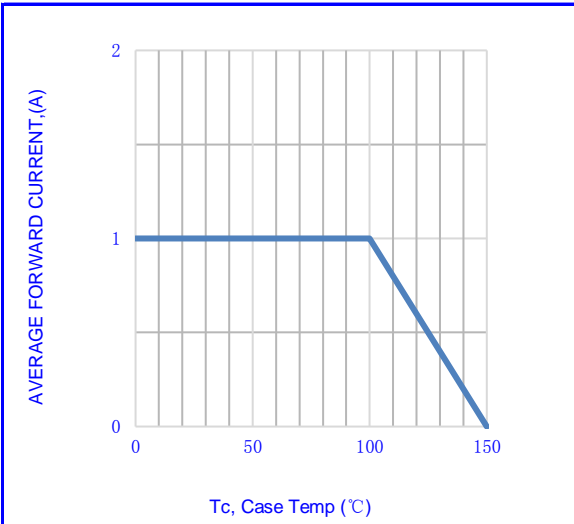


Fig.1-FORWARD CURRENT DERATING CURVE

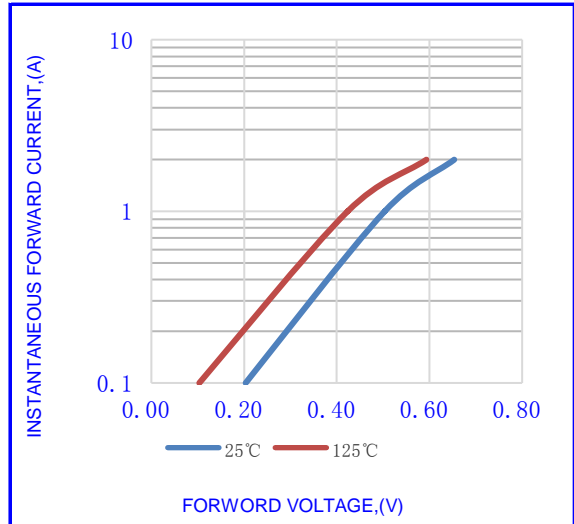


Fig.2- TYPICAL INSTANTANEOUS FORWARD

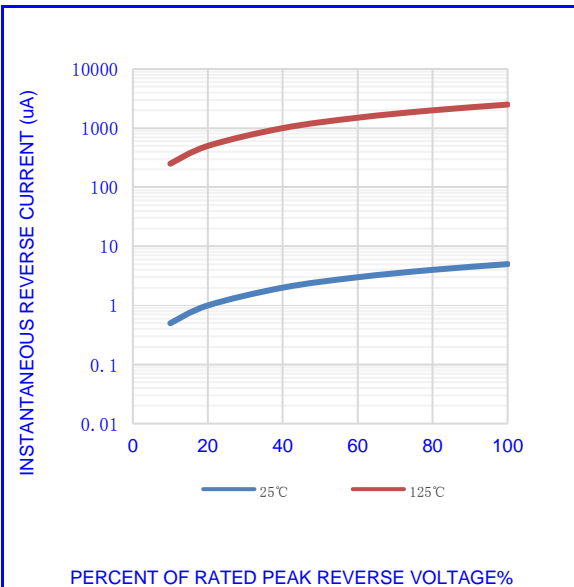


Fig.3- TYPICAL REVERSE CHARACTERISTICS

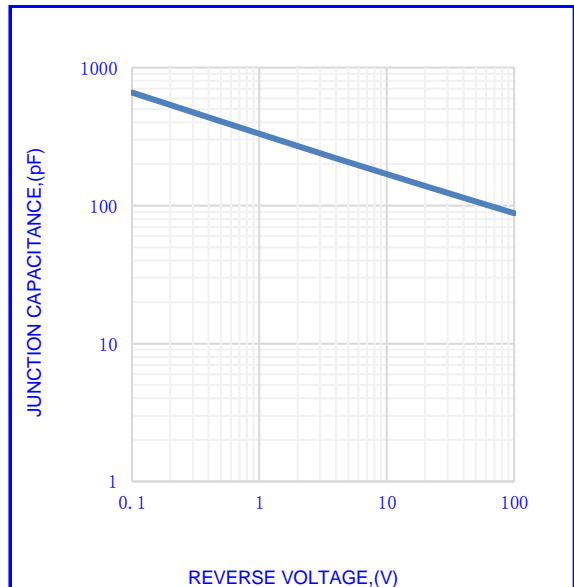


Fig.4- TYPICAL JUNCTION CAPACITANCE

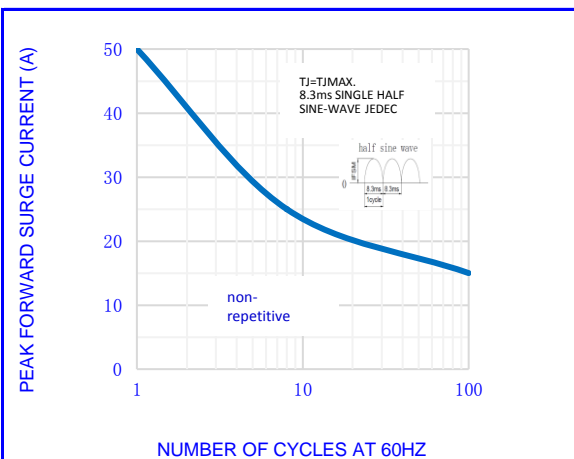


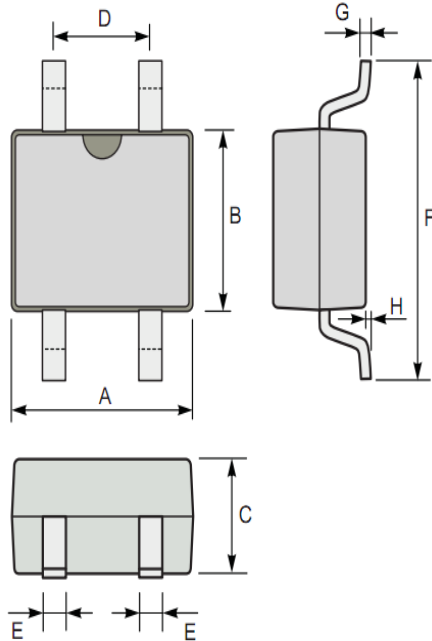
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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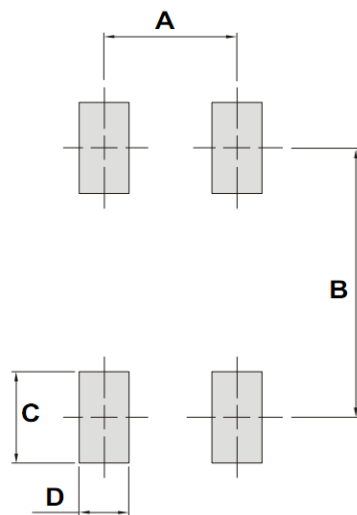
OUTLINE DRAWINGS



MBS

OUTLINE DIMENSIONS						
Dim.	Milimeters			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 LAYOUT DRAWINGS



MBS

RECOMMENDED LAYOUT DIMENSIONS						
Dim.	Milimeters			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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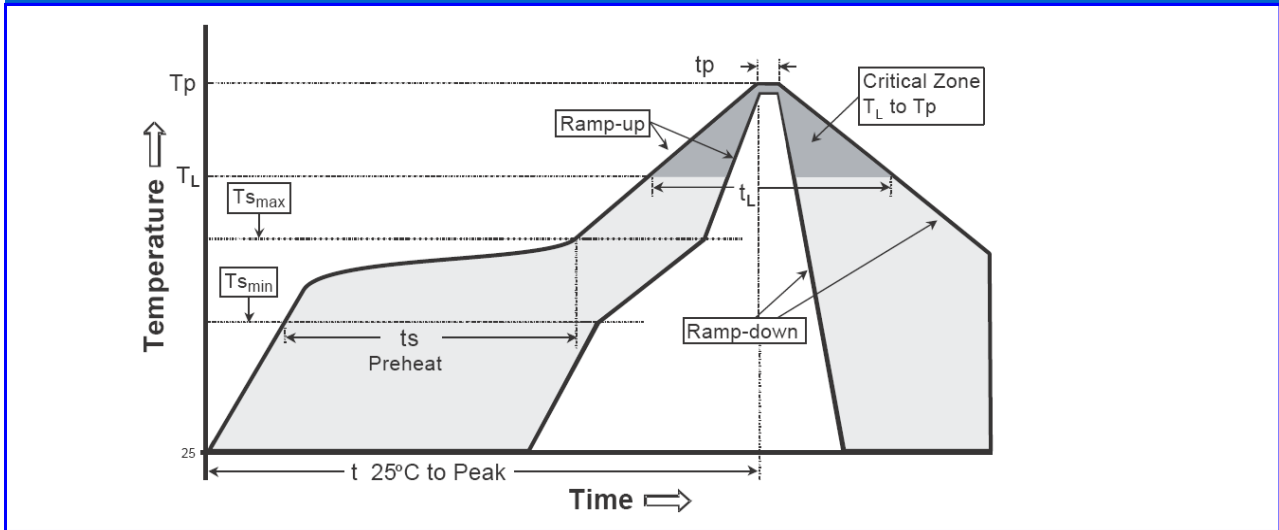
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Recommended wave soldering condition

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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