

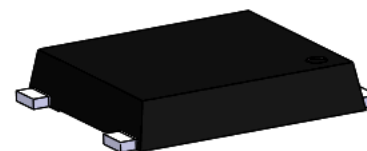
MSB25MH(LS)

**GLASS PASSIVATED
SURFACE MOUNT BRIDGE RECTIFIER**

**REVERSE VOLTAGE – 1000 Volts
FORWARD CURRENT – 2.5 Amperes**

GENERAL DESCRIPTION

Suitable for AC-to-DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.



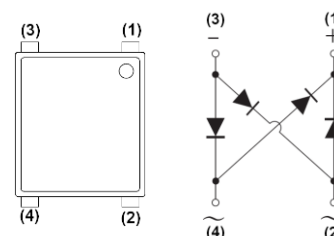
FEATURES

- Rating to 1000V PRV
- Ideal for SMT manufacturing
- Compact, thin profile package design
- Reliable robust construction
- UL recognized file #E364304
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

MECHANICAL DATA

- Package Material: Green molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl.)
- Polarity indicator: Symbol molded on body
- Weight: 216mg (Approximate)

Pin Assignment



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

MAXIMUM RATINGS @ T_A = 25°C, unless otherwise specified

PARAMETER		SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		V _{RRM}	1000	V
Maximum DC blocking voltage		V _{DC}	1000	V
Average rectified output current per device	T _C = 110°C	I _(AV)	2.5	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	T _J = 25°C	I _{FSM}	80	A
	T _J = 125°C		64	
Peak forward surge current 1ms single half sine-wave superimposed on rated load	T _J = 25°C	I _{FSM}	160	A
	T _J = 125°C		128	
I ² t rating for fusing (t = 8.3ms)		I ² t	26.5	A ² s
Operating and storage temperature range		T _J , T _{STG}	-55 to +150	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION		SYMBOL	TYP	MAX	UNIT
Forward voltage	I _F = 1.25A	T _J = 25°C	V _F	--	1.02	V
		T _J = 125°C		0.78	--	
	I _F = 2.5A	T _J = 25°C T _J = 125°C		-- 0.86	1.1 --	
Leakage current	V _R = 1000V	T _J = 25°C T _J = 125°C	I _R	--	5 500	uA
Typical junction capacitance (Note 4)			C _T	30		pF

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance (Note 5)	RthJ _A	35	°C/W
	RthJ _C	7.8	
	RthJ _L	16	

Notes:

- EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
- See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
- Thermal resistance test performed in accordance with JESD-51. Unit mounted on glass-epoxy substrate with 1oz/ft² 30mm x 30mm copper pad per pin.

RATING AND CHARACTERISTIC CURVES

MSB25MH

FIG.1- FORWARD CURRENT DERATING CURVE

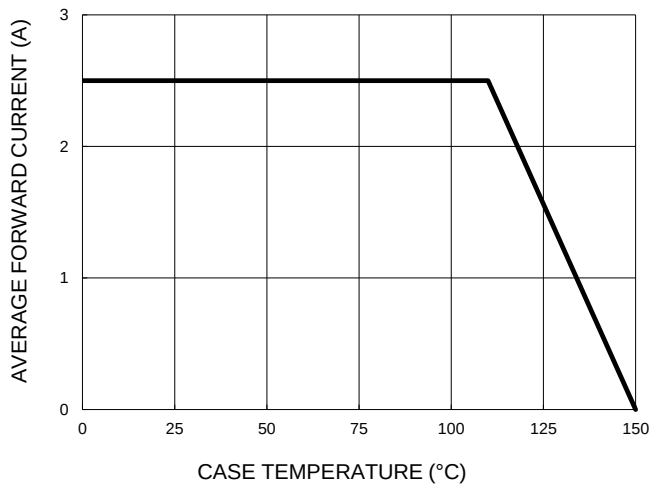


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

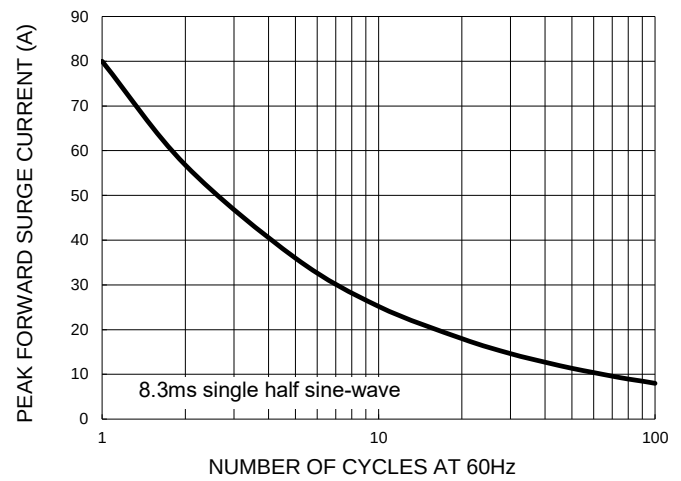


FIG.3- TYPICAL FORWARD CHARACTERISTICS

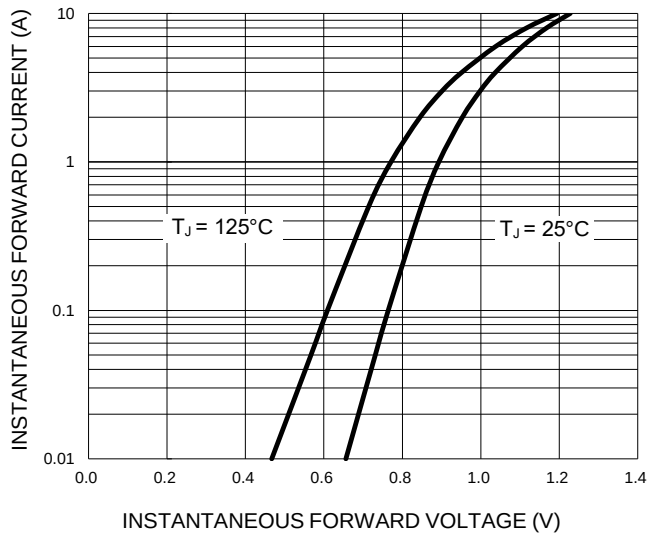


FIG.4- TYPICAL JUNCTION CAPACITANCE

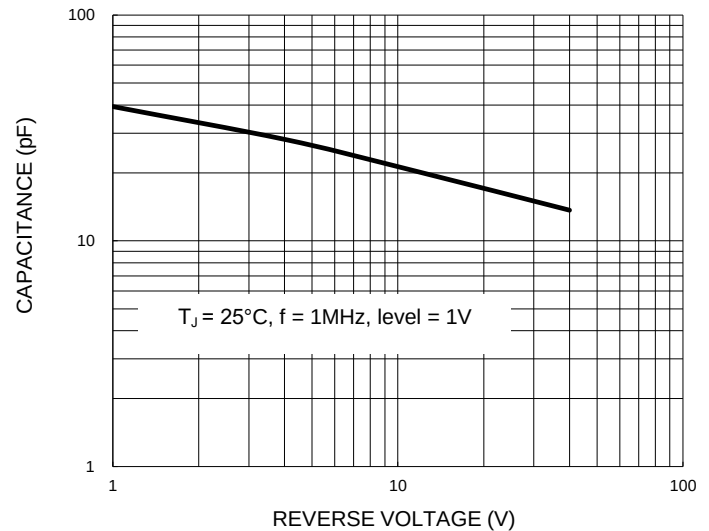


FIG.5- TYPICAL REVERSE CHARACTERISTICS

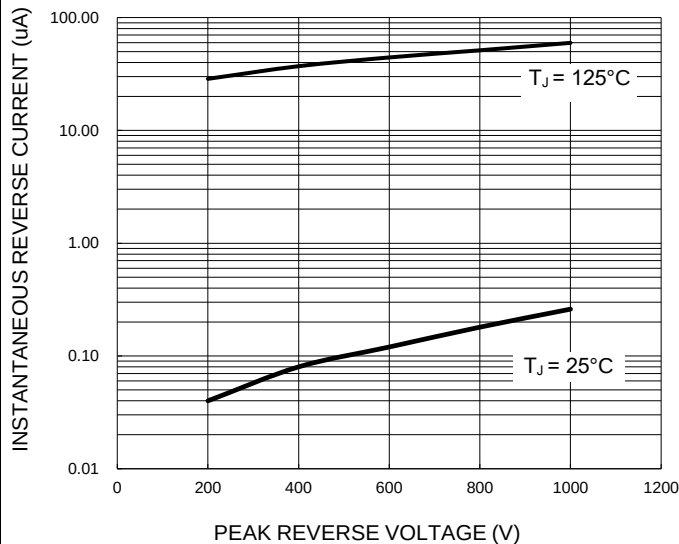
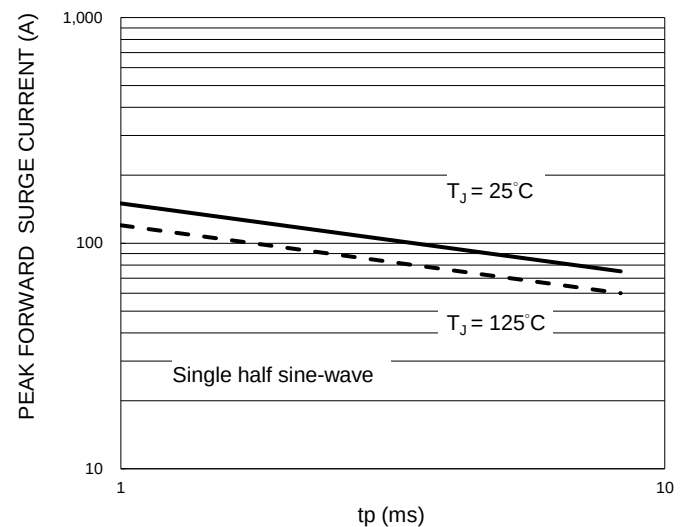


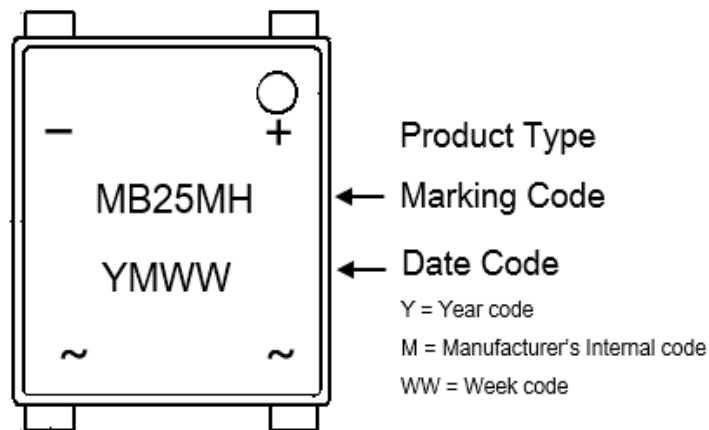
FIG.6- NON-REPETITIVE SURGE CURRENT



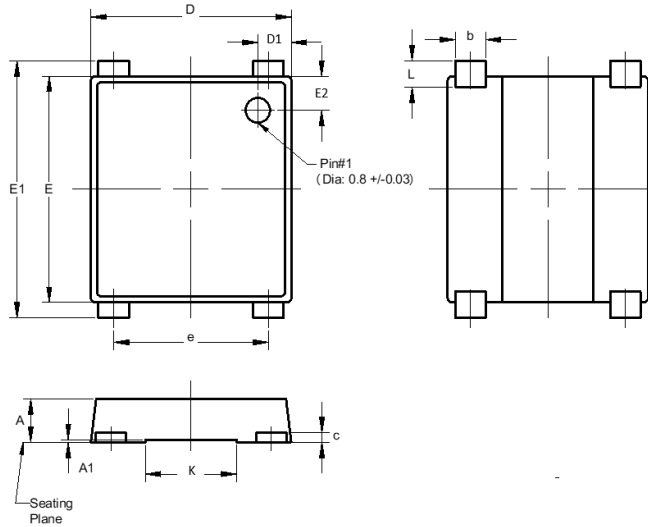
Ordering Information :

Part Number	Package	Packing	
		Qty.	Carrier
MSB25MH_HF	MSBL	2500pcs	Tape & Reel

Marking Information :

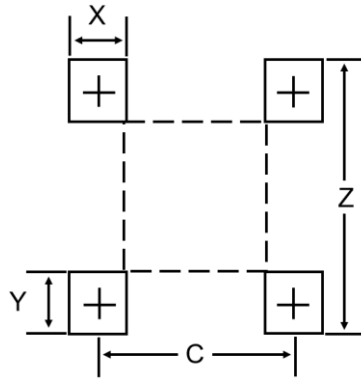


Package Dimensions :



MSBL		
Dim	Min	Max
A	1.30	1.50
A1	0.04	0.08
C	0.27	0.40
D	6.50	6.70
D1	0.95	1.25
E	7.20	7.40
E1	7.90	8.60
E2	0.95	1.25
L	0.65	1.05
b	0.95	1.15
e	5.00	5.20
K	2.90	3.10
All Dimensions in mm		

Suggested Pad Layout :

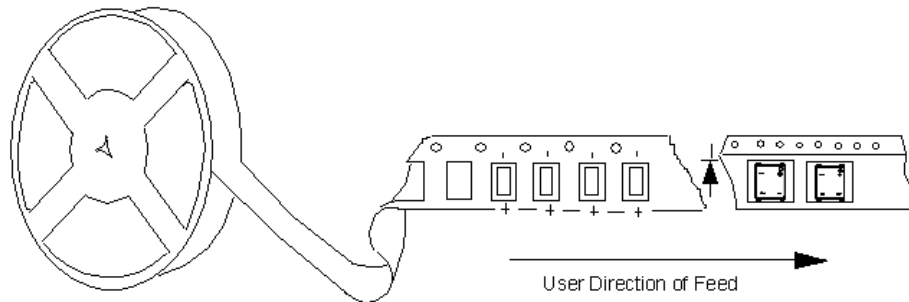


Dimensions	Value (in mm)
C	5.40
X	2.00
Y	2.50
Z	10.71

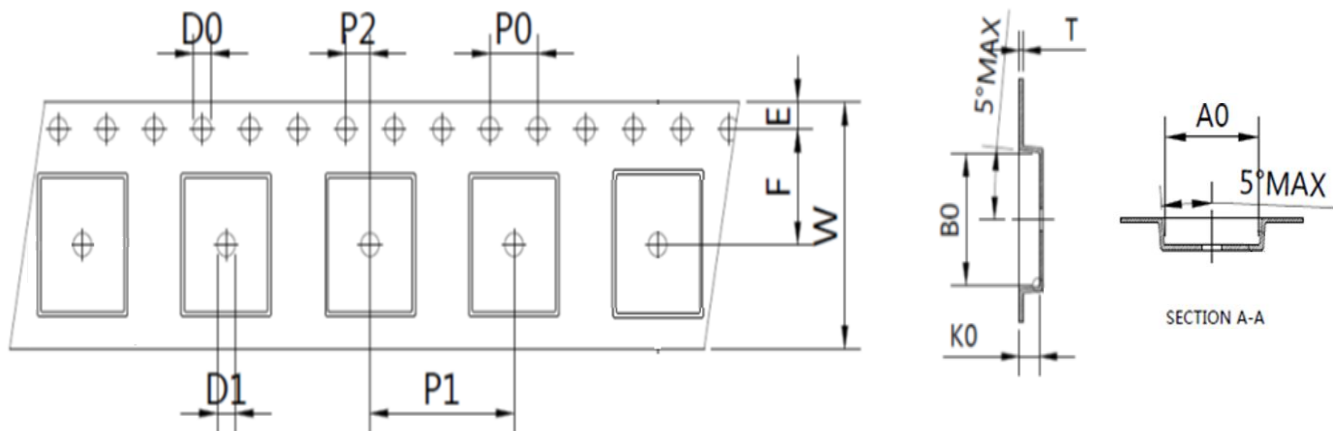
Packaging Information :

Package	Qty./Reel (Pcs)	Reel Dia. (mm)	Carton Size (mm)	Qty./Carton MOQ (Pcs)
MSBL	2500	330	355*345*245	25k

Polar Units



Embossed Carrier Dimensions :



Unit: mm

DIM.	A0	B0	K0	P0	P1	P2
SPEC	7.00±0.10	8.85±0.10	1.70±0.10	4.00±0.10	12.0±0.10	2.00±0.10
DIM.	T	E	F	D0	D1	W
SPEC	0.30±0.05	1.75±0.10	7.50±0.10	1.50±0.1	1.50(min)	16.00±0.30

Remark: 10 Sprocket hole pitch cumulative tolerance is ±0.20mm

Typical IR Reflow Soldering Thermal Profile :

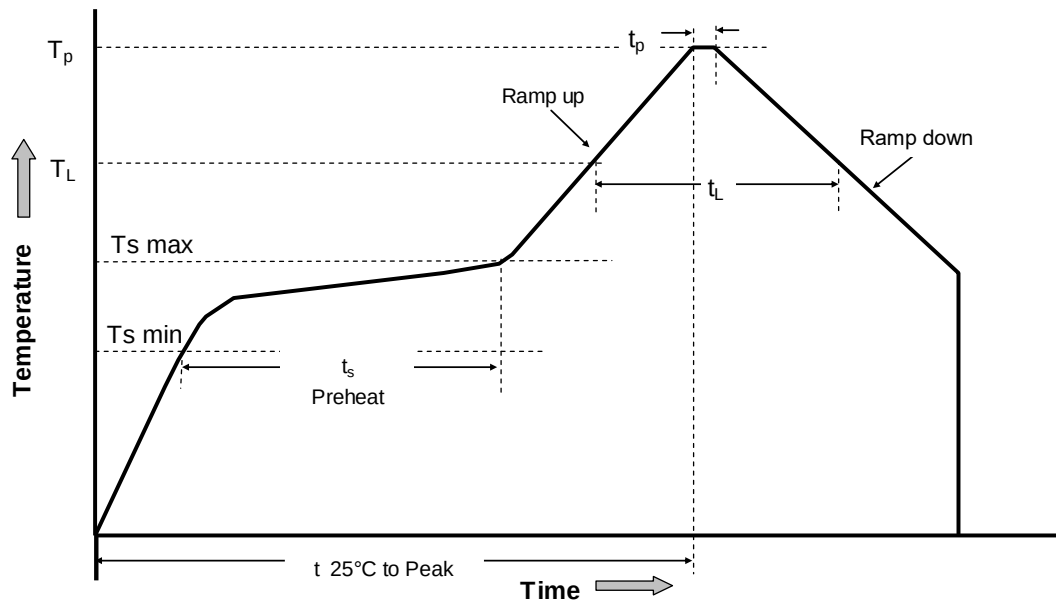


Table 1- Reflow profile

Reflow condition	Sn-Pb assembly	Pb-free assembly
Average ramp-up rate (Liquidus Temperature (TL) to Peak)	3 °C/second max.	3 °C/second max.
Preheat		
--Temperature Min, Ts (Min)	100 °C	150 °C
--Temperature Max, Ts (Max)	150 °C	200 °C
--Time (min to max, ts)	60-120 seconds	60-180 seconds
Ts(max) to TL - Ramp-up Rate		3 °C/second max.
Time maintained above:		
--Temperature(TL)	183 °C	217 °C
--Time(tL)	60-150 seconds	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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