

Product Summary

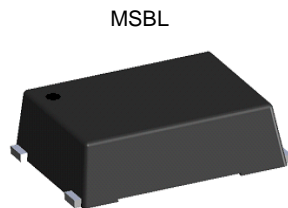
V _{RRM} (V)	I _F (A)	V _F Max (V) @ I _F = 2A	I _R Max (μA)
600 800 1000	4	1.0	5

General Description

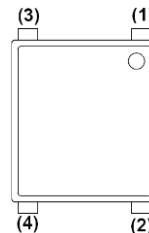
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapters, battery chargers, home appliances, office equipment and telecommunication applications.

Mechanical Data

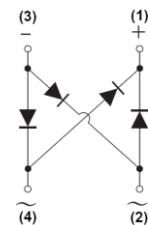
- Package: MSBL
- Package Material: Plastic Material, UL Flammability Classification 94V-0 (No Br, Sb, Cl)
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (3)
- Polarity Indicator: Symbol Molded on Body.
- Weight: 0.216 grams (Approximate)



Top View



Pin Diagram



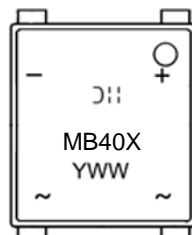
Internal Schematic

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
MSB40J-13	MSBL	2500pcs	Tape & Reel
MSB40K-13	MSBL	2500pcs	Tape & Reel
MSB40M-13	MSBL	2500pcs	Tape & Reel

- 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.
 - For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



MB40X = Product Type Marking Code
 X = J or K or M
)|| = Manufacturer's Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 3 = 2023)
 WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	MSB40J	MSB40K	MSB40M	Unit
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	600	800	1000	V
Maximum DC Blocking Voltage	V _{DC}	600	800	1000	V
Maximum Average Rectified Output Current With Heatsink	I _{F(AV)}	4			A
Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load T _J = +25°C	I _{FSM}	110			A
I ² t Rating for Fusing (t = 8.3ms)	I ² t	50.2			A ² s
Operating Temperature Range	T _J	-55 to +150			°C
Storage Temperature Range	T _{STG}	-55 to +150			°C

Electrical Characteristics

Characteristic	Test Conditions	Symbol	Typ	Max	Unit
Forward Voltage (Note 5)	I _F = 2A T _J = +25°C	V _F	—	1.0	V
	I _F = 4A T _J = +25°C		—	1.1	
Leakage Current	V _R at Rated T _J = +25°C T _J = +125°C	I _R	—	5 500	μA
Typical Total Junction Capacitance (Note 6)		C _T	31	—	pF

Thermal Characteristics

Characteristic	Symbol	Typ	Unit
Typical Thermal Resistance (Without Heatsink)	R _{θJC}	18	°C/W
	R _{θJL}	14	
	R _{θJA}	77	
Typical Thermal Resistance (Note 7)	R _{θJC}	6	°C/W
	R _{θJL}	7	
	R _{θJA}	21	

- Notes:
5. Perform static test after the temperature of oven is steady for 20 minutes.
 6. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
 7. Device mounted on 100mm x 100mm x 1.6mm Cu heatsink.

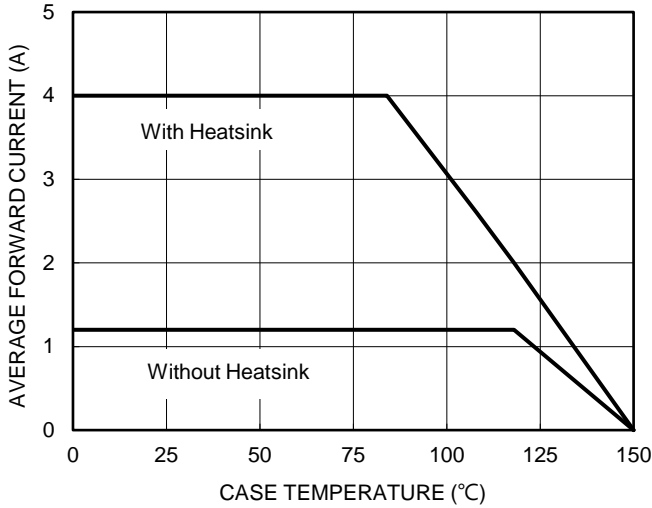


Figure 1. Forward Current Derating Curve

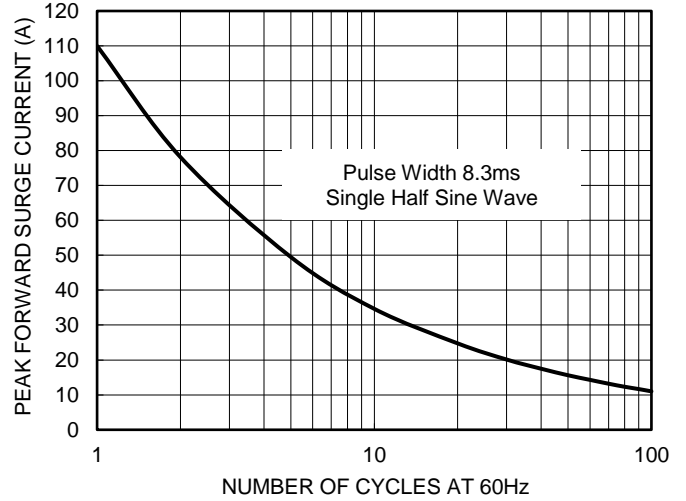


Figure 2. Maximum Non-Repetitive Surge Current

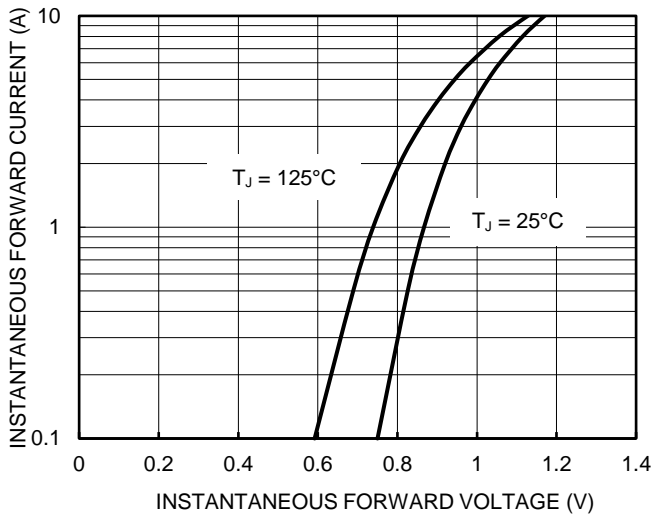


Figure 3. Typical Forward Characteristics

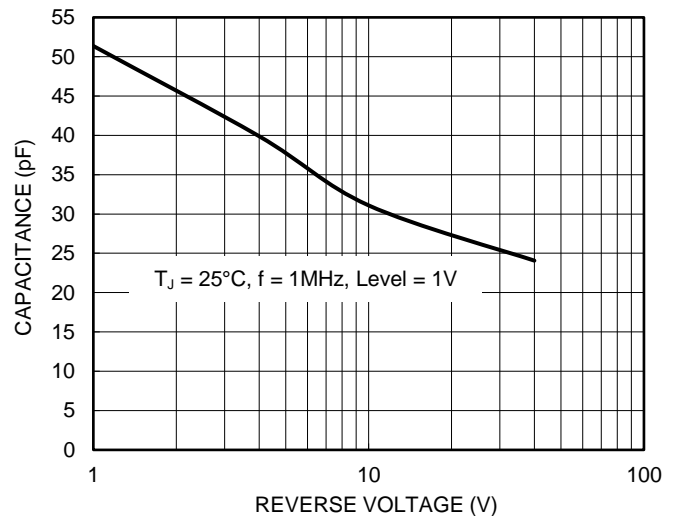


Figure 4. Typical Junction Capacitance

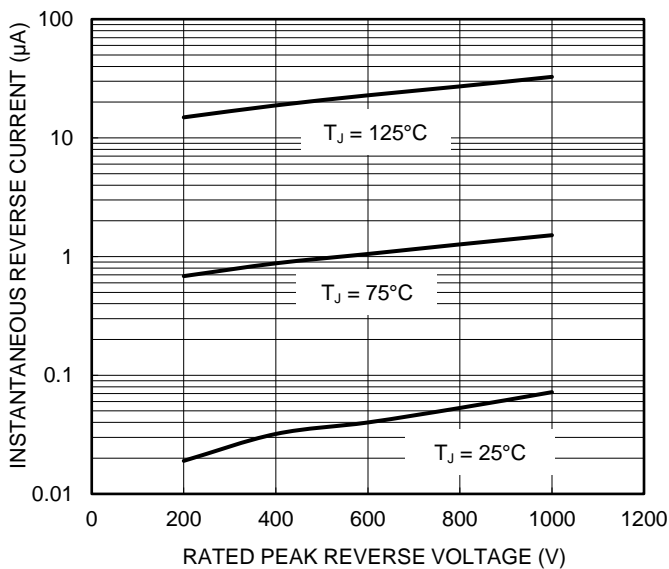


Figure 5. Typical Reverse Characteristics

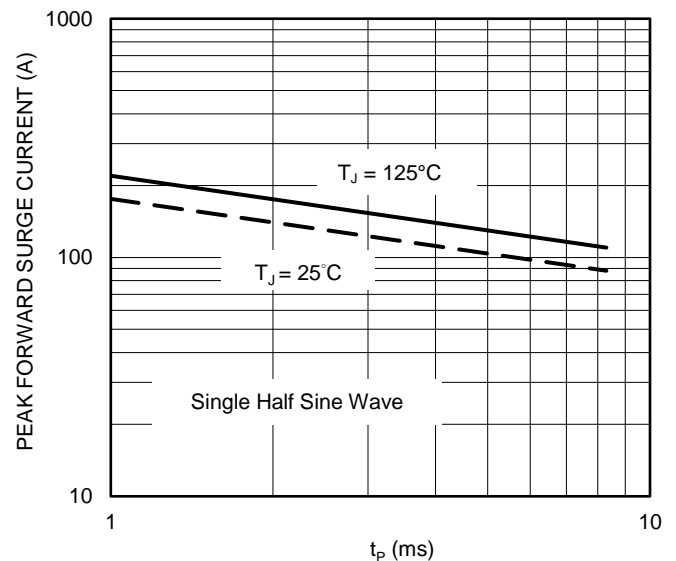
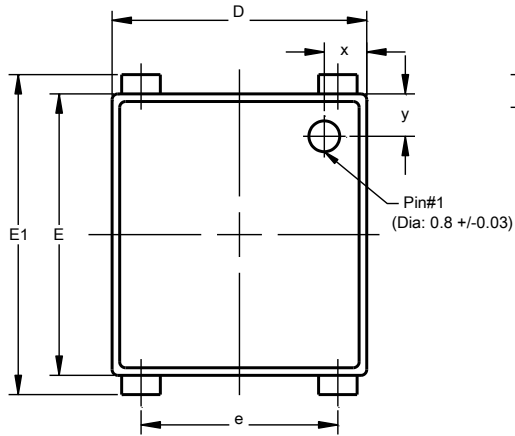


Figure 6. Non-Repetitive Surge Current

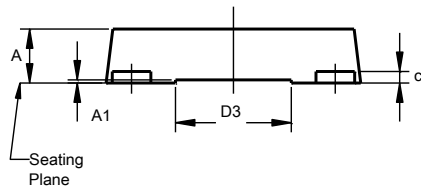
Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

MSBL



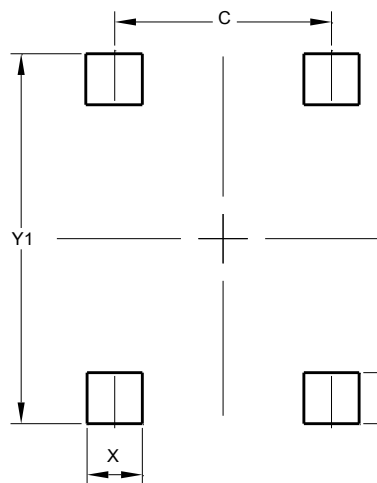
MSBL			
Dim	Min	Max	Typ
A	1.30	1.50	1.40
A1	0.04	0.08	0.06
b	0.95	1.15	1.00
c	0.27	0.40	0.30
D	6.50	6.70	6.60
D3	2.90	3.10	3.00
E	7.20	7.40	7.30
E1	7.90	8.60	8.30
e	5.00	5.20	5.10
L	0.65	1.05	0.85
x	0.95	1.25	1.10
y	0.95	1.25	1.10
All Dimensions in mm			



Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

MSBL



Dimensions	Value (in mm)
C	5.10
X	1.30
Y	1.20
Y1	8.70

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