

## 0.8A, 200V - 1000V Glass Passivated Bridge Rectifiers

### FEATURES

- Ideal for automated placement
- Reliable low cost construction utilizing molded plastic technique
- High surge current capability
- UL Recognized File # E-326854
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



MBS



### MECHANICAL DATA

**Case:** Molded plastic body

Molding compound, UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Part no. with suffix "H" means AEC-Q101 qualified

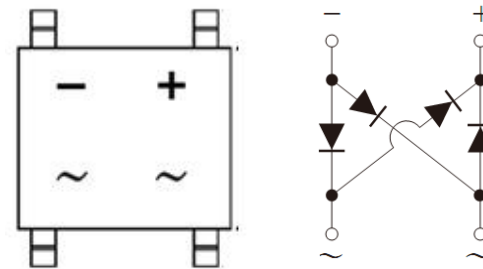
Packing code with suffix "G" means green compound (halogen-free)

**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

**Polarity:** Polarity as marked on the body

**Weight:** 0.12 g (approximately)



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                  |                    |              |      |      |      |       |                  |
|---------------------------------------------------------------------------------------------------------------|--------------------|--------------|------|------|------|-------|------------------|
| PARAMETER                                                                                                     | SYMBOL             | MBS2         | MBS4 | MBS6 | MBS8 | MBS10 | Unit             |
| Maximum repetitive peak reverse voltage                                                                       | V <sub>RRM</sub>   | 200          | 400  | 600  | 800  | 1000  | V                |
| Maximum RMS voltage                                                                                           | V <sub>RMS</sub>   | 140          | 280  | 420  | 560  | 700   | V                |
| Maximum DC blocking voltage                                                                                   | V <sub>DC</sub>    | 200          | 400  | 600  | 800  | 1000  | V                |
| Maximum average forward rectified current<br>On glass-epoxy P.C.B.<br>On aluminum substrate                   | I <sub>F(AV)</sub> | 0.5<br>0.8   |      |      |      |       | A                |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load                           | I <sub>FSM</sub>   | 35           |      |      |      |       | A                |
| Maximum instantaneous forward voltage (Note 1)<br>I <sub>F</sub> = 0.4 A                                      | V <sub>F</sub>     | 1.0          |      |      |      |       | V                |
| Maximum DC reverse current<br>at rated DC blocking voltage<br>T <sub>J</sub> =25 °C<br>T <sub>J</sub> =125 °C | I <sub>R</sub>     | 5<br>100     |      |      |      |       | μA               |
| Rating for fusing (t<8.3ms)                                                                                   | I <sup>2</sup> t   | 5.08         |      |      |      |       | A <sup>2</sup> s |
| Typical junction capacitance per leg (Note 2)                                                                 | C <sub>J</sub>     | 13           |      |      |      |       | pF               |
| (Note 3)                                                                                                      | R <sub>θJL</sub>   | 20           |      |      |      |       | °C/W             |
| Typical thermal resistance (Note 4)                                                                           | R <sub>θJA</sub>   | 70           |      |      |      |       |                  |
| (Note 3)                                                                                                      | R <sub>θJA</sub>   | 85           |      |      |      |       |                  |
| Operating junction temperature range                                                                          | T <sub>J</sub>     | - 55 to +150 |      |      |      |       | °C               |
| Storage temperature range                                                                                     | T <sub>STG</sub>   | - 55 to +150 |      |      |      |       | °C               |

Note 1: Pulse Test with PW=300μs, 1% Duty Cycle

Note 2: Measure at 1.0MHz and Applied Reverse Voltage of 4.0 Volts D.C.

Note 3: On glass epoxy P.C.B. mounted on 0.05" x 0.05" (1.3mm x 1.3mm) pads

Note 4: On aluminum substrate P.C.B. with an area of 0.8" x 0.8" (20mm x 20mm) mounted on 0.05" x 0.05" (1.3mm x 1.3mm) solder pads

**ORDERING INFORMATION**

| PART NO.            | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | PACKAGE | PACKING                |
|---------------------|-----------------|--------------|---------------------|---------|------------------------|
| MBSx<br>(Note 1, 2) | H               | RC           | G                   | MBS     | 3,000 / 13" Paper reel |

Note 1: "x" defines voltage from 200V (MBS2) to 1000V (MBS10)

Note 2: Whole series with green compound

**EXAMPLE**

| PREFERRED PART NO. | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
|--------------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| MBS10HRCG          | MBS10    | H               | RC           | G                   | AEC-Q101 qualified<br>Green compound |

**RATINGS AND CHARACTERISTICS CURVES**

( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

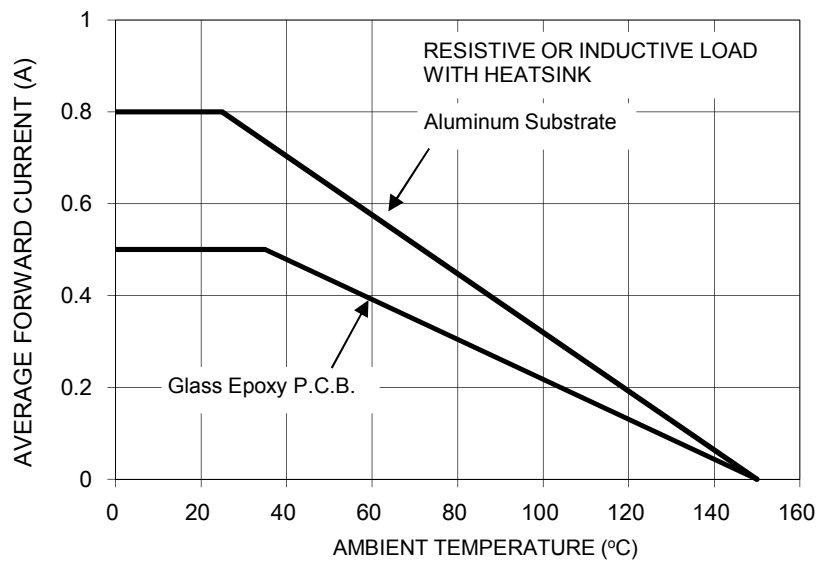


FIG. 2 TYPICAL REVERSE CHARACTERISTICS PER LEG

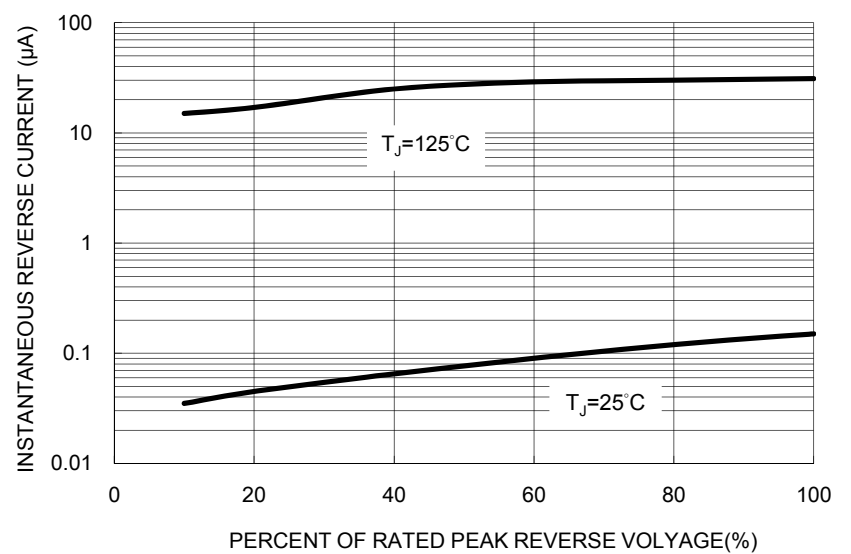


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

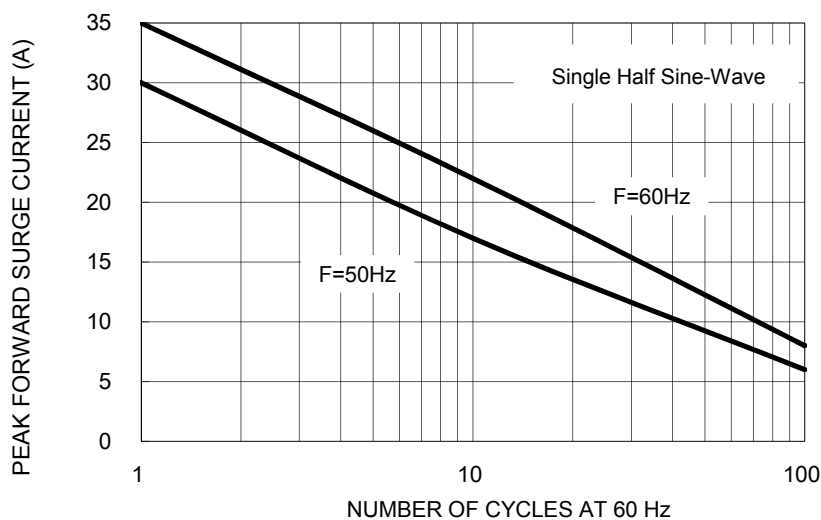


FIG. 4 TYPICAL FORWARD CHARACTERISTICS PER LEG

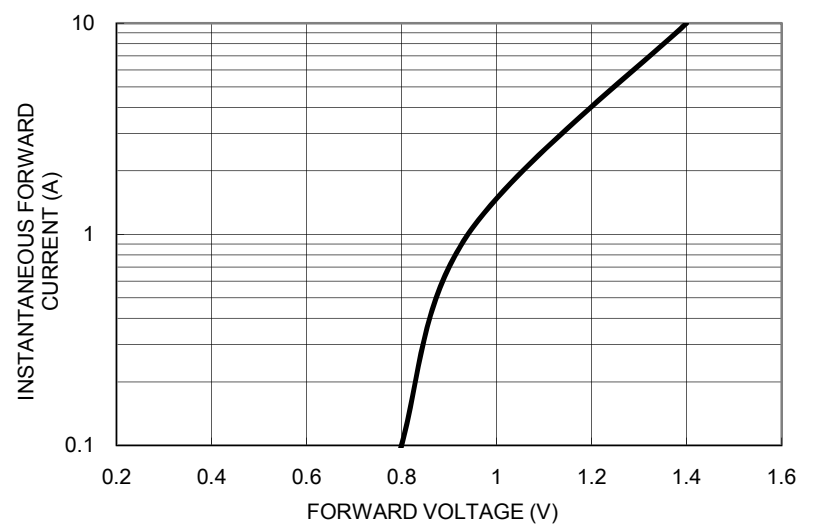
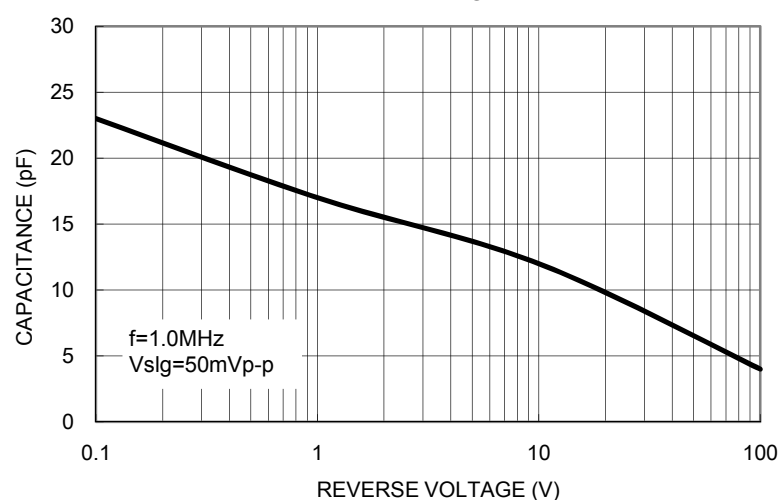
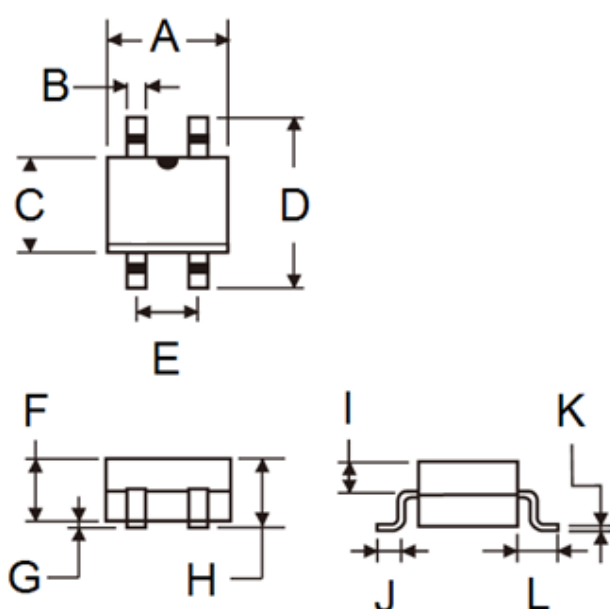


FIG. 5 TYPICAL JUNCTION CAPACITANCE  
PER LEG



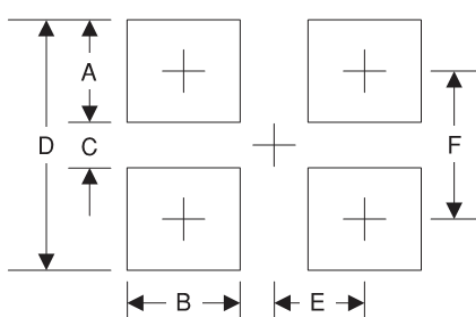
## PACKAGE OUTLINE DIMENSIONS

### MBS



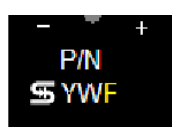
| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 4.50      | 4.90 | 0.177       | 0.193 |
| B    | 0.56      | 0.84 | 0.022       | 0.033 |
| C    | 3.60      | 5.00 | 0.142       | 0.197 |
| D    | -         | 6.90 | -           | 0.272 |
| E    | 2.20      | 2.60 | 0.087       | 0.102 |
| F    | 2.30      | 2.70 | 0.091       | 0.106 |
| G    | -         | 0.20 | -           | 0.008 |
| H    | -         | 2.90 | -           | 0.114 |
| I    | 0.95      | 1.53 | 0.037       | 0.060 |
| J    | 0.70      | 1.10 | 0.028       | 0.043 |
| K    | 0.15      | 0.35 | 0.006       | 0.014 |
| L    | 1.10      | 2.12 | 0.043       | 0.083 |

## SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 1.7       | 0.067       |
| B      | 0.9       | 0.035       |
| C      | 4.4       | 0.173       |
| D      | 8.1       | 0.319       |
| E      | 1.3       | 0.051       |
| F      | 6.3       | 0.248       |

## MARKING DIAGRAM



P/N = Specific Device Code  
YW = Date Code  
F = Factory Code

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