

**SINGLE-PHASE GLASS PASSIVATED  
SILICON BRIDGE RECTIFIER**  
VOLTAGE RANGE 50 to 1000 Volts CURRENT 3.0 Ampere

**FEATURES**

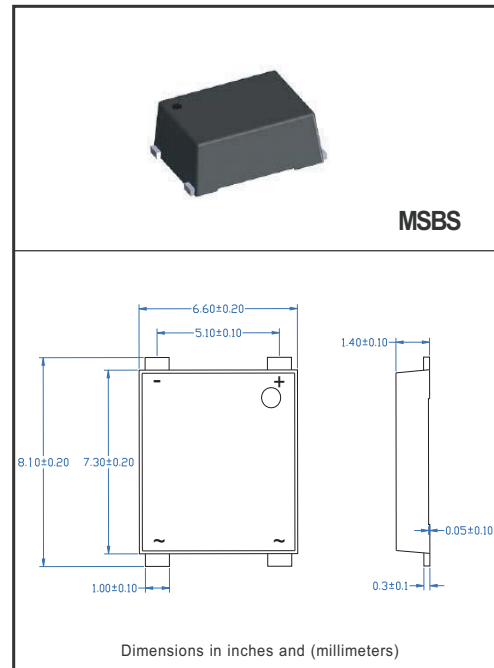
- \* Good for automation insertion
- \* Ideal for printed circuit board
- \* Reliable low cost construction utilizing molded
- \* Glass passivated device
- \* Mounting position: Any

**MECHANICAL DATA**

- \* UL listed the recognized component directory, file #E94233
- \* Epoxy: Device has UL flammability classification 94V-O
- \* Halogen-free

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.  
resistive or inductive load.



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

| RATINGS                                                                                           | SYMBOL                           | MSB301S      | MSB302S | MSB303S | MSB304S | MSB305S | MSB306S | MSB307S | UNITS               |
|---------------------------------------------------------------------------------------------------|----------------------------------|--------------|---------|---------|---------|---------|---------|---------|---------------------|
| Maximum Recurrent Peak Reverse Voltage                                                            | V <sub>RRM</sub>                 | 50           | 100     | 200     | 400     | 600     | 800     | 1000    | Volts               |
| Maximum RMS Bridge Input Voltage                                                                  | V <sub>RMS</sub>                 | 35           | 70      | 140     | 280     | 420     | 560     | 700     | Volts               |
| Maximum DC Blocking Voltage                                                                       | V <sub>DC</sub>                  | 50           | 100     | 200     | 400     | 600     | 800     | 1000    | Volts               |
| Maximum Average Forward Output Current at T <sub>C</sub> = 110 °C                                 | I <sub>O</sub>                   | 3.0          |         |         |         |         |         |         | Amps                |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | I <sub>FSM</sub>                 | 100          |         |         |         |         |         |         | Amps                |
| Typical Current Squarad Time                                                                      | I <sup>2</sup> t                 | 41.5         |         |         |         |         |         |         | A <sup>2</sup> /Sec |
| Typical Thermal Resistance (Note 2)                                                               | R <sub>θJA</sub>                 | 25           |         |         |         |         |         |         | °C/W                |
|                                                                                                   | R <sub>θJL</sub>                 | 15           |         |         |         |         |         |         |                     |
| Operating and Storage Temperature Range                                                           | T <sub>J</sub> ,T <sub>STG</sub> | -55 to + 150 |         |         |         |         |         |         | °C                  |

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

| CHARACTERISTICS                                            | SYMBOL | MSB301S | MSB302S | MSB303S | MSB304S | MSB305S | MSB306S | MSB307S | UNITS            |
|------------------------------------------------------------|--------|---------|---------|---------|---------|---------|---------|---------|------------------|
| Maximum Forward Voltage Drop per Bridge Element at 3.0A DC | $V_F$  | 1.1     |         |         |         |         |         |         | Volts            |
| Maximum Reverse Current at Rated                           | $I_R$  | 1.0     |         |         |         |         |         |         | $\mu\text{Amps}$ |
| DC Blocking Voltage per element                            |        | 500     |         |         |         |         |         |         | $\mu\text{Amps}$ |

Note: 1. "Fully ROHS compliant", "100% Sn plating (Pb-free)."  
2. Thermal Resistance: Mounted on PCB.

2016-08  
REV:A

## RATING AND CHARACTERISTICS CURVES ( MSB301S THRU MSB307S )

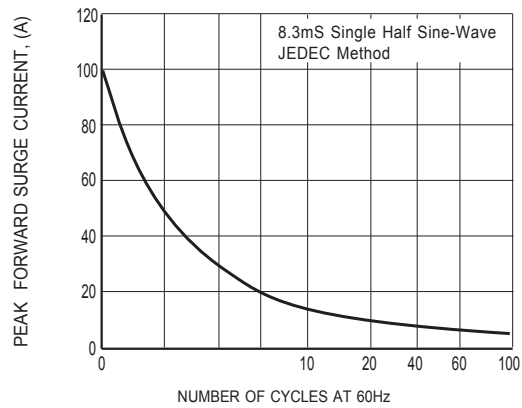


**FIG. 1 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**

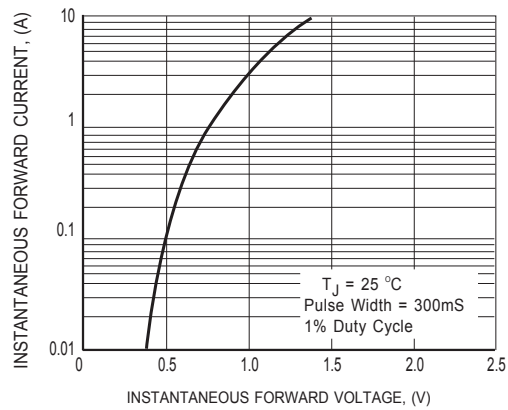


**FIG. 2 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

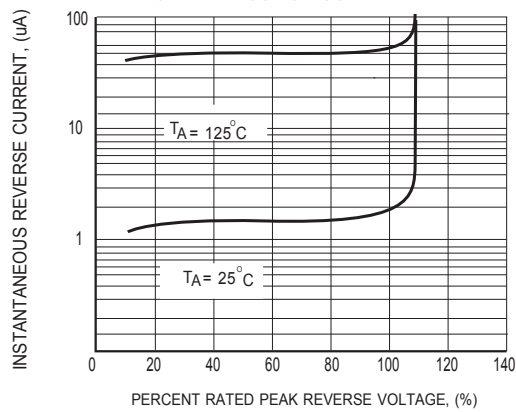


**FIG. 3 TYPICAL REVERSE CHARACTERISTICS**

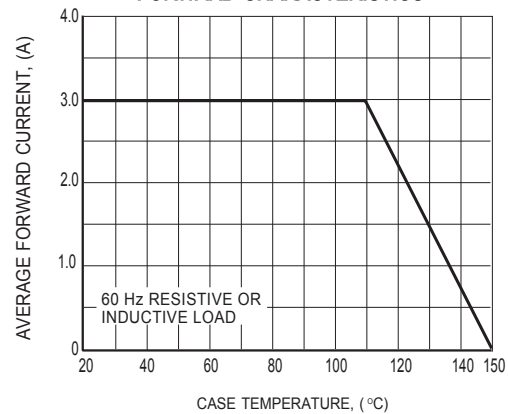


**FIG. 4 TYPICAL FORWARD CURRENT DERATING CURVE**

Technical drawing of a mechanical part, showing multiple views and dimensions:

- Top View:** Shows a rectangular plate with dimensions  $P_1$ ,  $P_0$ ,  $E$ ,  $F$ ,  $W$ ,  $P$ ,  $A$ , and  $G$ . It features a central row of 10 holes and four larger rectangular features with central holes.
- Left Side View:** Shows a cross-section of the part with dimensions  $B$  and  $C$ .
- Right Side View:** Shows a cross-section of the part with a small circular feature.
- Front View (Bottom Left):** Shows a circular feature with a central hole and four radial slots. The overall diameter is labeled  $D$ .
- Front View (Bottom Right):** Shows a cross-section of the part with dimensions  $D_1$ ,  $D_2$ , and  $W_1$ .

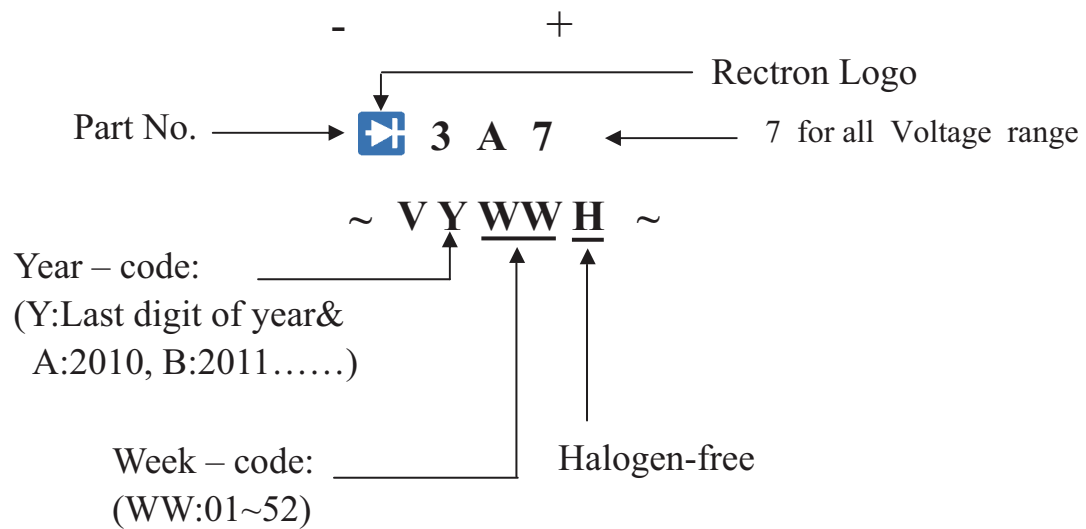
| ITEM                   | SYMBOL | SPECIFICATIONS (mm) | SPECIFICATIONS (inch) |
|------------------------|--------|---------------------|-----------------------|
| Carrier width          | A      | 0.69 ± 0.1          | 0.272 ± 0.004         |
| Carrier length         | B      | 7.60 ± 0.1          | 0.299 ± 0.004         |
| Carrier depth          | C      | 1.70 ± 0.1          | 0.067 ± 0.004         |
| Sprocket hole          | d      | 1.50 ± 0.1          | 0.059 ± 0.004         |
| Reel outside diameter  | D      | 330.0 ± 2.0         | 12.992 ± 0.079        |
| Reel inner diameter    | D1     | 16.4 ± 2.0          | 0.646 ± 0.079         |
| Feed hole diameter     | D2     | 13.0 ± 0.2          | 0.512 ± 0.008         |
| Sprocket hole position | E      | 1.75 ± 0.1          | 0.069 ± 0.004         |
| Punch hole position    | F      | 7.5 ± 0.1           | 0.295 ± 0.004         |
| Punch hole pitch       | P      | 12.0 ± 0.1          | 0.472 ± 0.004         |
| Sprocket hole pitch    | P0     | 4.0 ± 0.1           | 0.157 ± 0.004         |
| Embossment center      | P1     | 2.0 ± 0.1           | 0.079 ± 0.004         |
| Tape width             | W      | 16.0 ± 0.3          | 0.63 ± 0.012          |
| Reel width             | W1     | 22.4 ± 1.0          | 0.882 ± 0.039         |

## PACKAGING OF DIODE AND BRIDGE RECTIFIERS

### REEL PACK

| PACKAGE | PACKING CODE | EA PER REEL | EA PER INNER BOX | COMPONENT SPACE (mm) | TAPE SPACE (mm) | REEL DIA (mm) | CARTON SIZE (mm) | EA PER CARTON | GROSS WEIGHT(Kg) |
|---------|--------------|-------------|------------------|----------------------|-----------------|---------------|------------------|---------------|------------------|
| MSBS    | -T           | 3,000       | 3,000            | 9.5                  | 52              | 330           | 360*355*360      | 24,000        | 9.0              |

## Marking Description



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