

**SINGLE-PHASE GLASS PASSIVATED  
SILICON BRIDGE RECTIFIER**  
**VOLTAGE RANGE 50 to 1000 Volts CURRENT 4.0 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**

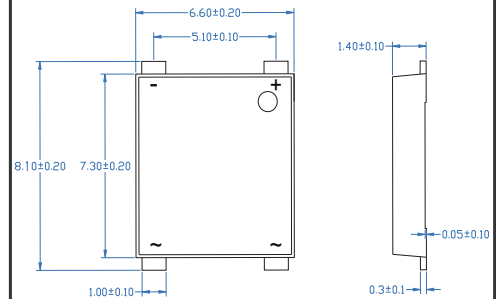
- \* UL listed the recognized component directory, file #E94233
- \* Epoxy: Device has UL flammability classification 94V-O
- \* Halogen-free

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

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



**MSBS**



Dimensions in inches and (millimeters)

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

RATINGS	SYMBOL	MSB401S	MSB402S	MSB403S	MSB404S	MSB405S	MSB406S	MSB407S	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>	4.0							Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	120							Amps
Typical Current Squared Time	I <sup>2</sup> t	59.76							A <sup>2</sup> /Sec
Typical Thermal Resistance (Note 2)	R <sub>θJA</sub>	55							°C/W
	R <sub>θJL</sub>	15							
Operating and Storage Temperature Range	T <sub>J</sub> ,T <sub>STG</sub>	-55 to + 150							°C

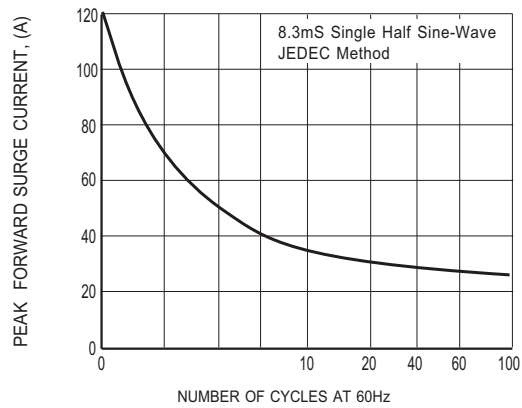
**ELECTRICAL CHARACTERISTICS** (At  $T_A = 25^\circ\text{C}$  unless otherwise noted)

CHARACTERISTICS	SYMBOL	MSB401S	MSB402S	MSB403S	MSB404S	MSB405S	MSB406S	MSB407S	UNITS
Maximum Forward Voltage Drop per Bridge Element at 4.0A DC	$V_F$	1.1							Volts
Maximum Reverse Current at Rated	$I_R$	1.0							$\mu\text{Amps}$
DC Blocking Voltage per element		500							$\mu\text{Amps}$

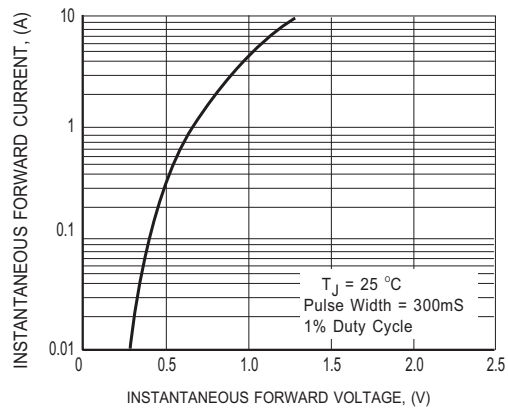
Note: 1. "Fully ROHS compliant", "100% Sn plating (Pb-free)."  
2. Thermal Resistance: Mounted on PCB.

2016-08  
REV:A

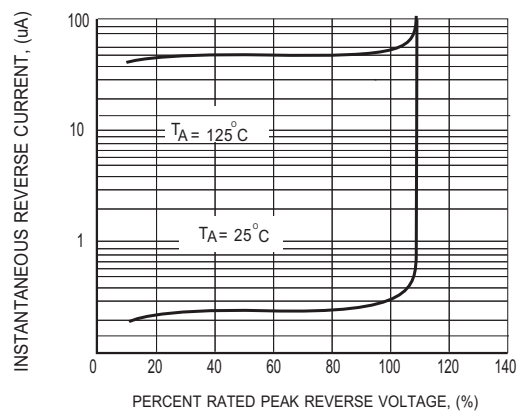
## RATING AND CHARACTERISTICS CURVES ( MSB401S THRU MSB407S )



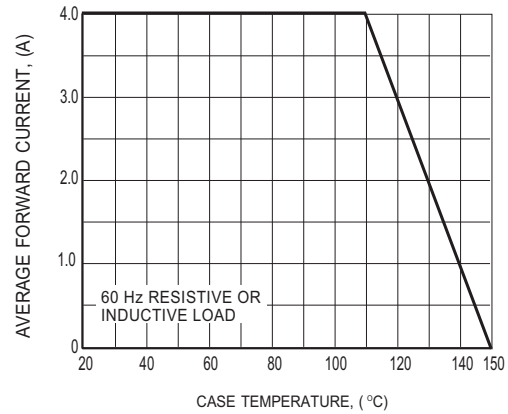
**FIG. 1 - MAXIMUM NON-REPETITIVE  
FORWARD SURGE CURRENT**



**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 three views: front view, top view, and side view.

**Front View:** A rectangular plate with four square holes. Dimensions include  $P_0$  (total width),  $P_1$  (distance between hole centers),  $E$  (height of the top flange),  $F$  (height of the central hole),  $W$  (total height),  $P$  (distance between hole centers),  $A$  (width of the central hole), and  $G$  (width of the bottom flange). A central hole is also indicated.

**Top View:** A circular disk with four radial spokes. The overall diameter is labeled  $D$ .

**Side View:** A cross-section showing the thickness  $W_1$  and internal features  $D_1$  and  $D_2$ .

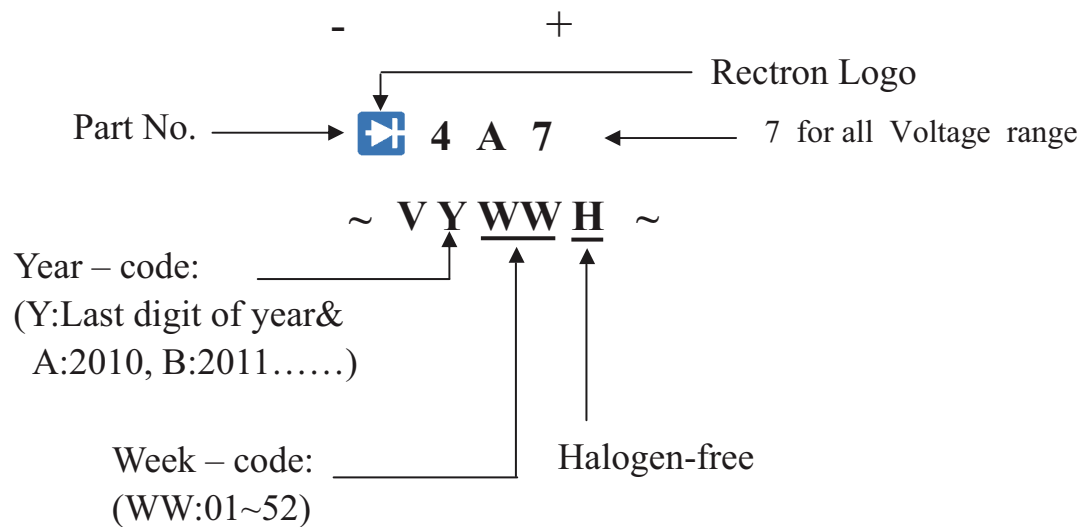
ITEM	SYMBOL	SPECIFICATIONS (mm)	SPECIFICATIONS (inch)
Carrier width	A	0.69 ± 0.1	0.272 ± 0.004
Carrier length	B	7.60 ± 0.1	0.299 ± 0.004
Carrier depth	C	1.70 ± 0.1	0.067 ± 0.004
Sprocket hole	d	1.50 ± 0.1	0.059 ± 0.004
Reel outside diameter	D	330.0 ± 2.0	12.992 ± 0.079
Reel inner diameter	D1	16.4 ± 2.0	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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