

**VOLTAGE RANGE: 50 --- 1000 V**

**CURRENT: 0.5 A**

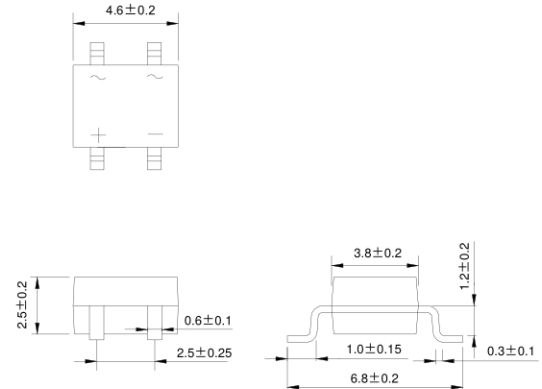
**MBS**

### Features

- ✧ This series is UL recognized under Component Index, file number E239431
- ✧ Glass passivated chip junctions
- ✧ Plastic material has U/L flammability classification 94V-O
- ✧ High surge overload rating: 35A peak
- ✧ Saves space on printed circuit boards
- ✧ High temperature soldering guaranteed: 260°C/10 seconds at 5 lbs. (2.3kg) tension

### Mechanical Data

- ✧ Case: Molded plastic body over passivated junctions
- ✧ Terminals: Plated leads solderable per MIL-STD-750, Method 2026
- ✧ Polarity: Polarity symbols marked on body
- ✧ Dimensions in inches and (millimeters)
- ✧ Mounting Position: Any
- ✧ Weight: 0.0078 ounce, 0.22 gram



Dimensions in millimeters

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate by 20%.

		MB05S	MB1S	MB2S	MB4S	MB6S	MB8S	MB10S	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward output current @ $T_A=25^\circ\text{C}$	$I_{F(AV)}$	0.5							A
Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load	$I_{FSM}$	35.0							A
Maximum instantaneous forward voltage @ 0.4 A	$V_F$	1.0							V
Maximum reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	$I_R$	5.0 0.5							$\mu\text{A}$ mA
Typical junction capacitance per leg (NOTE 3)	$C_J$	13							pF
Typical thermal resistance per leg (NOTE 1) (NOTE 2)	$R_{\theta JA}$ $R_{\theta JL}$	85 20							$^\circ\text{C/W}$
Operating junction temperature range	$T_J$	- 55 ---- + 150							$^\circ\text{C}$
Storage temperature range	$T_{STG}$	- 55 ---- + 150							$^\circ\text{C}$

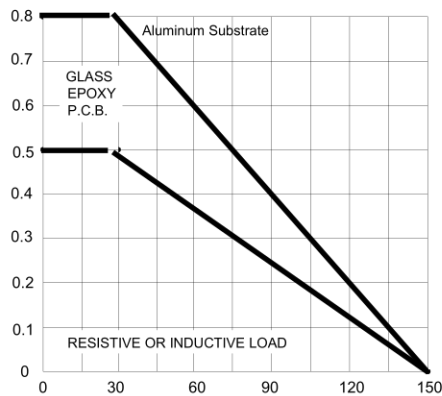
NOTES: (1) On glass epoxy P.C.B. mounted on 0.05 x 0.05" (1.3 x 1.3mm) pads

(2) On aluminum substrate P.C.B. with an area of 0.8" x 0.8" (20 x 20mm) mounted on 0.05 x 0.05" (1.3 x 1.3mm) solder pad

(3) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts

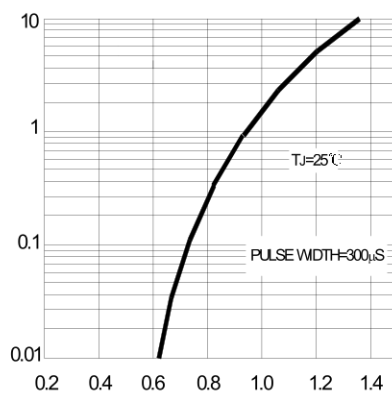
## Ratings AND Characteristic Curves

AVERAGE FORWARD CURRENT, AMPERES

**FIG.1 – DERATING CURVE FOR OUTPUT**
**RECTIFIED CURRENT**


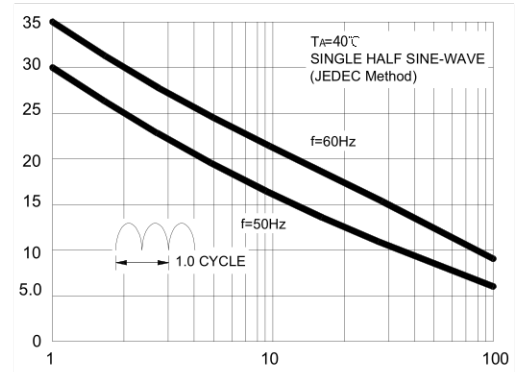
AMBIENT TEMPERATURE, °C

INSTANTANEOUS FORWARD CURRENT, AMPERES

**FIG.3 – TYPICAL FORWARD VOLTAGE CHARACTERISTICS PER LEG**


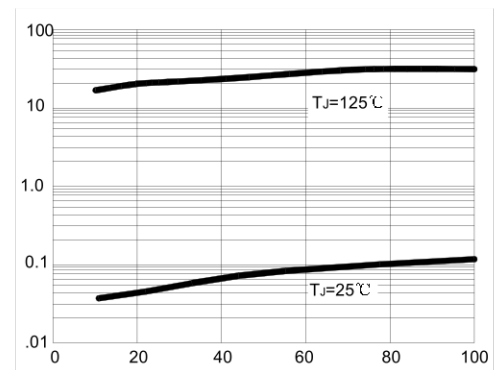
INSTANTANEOUS FORWARD VOLTAGE, VOLTS

PEAK FORWARD SURGE CURRENT, AMPERES

**FIG.2 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG**


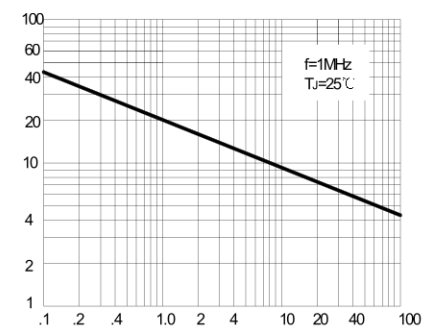
NUMBER OF CYCLES AT 50/60Hz

INSTANTANEOUS REVERSE CURRENT, MICRO AMPERES

**FIG.4 – TYPICAL REVERSE CHARACTERISTIC**


PERCENT OF RATED PEAK REVERSE VOLTAGE, %

CAPACITANCE, pF

**FIG.5 – TYPICAL JUNCTION CAPACITANCE PER ELEMENT**


REVERSE VOLTAGE, VOLTS