

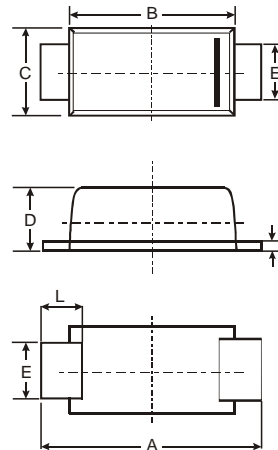
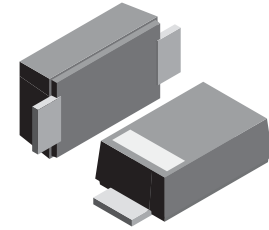
**VOLTAGE RANGE: 20 - 100V**  
**CURRENT: 1.0 A**

### Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- High forward surge current capability
- High temperature soldering guaranteed: 250°C/10 seconds, 0.375(9.5mm) lead length, 5 lbs. (2.3kg) tension

### Mechanical Data

- Case: JEDEC SOD-123FL molded plastic body over passivated junction
- Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0007 ounce, 0.02 grams



| SOD-123FL            |       |      |      |
|----------------------|-------|------|------|
| Dim                  | Min   | Max  | Typ  |
| A                    | 3.58  | 3.72 | 3.65 |
| B                    | 2.72  | 2.78 | 2.75 |
| C                    | 1.77  | 1.83 | 1.80 |
| D                    | 1.02  | 1.08 | 1.05 |
| E                    | 0.097 | 1.03 | 1.00 |
| H                    | 0.13  | 0.17 | 0.15 |
| L                    | 0.53  | 0.57 | 0.55 |
| All Dimensions in mm |       |      |      |

### Maximum Ratings and Electrical Characteristics T<sub>A</sub> = 25°C unless otherwise specified

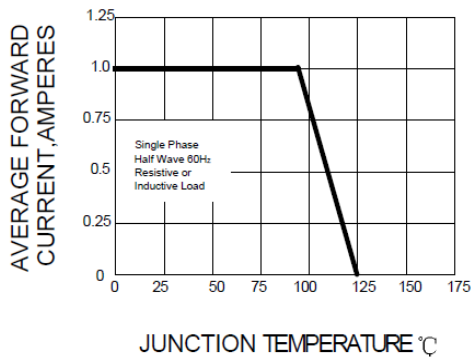
Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Characteristic  | Symbol            | MBRX120        | MBRX130 | MBRX140 | MBRX160 | MBRX180 | MBRX1A0 | Unit |
|---|-------------------|----------------|---------|---------|---------|---------|---------|------|
| Maximum recurrent peak reverse voltage  | V <sub>RRM</sub>  | 20             | 30      | 40      | 60      | 80      | 100     | V    |
| Maximum RMS voltage   | V <sub>RMS</sub>  | 14             | 21      | 28      | 42      | 56      | 70      | V    |
| Maximum DC blocking voltage   | V <sub>DC</sub>   | 20             | 30      | 40      | 60      | 80      | 100     | V    |
| Maximum average forward rectified current T <sub>j</sub> =90                      | I <sub>(AV)</sub> | 1.0            |         |         |         |         |         | A    |
| Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load | I <sub>FSM</sub>  | 20             |         |         |         |         |         | A    |
| Maximum instantaneous forward voltage @ I <sub>FM</sub> =1.0A                     | V <sub>F</sub>    | 0.50           | 0.55    | 0.72    | 0.85    |         | V       |      |
| Repetitive peak reverse current at rated DC blocking voltage                      | I <sub>R</sub>    | 0.3            |         |         |         |         |         | mA   |
| Typical junction capacitance  | C <sub>J</sub>    | 30             |         |         |         |         |         | pF   |
| Operating temperature range   | T <sub>j</sub>    | - 55 --- + 125 |         |         |         |         |         |      |
| Storage temperature range   | T <sub>STG</sub>  | - 55 --- + 150 |         |         |         |         |         |      |

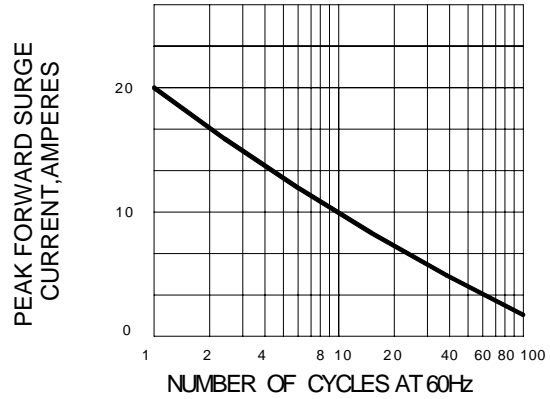
NOTE1. Measured at f=1.0MHz, V<sub>R</sub>=4.0V

## RATINGS AND CHARACTERISTIC CURVES MBRX120 THRU MBRX1A0

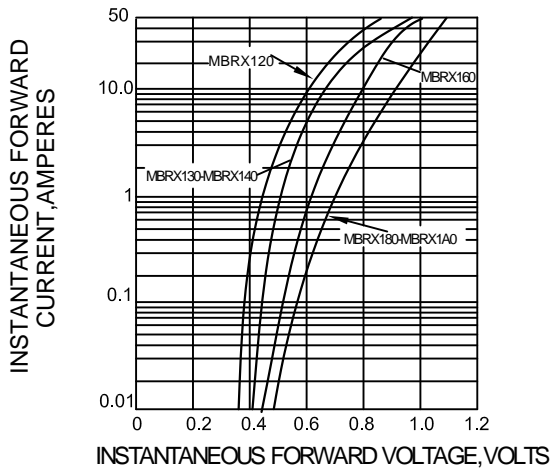
**FIG.1 – FORWARD DERATING CURVE**



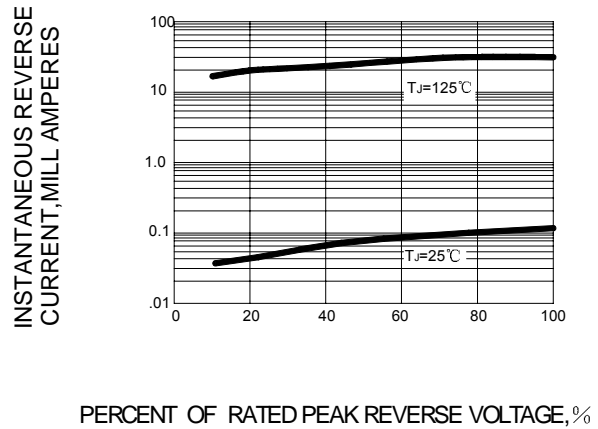
**FIG.2– PEAK FORWARD SURGE CURRENT**



**FIG.3 – TYPICAL FORWARD CHARACTERISTICS**



**FIG.4 – TYPICAL REVERSE CHARACTERISTICS**



**FIG.5-TYPICAL JUNCTION CAPACITANCE**

