

## 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

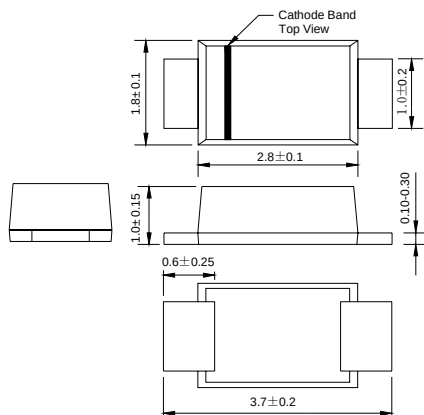
**Case:** JEDEC SOD-123FL molded plastic body

**Terminals:** Solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

### SOD-123FL



Dimensions in millimeters

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

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

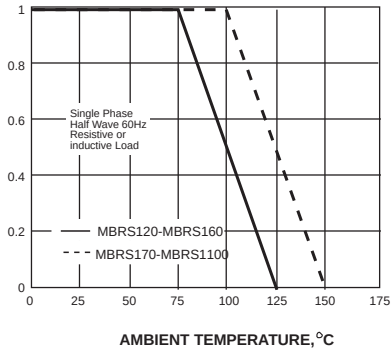
|                                                                                                             | SYMBOLS          | MBRS<br>120 | MBRS<br>130 | MBRS<br>140 | MBRS<br>150 | MBRS<br>160 | MBRS<br>170 | MBRS<br>180 | MBRS<br>190 | MBRS<br>1100 | UNITS |
|-------------------------------------------------------------------------------------------------------------|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------|
|                                                                                                             | Marking          | K12         | K13         | K14         | K15         | K16         | K17         | K18         | K19         | K110         |       |
| Maximum repetitive peak reverse voltage                                                                     | V <sub>RRM</sub> | 20          | 30          | 40          | 50          | 60          | 70          | 80          | 90          | 100          | VOLTS |
| Maximum RMS voltage                                                                                         | V <sub>RMS</sub> | 14          | 21          | 28          | 35          | 42          | 49          | 56          | 63          | 70           | VOLTS |
| Maximum DC blocking voltage                                                                                 | V <sub>DC</sub>  | 20          | 30          | 40          | 50          | 60          | 70          | 80          | 90          | 100          | VOLTS |
| Maximum average forward rectified current                                                                   | I <sub>AV</sub>  | 1.0         |             |             |             |             |             |             |             |              | Amp   |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load (JEDEC Method)      | I <sub>FSM</sub> | 25.0        |             |             |             |             |             |             |             |              | Amps  |
| Maximum instantaneous forward voltage at 1.0A                                                               | V <sub>F</sub>   | 0.55        |             |             | 0.70        |             | 0.85        |             |             |              | Volts |
| Maximum DC reverse current    T <sub>A</sub> =25°C<br>at rated DC blocking voltage    T <sub>A</sub> =100°C | I <sub>R</sub>   | 0.5         |             |             |             |             |             |             |             |              | mA    |
|                                                                                                             |                  | 10.0        |             |             |             |             | 5.0         |             |             |              |       |
| Typical junction capacitance (NOTE 1)                                                                       | C <sub>J</sub>   | 110         |             |             | 80          |             |             |             |             |              | pF    |
| Operating junction temperature range                                                                        | T <sub>J</sub>   | -65 to +125 |             |             |             |             | -65 to +150 |             |             |              | °C    |
| Storage temperature range                                                                                   | T <sub>STG</sub> | -65 to +150 |             |             |             |             |             |             |             |              | °C    |

**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

# RATINGS AND CHARACTERISTIC CURVES MBRS120 THRU MBRS1100

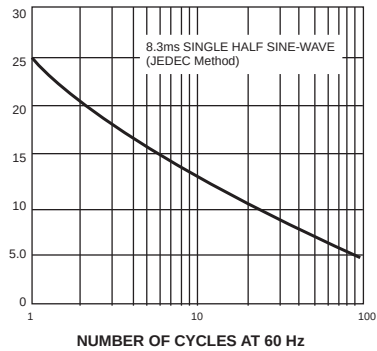
AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



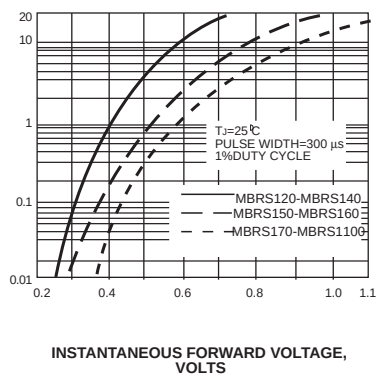
PEAK FORWARD SURGE CURRENT,  
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



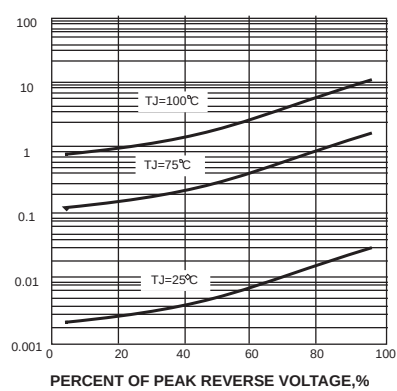
INSTANTANEOUS FORWARD  
CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT,  
MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE

