



# MBRX0520

Small Surface Mount Schottky Rectifier

**REVERSE VOLTAGE: 20 V**

**CURRENT: 0.5 A**

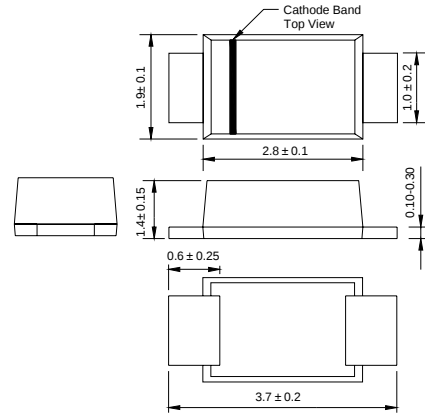
**SOD - 123FL**

## Features

- Low profile package
- For surface mouted applications
- Idear for automated placement
- Low power loss,high efficiency
- High temperature soldering:  
250 /10 seconds at terminals

## Mechanical Data

- Case:JEDEC SOD-123FL,molded plastic over passivated chip
- Polarity: Color band denotes cathode end
- Weight: 0.006 ounces, 0.02 gram
- Device marking code: B2



Dimensions in millimeters

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 ambient temperature unless otherwise specified.

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

### ABSOLUTE RATINGS

| Parameter                                                                                          | Symbol          | Value      | UNITS |
|----------------------------------------------------------------------------------------------------|-----------------|------------|-------|
| Maximum repetitive peak reverse voltage                                                            | $V_{RRM}$       | 20         | V     |
| Maximum working peak reverse voltage                                                               | $V_{RWM}$       | 20         | V     |
| Maximum DC blocking voltage                                                                        | $V_R$           | 20         | V     |
| Maximum average forward<br>rectified current at rated $V_R$ @ $T_L=129$                            | $I_{(AV)}$      | 0.5        | A     |
| Peak forward surge current 8.3ms single<br>half-sine-wave superimposed<br>on rated load @ $T_L=25$ | $I_{FSM}$       | 6.5        | A     |
| Typical thermal resistance to ambient (NOTE 1)                                                     | $R_{j\theta A}$ | 200        | /W    |
| Typical thermal resistance to lead (NOTE 2)                                                        | $R_{j\theta L}$ | 150        | /W    |
| Operating temperature range                                                                        | $T_j$           | -55---+150 |       |
| Storage temperature range                                                                          | $T_{STG}$       | -55---+150 |       |

NOTES:1.Mounted on PC board FR4 with minimum pad size

2. 1 inch square pad size (1 × 0.5 inch for each lead)on FR4 board.

**ELECTRICAL CHARACTERISTICS**

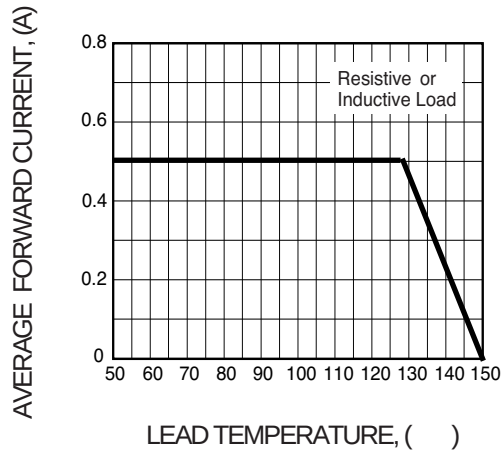
| Parameter                                               | Symbol | Min | Typ. | Max.  | Unit    |
|---------------------------------------------------------|--------|-----|------|-------|---------|
| Maximum instantaneous forward voltage (NOTE 3)          | $V_F$  | -   | -    | 0.375 | V       |
| @ $I_F=0.1A, T_J=25$                                    |        | -   | -    | 0.260 |         |
| $I_F=0.1A, T_J=100$                                     |        | -   | -    | 0.440 |         |
| $I_F=0.5A, T_J=25$                                      |        | -   | -    | 0.360 |         |
| Maximum DC reverse current at rated DC blocking voltage | $I_R$  | -   | -    | 40    | $\mu A$ |
| @ $V_R=10V, T_J=25$                                     |        | -   | -    | 3.0   | mA      |
| $V_R=10V, T_J=100$                                      |        | -   | -    | 150   | $\mu A$ |
| $V_R=20V, T_J=25$                                       |        | -   | -    | 7.0   | mA      |
| Max.junction capacitance (Note 4)                       | $C_T$  | -   | -    | 110   | pF      |

NOTES: 3.Pulse tes<300 $\mu$ s, duty cycle<2% .

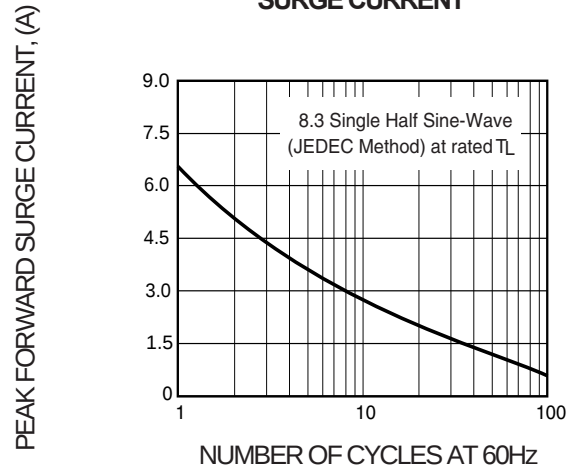
4. $V_R=5V_{DC}$  (test signal range 100KHz to 1MHz).

## Ratings AND Characteristic Curves

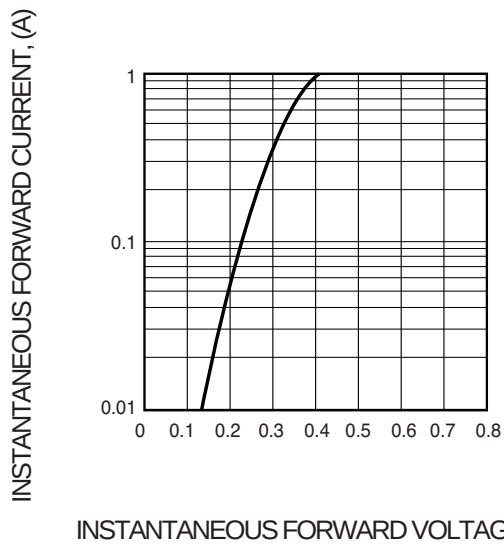
**FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE**



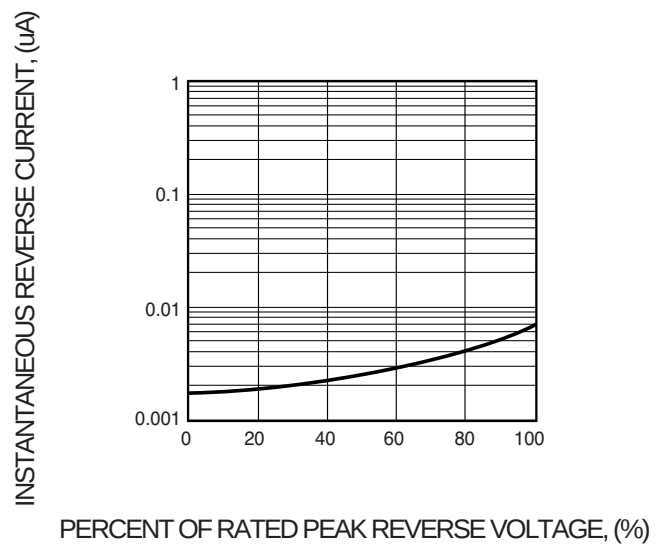
**FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**

