

# MBR1020VL

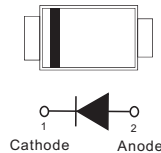
## SURFACE MOUNT SCHOTTKY POWER RECTIFIER

### FEATURES

- Guardring for stress protection
- Optimized for very low forward voltage
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

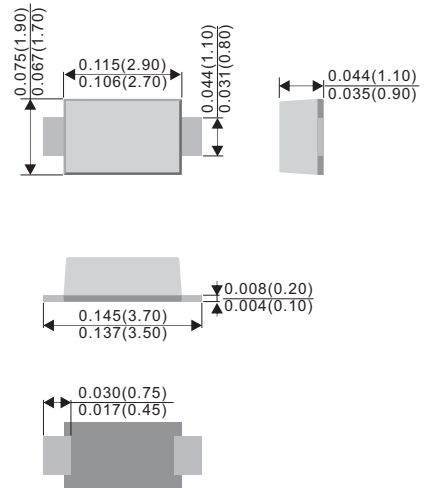
### MECHANICAL DATA

- Case: SOD-123FL, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00061 ounces, 0.0173 grams
- Marking code: RL



### SOD-123FL

Unit : inch(mm)



### MAXIMUM RATINGS

| RATING                                                                                                      | SYMBOL         | VALUE        | UNITS        |
|-------------------------------------------------------------------------------------------------------------|----------------|--------------|--------------|
| Peak Repetitive Reverse Voltage                                                                             | $V_{RRM}$      | 20           | V            |
| Average Rectified Forward Current (See Figure 1)                                                            | $I_{F(AV)}$    | 1.0          | A            |
| Non-Repetitive Peak Surge Current<br>(Surge Applied at Rated Load Conditions, Halfwave, Single Phase, 60Hz) | $I_{FSM}$      | 45           | A            |
| Voltage Rate of Change (Rated $V_R$ )                                                                       | $dv/dt$        | 1000         | V/ $\mu$ s   |
| Operating Junction and Storage Temperature Range                                                            | $T_J, T_{STG}$ | -55 to + 125 | $^{\circ}$ C |

### THERMAL CHARACTERISTICS

| CHARACTERISTIC                                         | SYMBOL          | VALUE | UNITS          |
|--------------------------------------------------------|-----------------|-------|----------------|
| Typical thermal Resistance-Junction-to-Ambient (Note1) | $R_{\theta JA}$ | 200   | $^{\circ}$ C/W |
| Typical thermal Resistance-Junction-to-Lead (Note2)    | $R_{\theta JL}$ | 70    |                |

- 1.Mounted with minimum recommended pad size, PC Board FR4
- 2.Mounted on a FR4 PCB, single-sided copper, with 10cm\*10cm copper pad area

### ELECTRICAL CHARACTERISTICS

| CHARACTERISTIC                                                                          | SYMBOL | $T_J=25^{\circ}$ C      | $T_J=85^{\circ}$ C      | UNITS |
|-----------------------------------------------------------------------------------------|--------|-------------------------|-------------------------|-------|
| Maximum Instantaneous Forward Voltage (Note3)<br>$I_F=0.1A$<br>$I_F=0.5A$<br>$I_F=1.0A$ | $V_F$  | 0.275<br>0.315<br>0.340 | 0.205<br>0.270<br>0.300 | V     |
| Maximum Instantaneous Reverse Current (Note3)<br>(Rated DC Voltage)                     | $I_R$  | 0.60                    | 15                      | mA    |

3.Pulse Test : Pulse Width = 300 $\mu$ s, Duty Cycle < 2%

## MBR1020VL

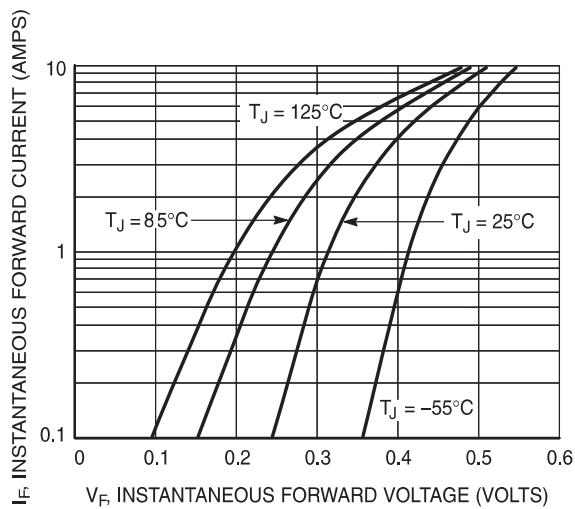


Figure 1. Typical Forward Voltage

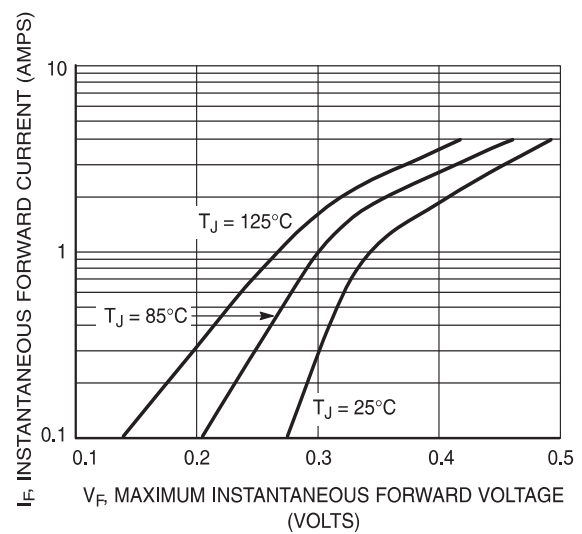


Figure 2. Maximum Forward Voltage

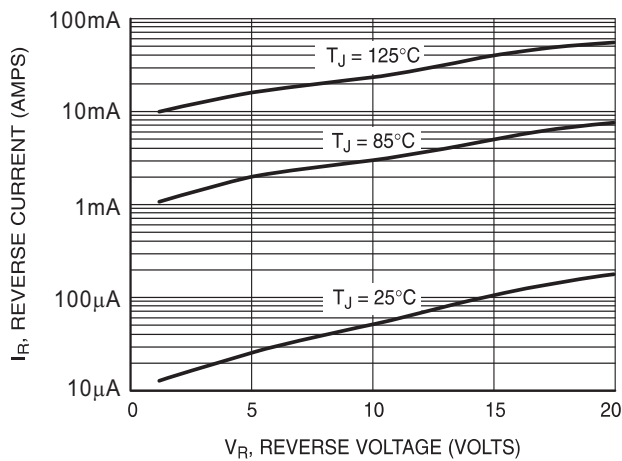


Figure 3. Typical Reverse Current

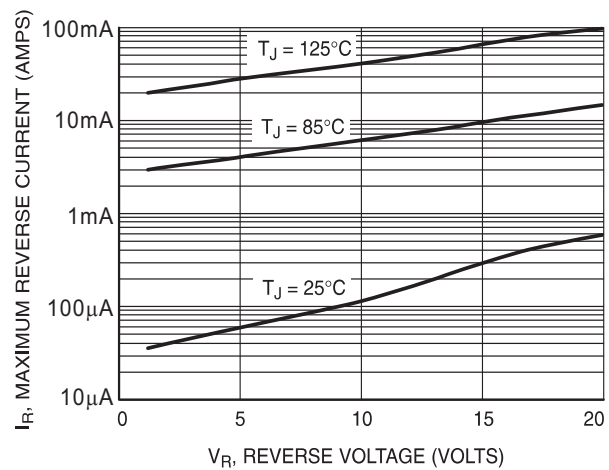


Figure 4. Maximum Reverse Current

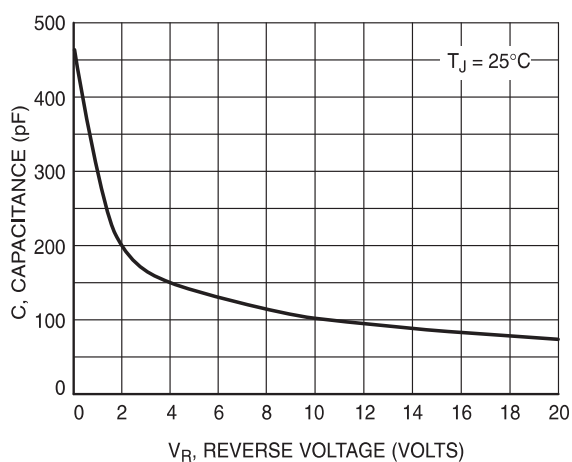


Figure 5. Capacitance

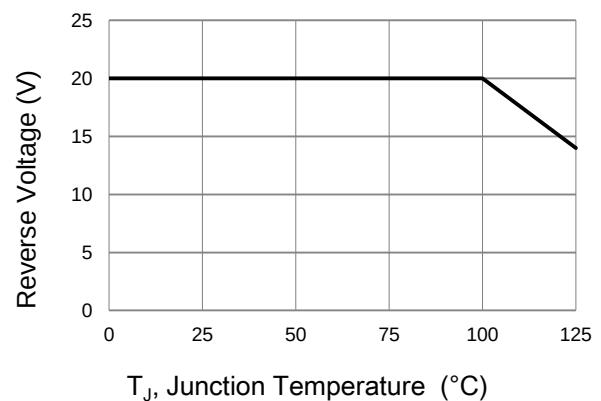
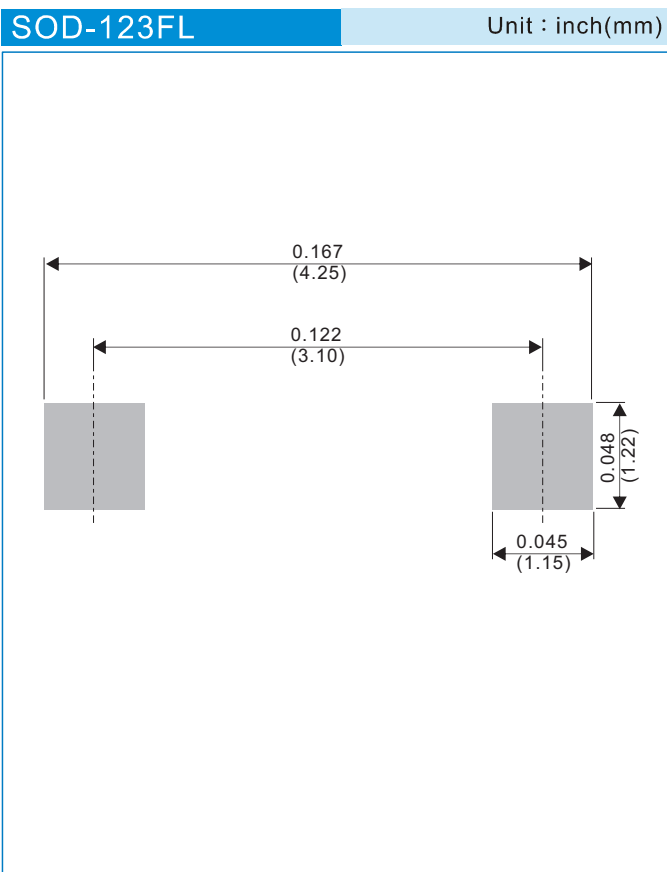


Fig.6 Operating Temperature Derating Curve

## MBR1020VL

### MOUNTING PAD LAYOUT



### ORDER INFORMATION

- Packing information
  - T/R - 10K per 13" plastic Reel
  - T/R - 3K per 7" plastic Reel

## MBR1020VL

### Part No\_packing code\_Version

MBR1020VL\_R1\_00001

MBR1020VL\_R2\_00001

For example :

**RB500V-40\_R2\_00001**

Part No.

Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|----------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                 | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>             | N/A                              | <b>0</b>             | HF                         | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | RoHS                       | <b>1</b>             | serial number                         |
| Bulk Packing (B/P)                   | <b>B</b>             | 13"                              | <b>2</b>             |                            |                      |                                       |
| Tube Packing (T/P)                   | <b>T</b>             | 26mm                             | <b>X</b>             |                            |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>             | 52mm                             | <b>Y</b>             |                            |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>             | PANASERT T/B CATHODE UP (PBCU)   | <b>U</b>             |                            |                      |                                       |
| FORMING                              | <b>F</b>             | PANASERT T/B CATHODE DOWN (PBCD) | <b>D</b>             |                            |                      |                                       |



## MBR1020VL

---

### Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.