



# MBR0520 THRU MBR0580

## 0.5 Amp Schottky Rectifier 20 to 80 Volts

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- For Surface Mount Application
- Low Forward Voltage and Extremely Low Thermal Resistance
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

### Maximum Ratings

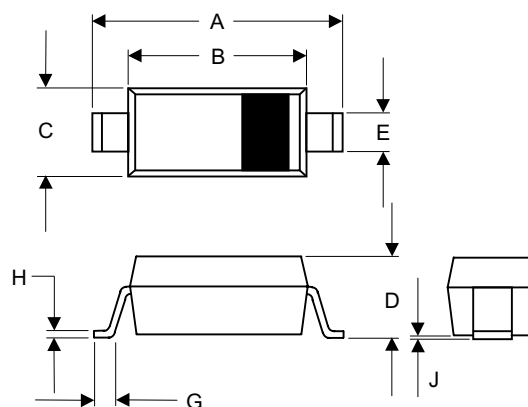
- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance: 244°C/W Junction to Ambient

| MCC Catalog Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|--------------------|----------------|----------------------------------------|---------------------|-----------------------------|
| MBR0520            | R2             | 20V                                    | 14V                 | 20V                         |
| MBR0530            | R3             | 30V                                    | 21V                 | 30V                         |
| MBR0540            | R4             | 40V                                    | 28V                 | 40V                         |
| MBR0560            | R6             | 60V                                    | 42V                 | 60V                         |
| MBR0580            | R8             | 80V                                    | 56V                 | 80V                         |

### Electrical Characteristics @ 25°C Unless Otherwise Specified

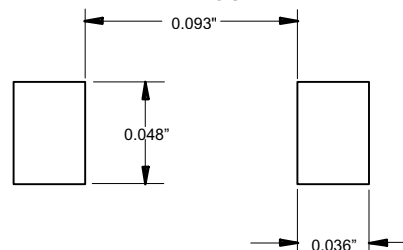
|                                                                                              |             |                                           |                                           |
|----------------------------------------------------------------------------------------------|-------------|-------------------------------------------|-------------------------------------------|
| Average Forward Current                                                                      | $I_{F(AV)}$ | 0.5A                                      | $T_A=50^\circ\text{C}$                    |
| Peak Forward Surge Current                                                                   | $I_{FSM}$   | 5.5A                                      | 8.3ms half sine                           |
| Maximum Instantaneous Forward Voltage<br>MBR0520<br>MBR0530<br>MBR0540<br>MBR0560<br>MBR0580 | $V_F$       | 0.45V<br>0.55V<br>0.55V<br>0.70V<br>0.80V | $I_{FM}=0.5A$<br>$T_A=25^\circ\text{C}$   |
| Maximum DC Reverse Current At Rated DC Blocking Voltage                                      | $I_R$       | 0.2mA                                     | $T_J=25^\circ\text{C}$                    |
| Typical Junction Capacitance                                                                 | $C_J$       | 30pF                                      | Measured at 1.0MHz,<br>$V_R=4.0\text{ V}$ |
| Power dissipation                                                                            | $P_D$       | 410mW                                     |                                           |

### SOD123



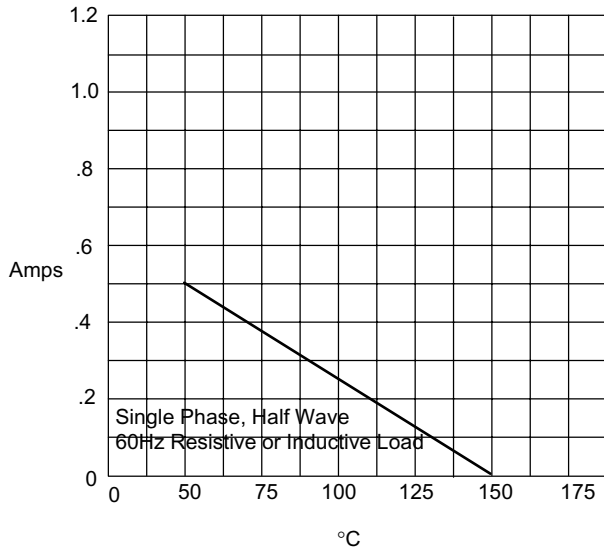
| DIMENSIONS |        |       |       |       |      |
|------------|--------|-------|-------|-------|------|
| DIM        | INCHES |       | MM    |       | NOTE |
|            | MIN    | MAX   | MIN   | MAX   |      |
| A          | .140   | .152  | 3.55  | 3.85  |      |
| B          | .100   | .112  | 2.55  | 2.85  |      |
| C          | .055   | .071  | 1.40  | 1.80  |      |
| D          | -----  | .053  | ----- | 1.35  |      |
| E          | .012   | .031  | 0.30  | .78   |      |
| G          | .006   | ----- | 0.15  | ----- |      |
| H          | -----  | .01   | ----- | .25   |      |
| J          | -----  | .006  | ----- | .15   |      |

#### SUGGESTED SOLDER PAD LAYOUT



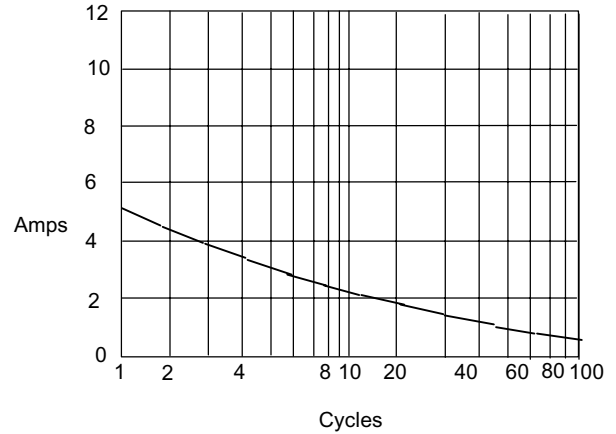
# MBR0520 thru MBR0580

Figure 1  
Forward Derating Curve



Average Forward Rectified Current - Amperes versus  
Ambient Temperature - °C

Figure 2  
Peak Forward Surge Current



Peak Forward Surge Current - Amperes versus  
Number Of Cycles At 60Hz - Cycles

Figure 3  
Typical Forward Characteristics  
MBR0520

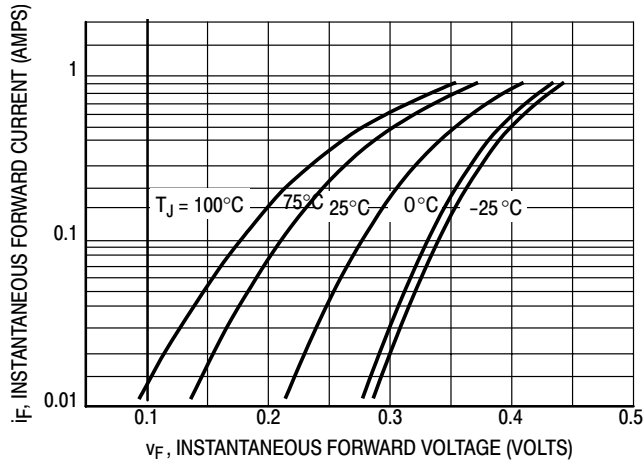


Figure 4  
Typical Forward Characteristics  
MBR0530~MBR0540

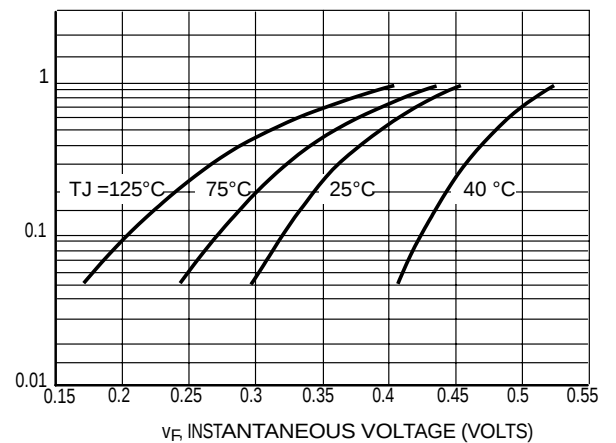


Figure 5  
Typical Forward Characteristics  
MBR0560

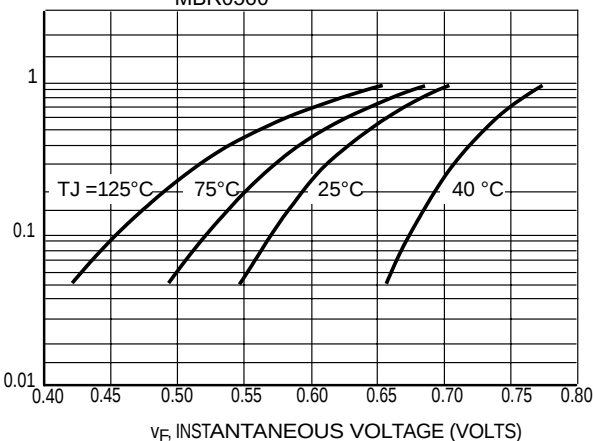
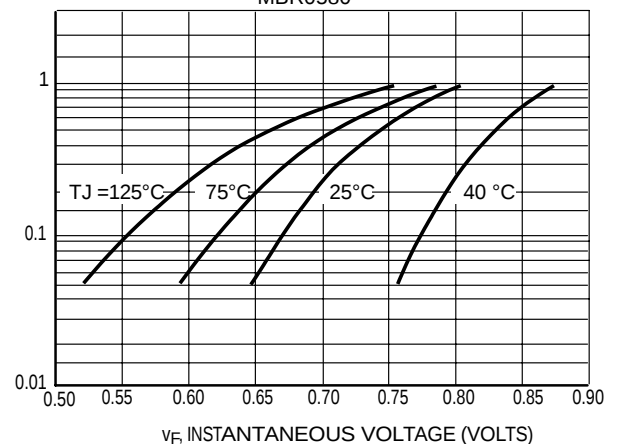


Figure 6  
Typical Forward Characteristics  
MBR0580



Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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