

Obsolete

**MCC**

Micro Commercial Components



Micro Commercial Components  
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#### Features

- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Extremely Low Thermal Resistance
- For Surface Mount Application
- Low Forward Voltage
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

#### Maximum Ratings

- Operating Temperature: -55°C to +125°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance: 200°C/W Junction to Ambient

| MCC Catalog Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|--------------------|----------------|----------------------------------------|---------------------|-----------------------------|
| MBRX120            | X2             | 20V                                    | 14V                 | 20V                         |
| MBRX130            | X3             | 30V                                    | 21V                 | 30V                         |
| MBRX140            | X4             | 40V                                    | 28V                 | 40V                         |
| MBRX160            | X6             | 60V                                    | 42V                 | 60V                         |

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

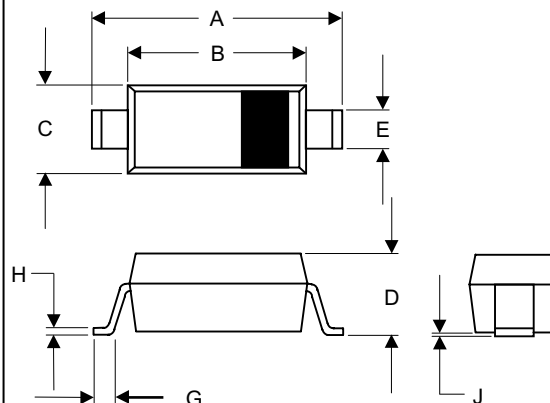
|                                                                                   |             |                                  |                                         |
|-----------------------------------------------------------------------------------|-------------|----------------------------------|-----------------------------------------|
| Average Forward Current                                                           | $I_{F(AV)}$ | 1.0A                             | $T_J=90^\circ\text{C}$                  |
| Peak Forward Surge Current                                                        | $I_{FSM}$   | 20A                              | 8.3ms half sine                         |
| Maximum Instantaneous Forward Voltage<br>MBRX120<br>MBRX130<br>MBRX140<br>MBRX160 | $V_F$       | 0.50V<br>0.55V<br>0.55V<br>0.72V | $I_{FM}=1.0A$<br>$T_A=25^\circ\text{C}$ |
| Maximum DC Reverse Current<br>At Rated DC Blocking Voltage                        | $I_R$       | 0.3mA<br>3uA                     | Rated $V_r$<br>$V_r=3.3V$               |
| Typical Junction Capacitance                                                      | $C_J$       | 30pF                             | Measured at<br>1.0MHz,<br>$V_R=4.0V$    |

Note: 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7.

## MBRX120 THRU MBRX160

### 1.0 Amp Schottky Barrier Rectifier 20 to 60 Volts

#### 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

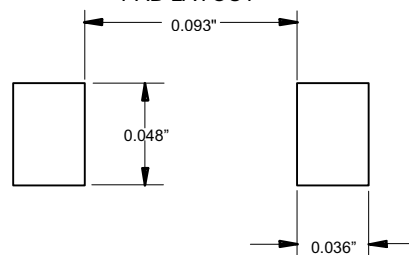


Figure 1  
Typical Forward Characteristics

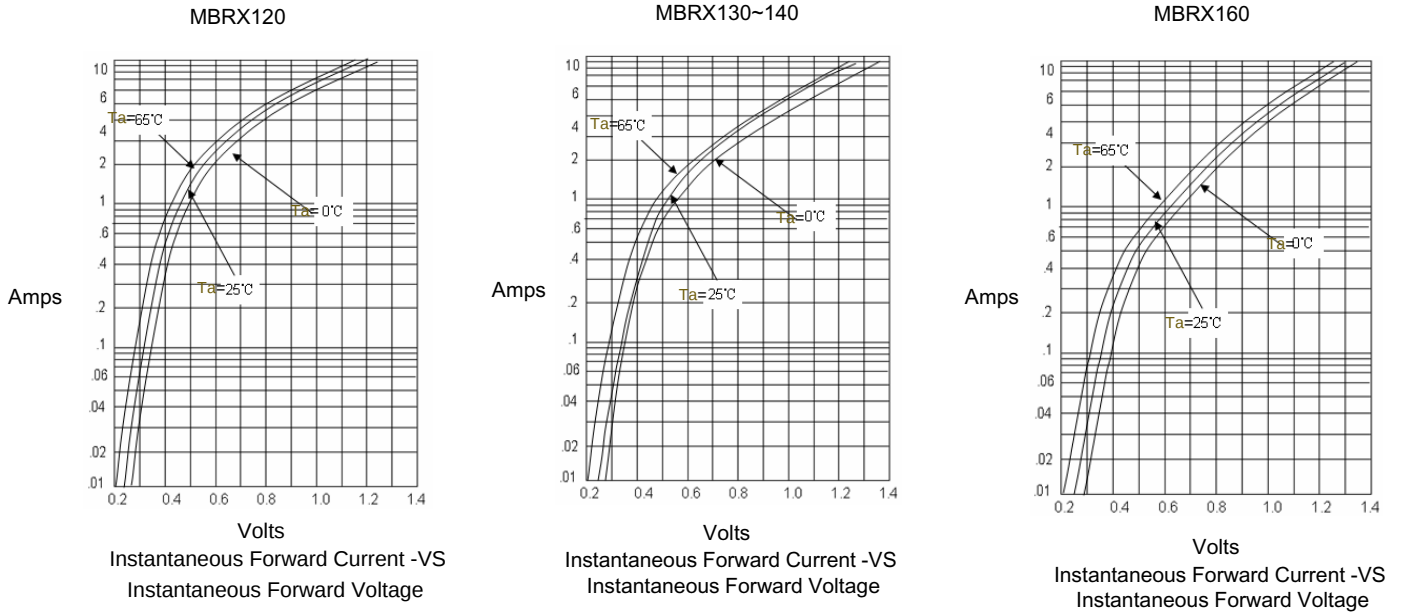
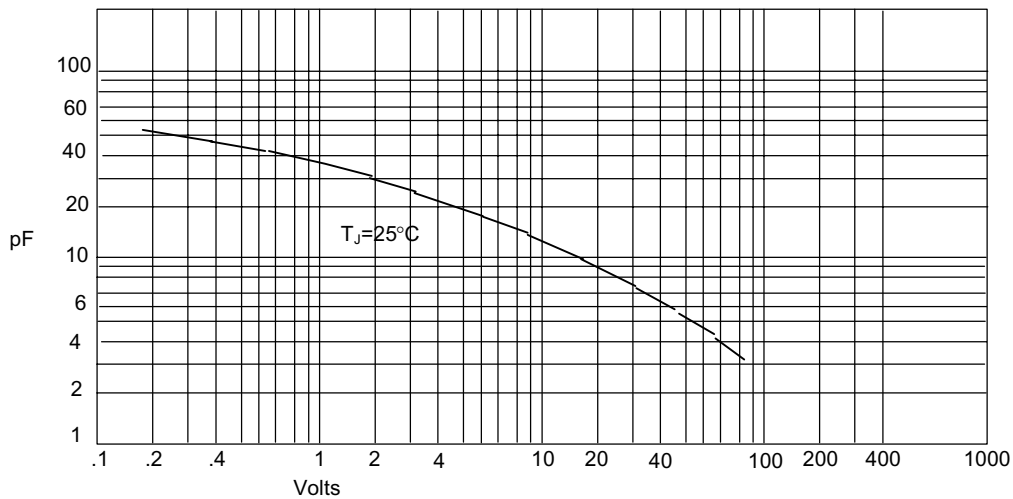
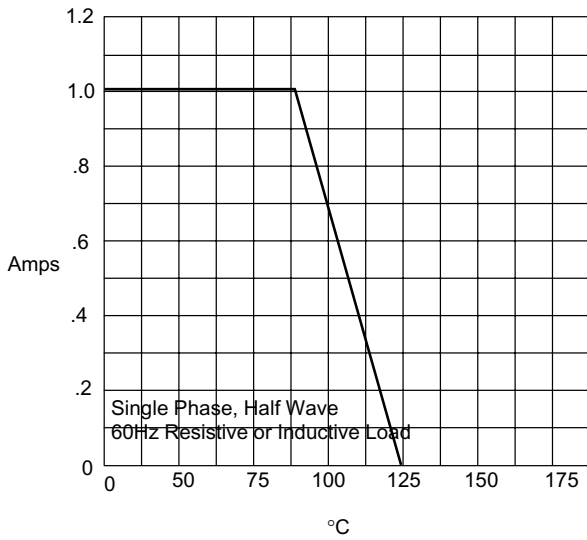


Figure 2  
Junction Capacitance



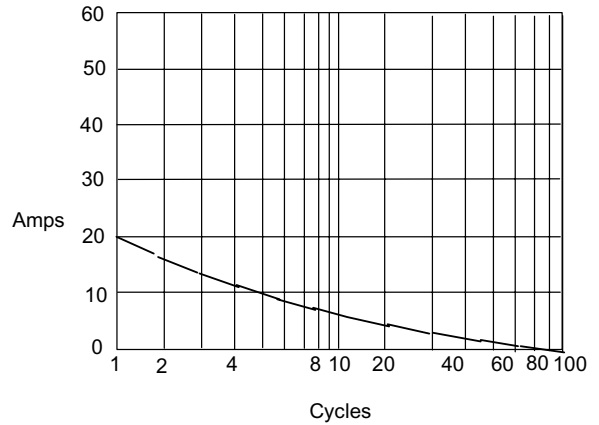
## MBRX120 thru MBRX160

Figure 3  
Forward Derating Curve



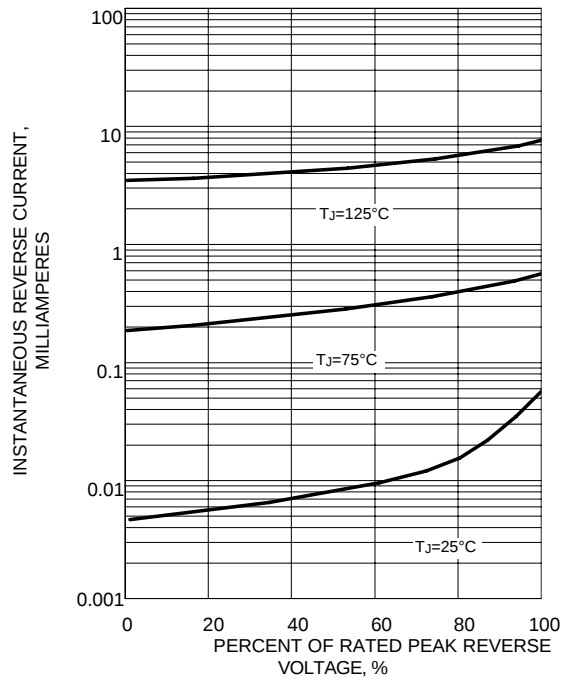
Average Forward Rectified Current - Amperes versus  
Ambient Temperature - °C

Figure 4  
Peak Forward Surge Current



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

FIG. 5 - TYPICAL REVERSE  
CHARACTERISTICS

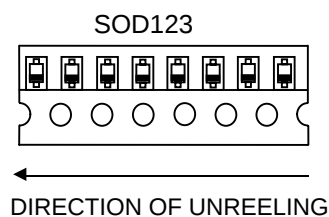


## **SURFACE MOUNT**

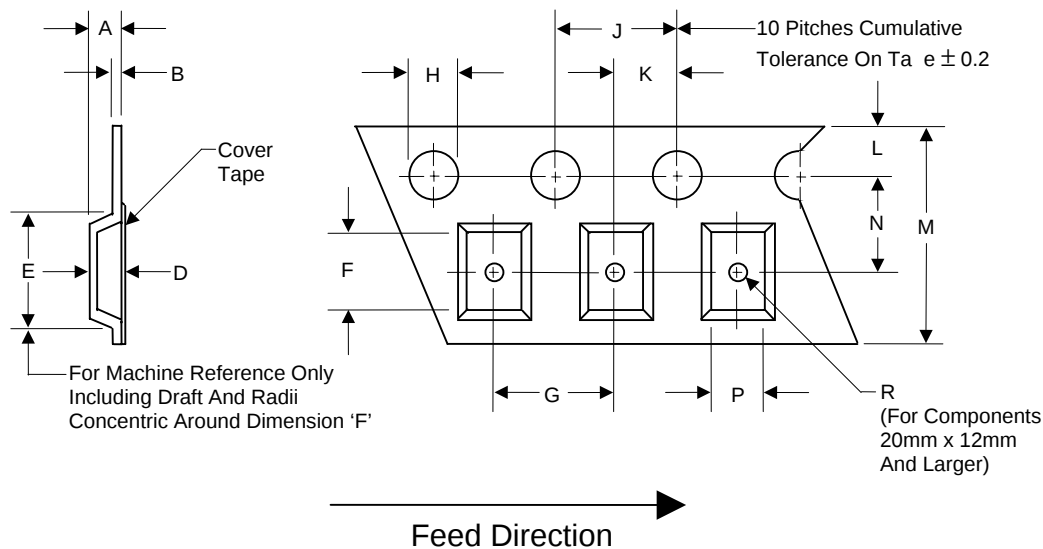
### **SURFACE MOUNT**

| TYPE   | TAPE SIZE (mm) | BULK/TUBE QUANTITY | 7 INCH REEL QUANTITY | 13 INCH REEL QUANTITY |
|--------|----------------|--------------------|----------------------|-----------------------|
| SOD123 | 8              | -----              | 3000                 | -----                 |

### **TAPE DIMENSIONS AND ORIENTATION** **8mm Tape (in millimeters)**



### **Embossed Carrier Tape Specifications** **(8mm Tape)**

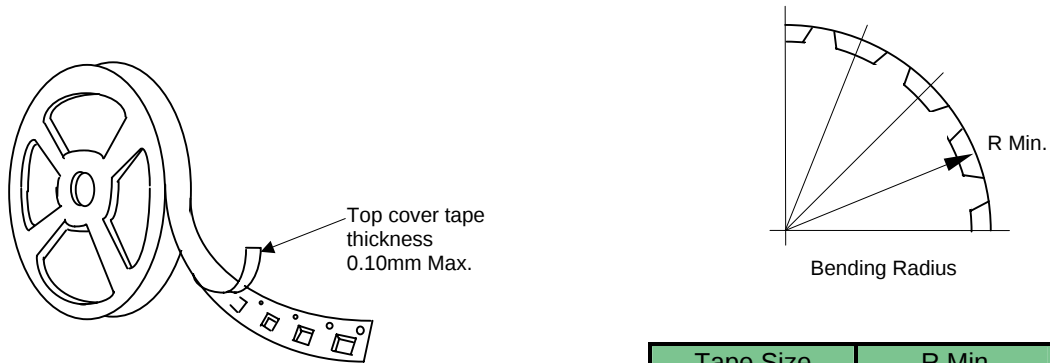


| Tape Size | H                         | L         | J       | B (Max) | D, F, P    | Constant Dimensions |
|-----------|---------------------------|-----------|---------|---------|------------|---------------------|
| 8         | 1.5 <sub>+0.1, -0.0</sub> | 1.75±0.10 | 4.0±0.1 | 0.600   | See Note 1 |                     |

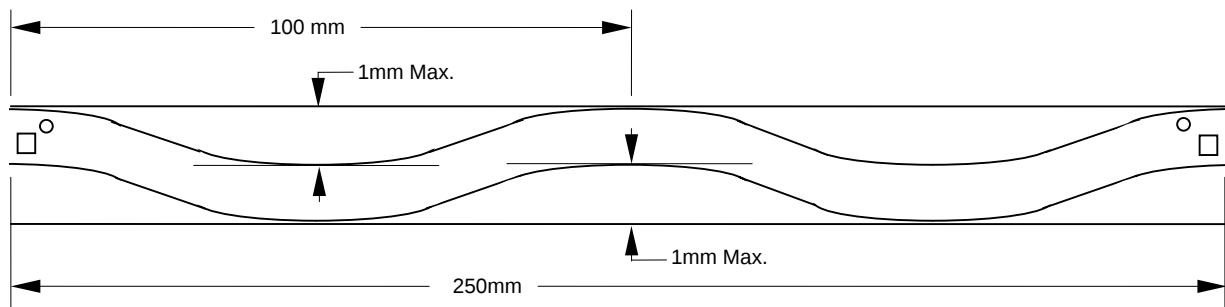
| Tape Size | E (Max) | R (Min) | N        | A (Max) | K        | M        | Variable Dimensions |
|-----------|---------|---------|----------|---------|----------|----------|---------------------|
| 8mm       | 4.2     | 1.0     | 3.5±0.05 | 2.4     | 2.0±0.05 | 8.0±0.30 |                     |

| Tape Size | G        |          |           |           |
|-----------|----------|----------|-----------|-----------|
|           | 4.0±0.10 | 8.0±0.10 | 12.0±0.10 | 16.0±0.10 |
| 8mm       | X        |          |           |           |

## **SURFACE MOUNT**

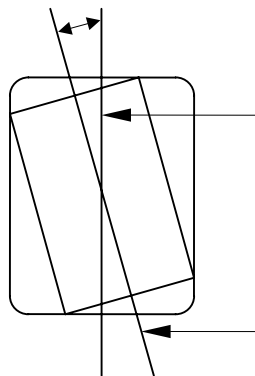


| Tape Size | R Min. |
|-----------|--------|
| 8mm       | 25mm   |



Camber (Top View)

Allowable camber to be 1mm/100mm non-accumulative over 250mm



## Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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