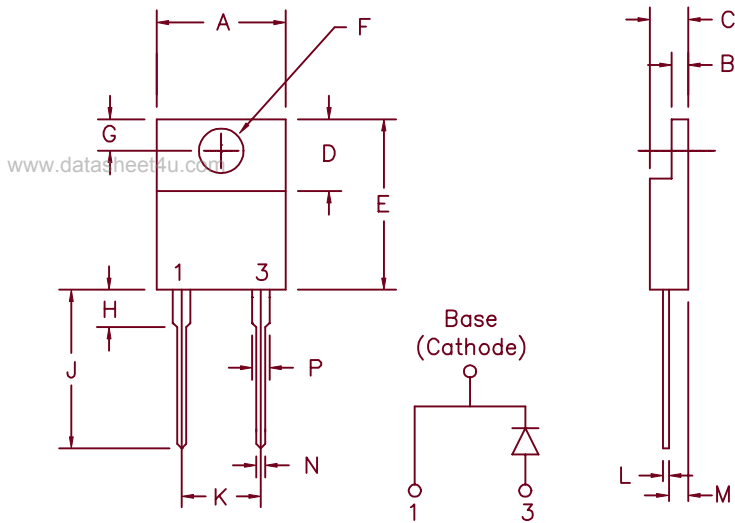


10 Amp Schottky Barrier Rectifiers MS1003 — MS1004



| Dim. | Inches | | Millimeter | | Notes |
|------|---------|---------|------------|---------|-------|
| | Minimum | Maximum | Minimum | Maximum | |
| A | .390 | .415 | 9.91 | 10.54 | |
| B | .045 | .055 | 1.14 | 1.40 | |
| C | .180 | .190 | 4.57 | 4.83 | |
| D | .245 | .260 | 6.22 | 6.60 | |
| E | .550 | .650 | 13.97 | 16.51 | |
| F | .139 | .155 | 3.53 | 3.94 | Dia. |
| G | .100 | .120 | 2.54 | 3.05 | |
| H | --- | .250 | --- | 6.35 | |
| J | .500 | .580 | 12.70 | 14.73 | |
| K | .190 | .210 | 4.83 | 5.33 | |
| L | .014 | .025 | 0.35 | 0.63 | |
| M | .080 | .115 | 2.03 | 2.92 | |
| N | .028 | .038 | 0.71 | 0.96 | |
| P | .045 | .055 | 1.14 | 1.40 | |

Similar to TO-220AC

| Microsemi Catalog Number | Industry Part Number | Repetitive Peak Reverse Voltage | Transient Peak Reverse Voltage |
|--------------------------|--------------------------|---------------------------------|--------------------------------|
| MS1003 | MBR730 MBR1030 | 30V | 30V |
| MS1004 | 6TQ035,6TQ040 10TQ040 | 40V | 40V |

- Schottky barrier rectifier
- Guard ring protection
- Low power loss, high efficiency
- V_{RRM} 30 to 40 Volts
- Reverse energy tested

Electrical Characteristics

| | | |
|------------------------------|----------------------------|--|
| Average Forward Current | $I_F(AV)$ 10 Amps | $T_C = 158^\circ\text{C}$, Square wave, $R_{\theta JC} = 2.5^\circ\text{C/W}$ |
| Maximum Surge Current | I_{FSM} 225 Amps | 8.3ms, half sine, $T_J = 175^\circ\text{C}$ |
| Max. Peak Forward Voltage | V_{FM} .48 Volts | $I_{FM} = 10A$, $T_J = 175^\circ\text{C}^*$ |
| Max. Peak Forward Voltage | V_{FM} .65 Volts | $I_{FM} = 10A$, $T_J = 25^\circ\text{C}^*$ |
| Max. Peak Reverse Current | I_{RM} 10 mA | V_{RRM} , $T_J = 125^\circ\text{C}^*$ |
| Max. Peak Reverse Current | I_{RM} 250 μA | V_{RRM} , $T_J = 25^\circ\text{C}$ |
| Typical Junction Capacitance | C_J 660 pF | $V_R = 5.0V$, $T_J = 25^\circ\text{C}$ |

*Pulse test: Pulse width 300 μsec . Duty cycle 2%

Thermal and Mechanical Characteristics

| | | |
|-------------------------------|-----------------|---|
| Storage temp range | T_{STG} | -55°C to $+175^\circ\text{C}$ |
| Operating junction temp range | T_J | -55°C to $+175^\circ\text{C}$ |
| Max thermal resistance | $R_{\theta JC}$ | 2.5°C/W Junction to case |
| Mounting torque | | 8-12 inch pounds 6-32 screw |
| Weight | | .08 ounces (2.3 grams) typical |

MS1003 — MS1004

Figure 1
Typical Forward Characteristics

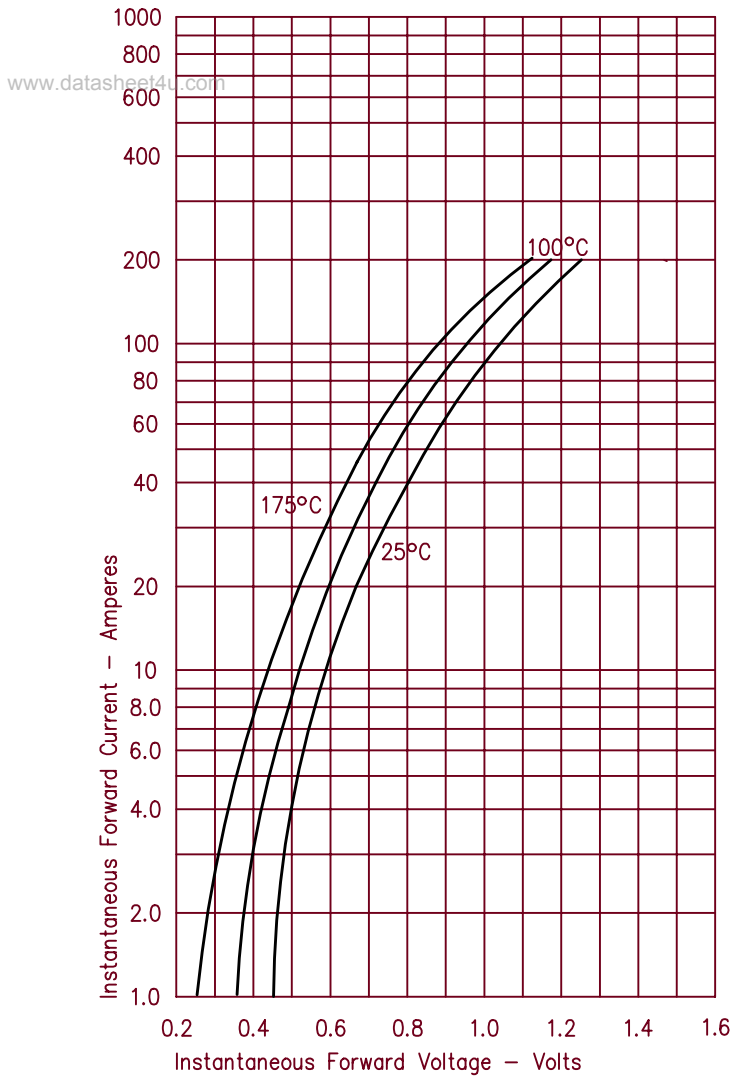


Figure 3
Typical Junction Capacitance

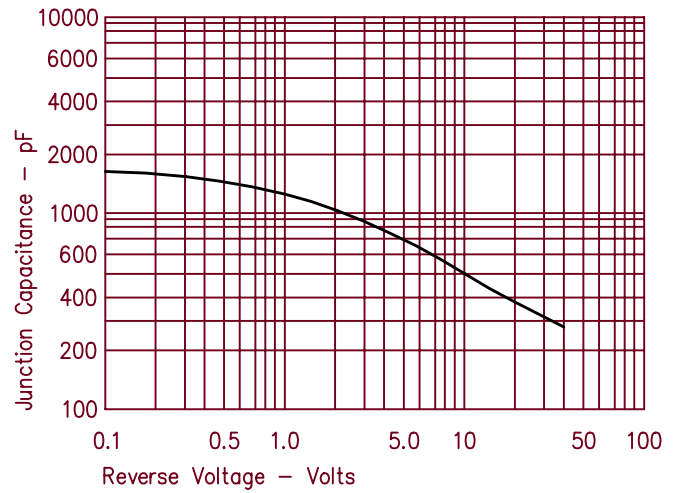


Figure 4
Forward Current Derating

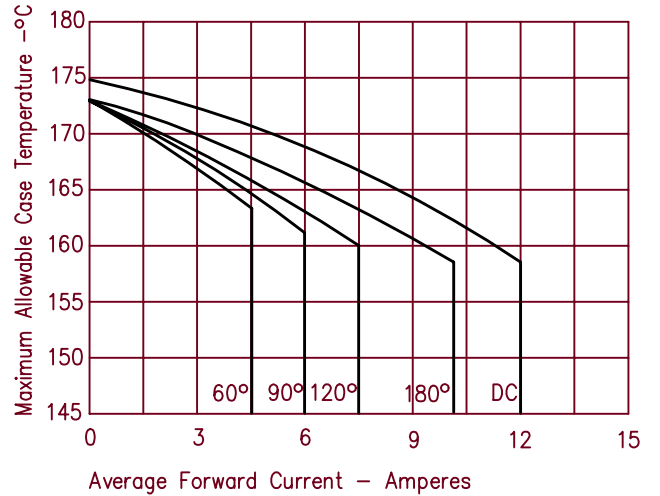


Figure 2
Typical Reverse Characteristics

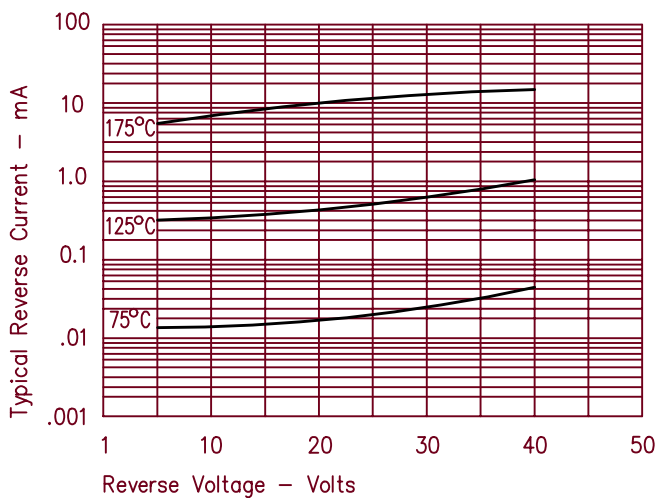


Figure 5
Maximum Forward Power Dissipation

