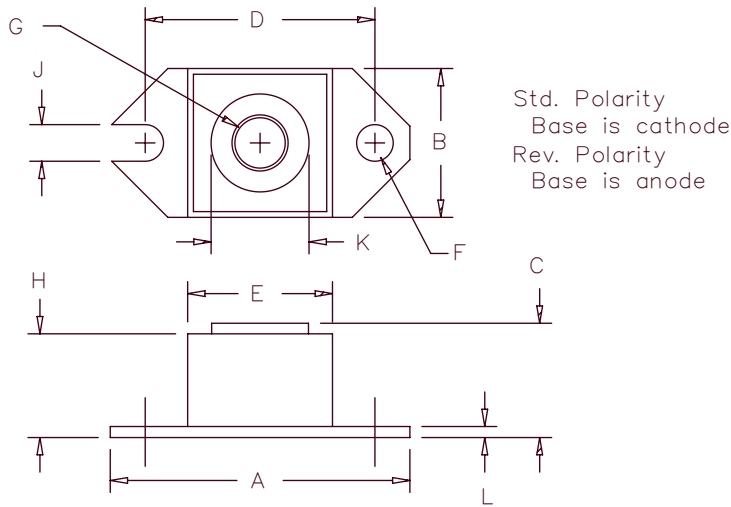


120 Amp Schottky Rectifier

HS12380–HS123100



| Dim. | Inches | | Millimeter | | Notes |
|------|---------|---------|------------|---------|-------|
| | Minimum | Maximum | Minimum | Maximum | |
| A | 1.52 | 1.56 | 38.61 | 39.62 | |
| B | .725 | .775 | 18.42 | 19.69 | |
| C | .605 | .625 | 15.37 | 15.88 | |
| D | 1.182 | 1.192 | 30.02 | 30.28 | |
| E | .745 | .755 | 18.92 | 19.18 | Sq. |
| F | .152 | .160 | 3.86 | 4.06 | Dia. |
| G | | 1/4–20 | UNC–2B | | |
| H | .525 | .580 | 13.34 | 14.73 | |
| J | .156 | .160 | 3.96 | 4.06 | |
| K | .495 | .505 | 12.57 | 12.83 | Dia. |
| L | .120 | .130 | 3.05 | 3.30 | |

| Microsemi Catalog Number | Industry Part Number | Working Peak Reverse Voltage | Repetitive Peak Reverse Voltage |
|--------------------------|-----------------------|------------------------------|---------------------------------|
| HS12380* | 123NQ080 MBR12080 | 80V | 80V |
| HS12390* | | 90V | 90V |
| HS123100* | 123NQ100 MBR120100 | 100V | 100V |

*Add Suffix R for Reverse Polarity

- Schottky Barrier Rectifier
- Guard Ring Protection
- 120 Amperes/80 to 100 Volts
- 175°C Junction Temperature
- Reverse Energy Tested
- ROHS Compliant

Electrical Characteristics

| | | |
|------------------------------------|---------------------|---|
| Average forward current | $I_F(AV)$ 120 Amps | $T_C = 112^\circ\text{C}$, Square wave, $R_{\theta JC} = 0.40^\circ\text{C/W}$ |
| Maximum surge current | I_{FSM} 2000 Amps | 8.3ms, half sine, $T_J = 175^\circ\text{C}$ |
| Maximum repetitive reverse current | $I_R(OV)$ 2 Amps | $f = 1\text{ KHZ}$, 25°C , 1 μsec square wave |
| Max peak forward voltage | V_{FM} .76 Volts | $I_{FM} = 120\text{A}; T_J = 125^\circ\text{C}^*$ |
| Max peak forward voltage | V_{FM} 0.91 Volts | $I_{FM} = 120\text{A}; T_J = 25^\circ\text{C}^*$ |
| Max peak reverse current | I_{RM} 75 mA | $V_{RRM}, T_J = 125^\circ\text{C}^*$ |
| Max peak reverse current | I_{RM} 3.0 mA | $V_{RRM}, T_J = 25^\circ\text{C}$ |
| Typical junction capacitance | C_J 3000 pF | $V_R = 5.0\text{V}, T_C = 25^\circ\text{C}$ |

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

Thermal and Mechanical Characteristics

| | | |
|--------------------------------------|-----------------|--|
| Storage temp range | T_{STG} | -55°C to 175°C |
| Operating junction temp range | T_J | -55°C to 175°C |
| Max thermal resistance per leg | $R_{\theta JC}$ | 0.40°C/W Junction to case |
| Typical thermal resistance (greased) | $R_{\theta CS}$ | 0.12°C/W Case to sink |
| Terminal Torque | | 35–40 inch pounds |
| Mounting Base Torque | | 20–25 inch pounds |
| Weight | | 1.1 ounces (32 grams) typical |

HS12380 – HS123100

Figure 1
Typical Forward Characteristics

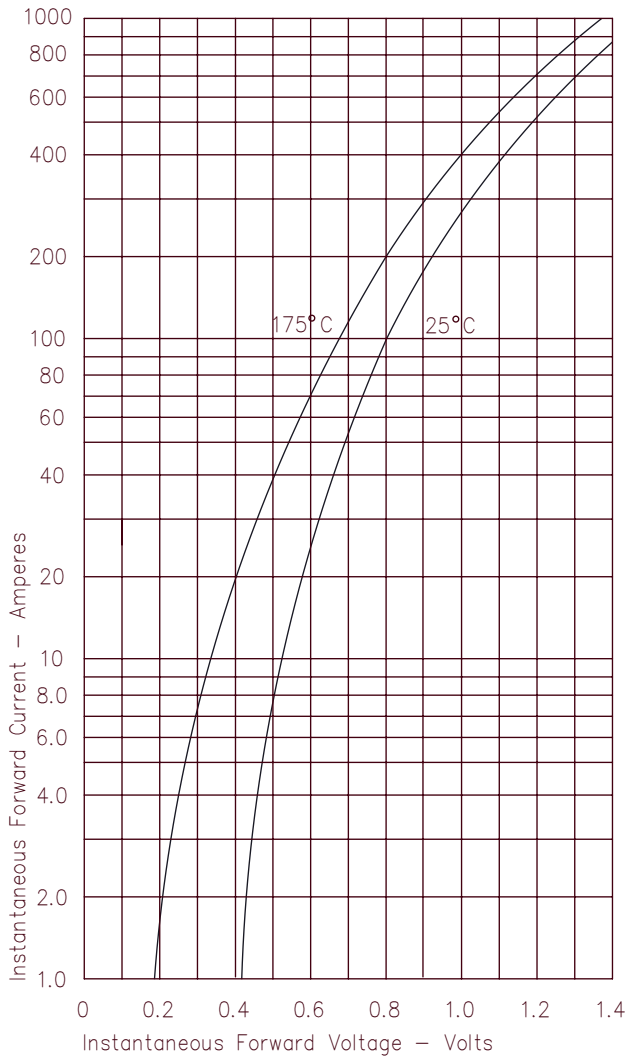


Figure 3
Typical Junction Capacitance

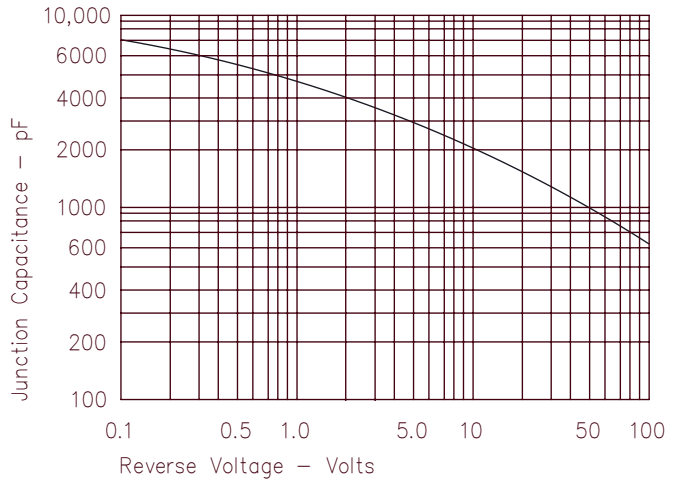


Figure 4
Forward Current Derating

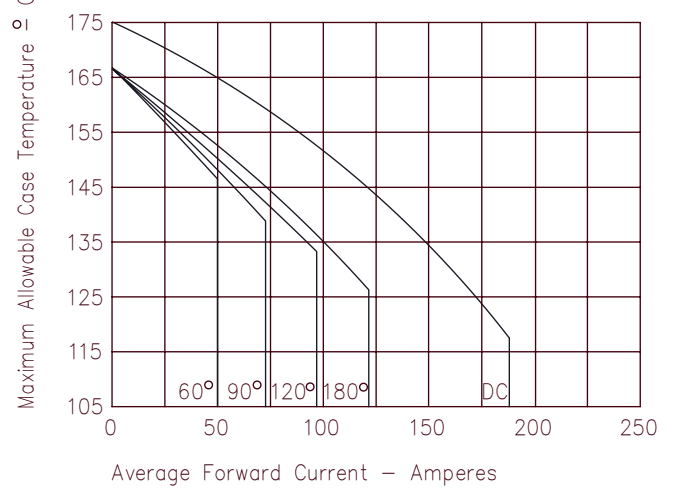


Figure 2
Typical Reverse Characteristics

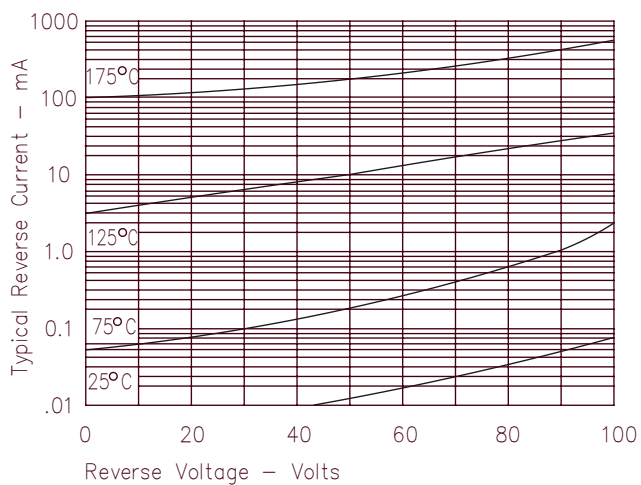
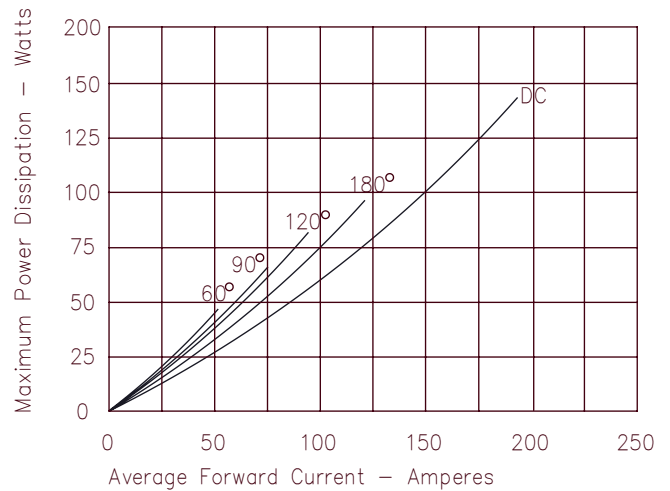


Figure 5
Maximum Forward Power Dissipation



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