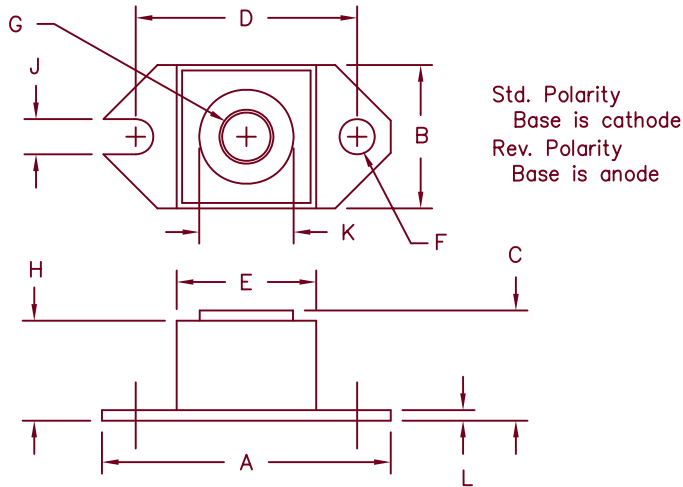


120 Amp Schottky Rectifier HS12035 — HS12045



| Dim. | Inches | | Millimeter | | Notes |
|------|---------|---------|---------------|---------|-------|
| | Minimum | Maximum | Minimum | Maximum | |
| A | 1.52 | 1.56 | 38.86 | 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 | .570 | .580 | 14.49 | 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 |
|--------------------------|----------------------------------|------------------------------|---------------------------------|
| HS12035* | 120NQ035 124NQ035 MBR12035 | 35V | 35V |
| HS12040* | 120NQ040 124NQ040 MBR12040 | 40V | 40V |
| HS12045* | 120NQ045 124NQ045 MBR12045 | 45V | 45V |

* Add Suffix R for Reverse Polarity

- Schottky Barrier Rectifier
- Guard Ring Protection
- 120 Amperes/45 Volts
- 150°C Junction Temperature
- Reverse Energy Tested
- VRRM 35 – 45 Volts

Electrical Characteristics

| | | |
|------------------------------------|---------------------|--------------------------------------------------------------------|
| Average forward current | $I_F(AV)$ 120 Amps | $T_C = 100^\circ C$, Square wave, $R_{\theta JC} = .40^\circ C/W$ |
| Maximum surge current | I_{FSM} 2000 Amps | 8.3ms, half sine, $T_J = 125^\circ C$ |
| Maximum repetitive reverse current | $I_R(OV)$ 2 Amps | $f = 1\text{ KHZ}$, $25^\circ C$ |
| Max peak forward voltage | V_{FM} 0.49 Volts | $I_{FM} = 120A$: $T_J = 125^\circ C^*$ |
| Max peak forward voltage | V_{FM} 0.55 Volts | $I_{FM} = 120A$: $T_J = 25^\circ C^*$ |
| Max peak reverse current | I_{RM} 2A | V_{RRM} , $T_J = 125^\circ C^*$ |
| Max peak reverse current | I_{RM} 5mA | V_{RRM} , $T_J = 25^\circ C$ |
| Typical junction capacitance | C_J 5500pF | $V_R = 5.0V$, $T_C = 25^\circ C$ |

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

Thermal and Mechanical Characteristics

| | | |
|--------------------------------------|-----------------|-----------------------------------|
| Storage temp range | T_{STG} | $-55^\circ C$ to $150^\circ C$ |
| Operating junction temp range | T_J | $-55^\circ C$ to $150^\circ C$ |
| Max thermal resistance | $R_{\theta JC}$ | $0.40^\circ C/W$ Junction to case |
| Typical thermal resistance (greased) | $R_{\theta CS}$ | $0.12^\circ C/W$ Case to sink |
| Terminal Torque | | 35-40 inch pounds |
| Mounting Base Torque | | 20-25 inch pounds |
| Weight | | 1.1 ounces (32 grams) typical |



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05-10-07 Rev. 3

HS12035 – HS12045

Figure 1
Typical Forward Characteristics

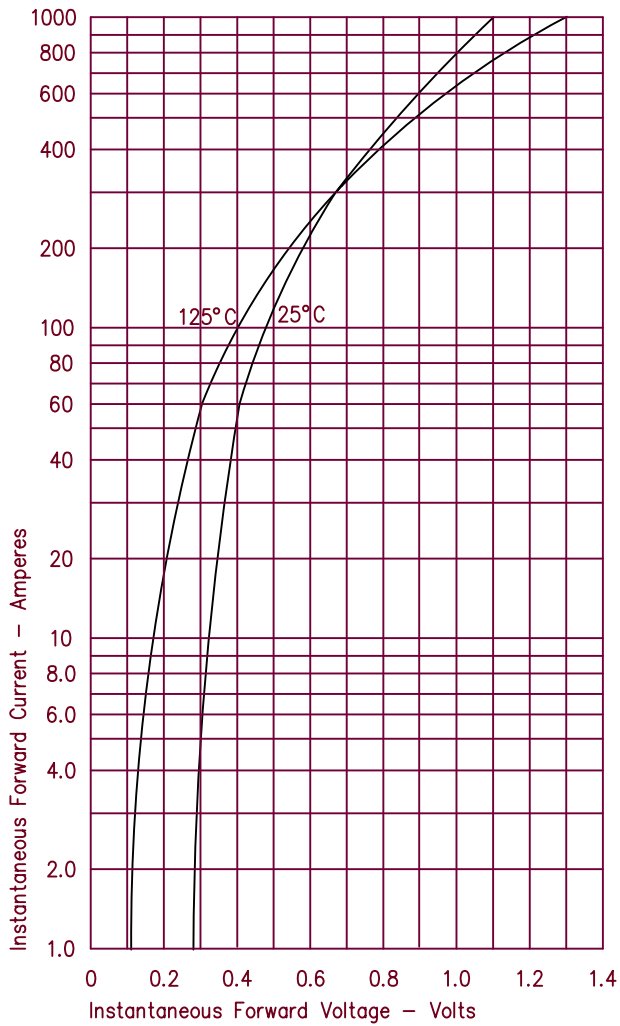


Figure 3
Typical Junction Capacitance

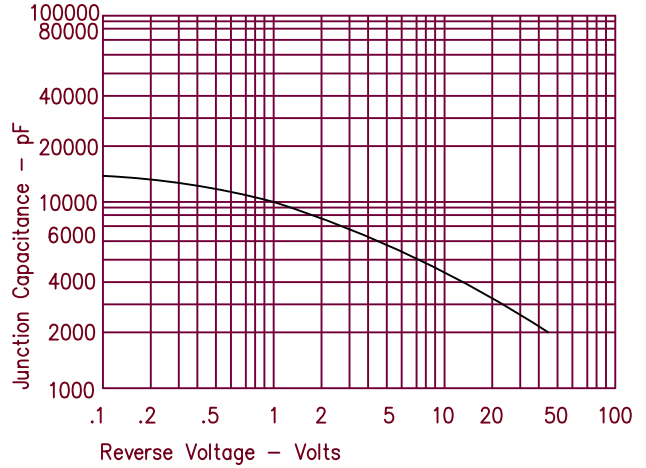


Figure 4
Forward Current Derating

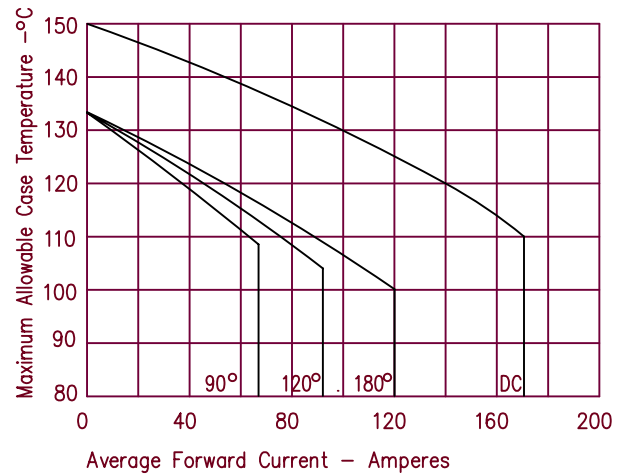


Figure 2
Typical Reverse Characteristics

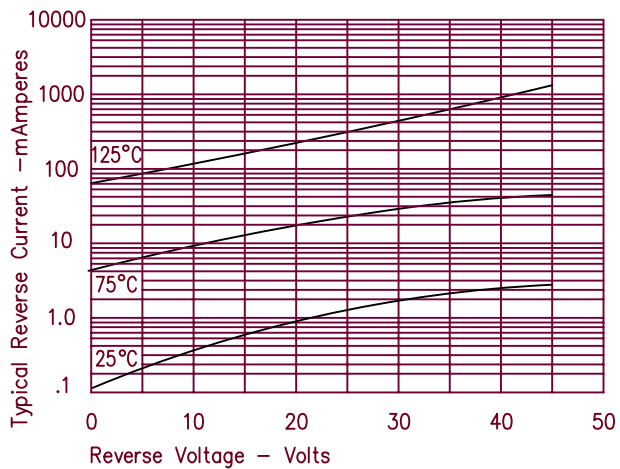


Figure 5
Maximum Forward Power Dissipation

