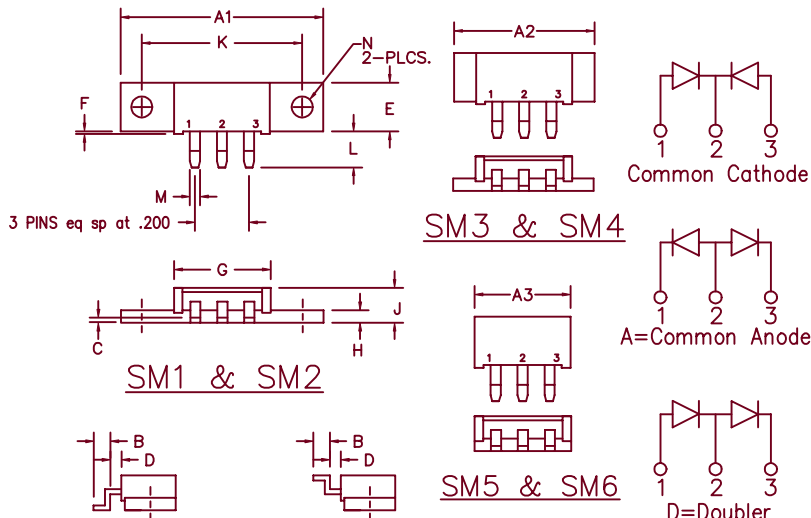


Schottky Power Surface Mount FST80150SM1 – SM6 Series



TYP. PIN CONFIGURATION FOR SM1, SM3, & SM5
TYP. PIN CONFIGURATION FOR SM2, SM4, & SM6

Note: Baseplate Common with Pin 2

| Dim. | Inches | | Millimeter | | Notes |
|------|---------|---------|------------|---------|-------|
| | Minimum | Maximum | Minimum | Maximum | |
| A1 | 1.490 | 1.510 | 37.85 | 38.35 | |
| A2 | 1.020 | 1.040 | 26.12 | 26.42 | |
| A3 | .695 | .715 | 17.65 | 18.16 | |
| B | .110 | .120 | 2.79 | 3.04 | |
| C | .027 | .037 | 0.69 | 0.94 | |
| D | .100 | .110 | 2.54 | 2.79 | |
| E | .350 | .370 | 8.89 | 9.40 | |
| F | .015 | .025 | 0.38 | 0.64 | |
| G | .695 | .715 | 17.65 | 18.16 | |
| H | .088 | .098 | 2.24 | 2.49 | |
| J | .240 | .260 | 6.10 | 6.60 | |
| K | 1.180 | 1.195 | 29.97 | 30.35 | |
| L | .230 | .250 | 5.84 | 6.35 | |
| M | .065 | .085 | 1.65 | 2.16 | |
| N | .151 | .161 | 3.84 | 4.09 | Dia. |

| Microsemi Catalog Catalog Number | Industry Part Number | Working Peak Reverse Voltage | Repetitive Peak Reverse Voltage |
|--|----------------------------|------------------------------|---------------------------------|
| FST80150SM ^① ₋ ^② ₋ | 89CNQ150ASL 89CNQ150ASM | 150V | 150V |

Note: ① Specify (1-6) to identify package desired
② Specify C-Common Cathode, A-Common Anode, D-Doubler

- Schottky Barrier Rectifier
- Guard Ring Protection
- 2 X 40 Amperes Avg.
- 175°C Junction Temperature
- Reverse Energy Tested
- V_{RRM} – 150 Volts

Electrical Characteristics

| | | |
|---|---------------------|--|
| Average forward current per pkg | $I_{F(AV)}$ 80 Amps | $T_C = 144^\circ\text{C}$, Square wave, $R_{\theta JC} = 0.5^\circ\text{C/W}$ |
| Average forward current per leg | $I_{F(AV)}$ 40 Amps | $T_C = 144^\circ\text{C}$, Square wave, $R_{\theta JC} = 1.0^\circ\text{C/W}$ |
| Maximum surge current per leg | I_{FSM} 1000 Amps | 8.3 ms, half sine, $T_J = 175^\circ\text{C}$ |
| Max repetitive peak reverse current per leg | $I_{R(OV)}$ 2 Amps | $f = 1 \text{ KHZ}$, 25°C , 1 usec square wave |
| Max peak forward voltage per leg | V_{FM} 0.86 volts | $I_{FM} = 40\text{A}$; $T_J = 25^\circ\text{C}^*$ |
| Max peak reverse current per leg | I_{RM} 3 mA | V_{RRM} , $T_C = 125^\circ\text{C}^*$ |
| Max peak reverse current per leg | I_{RM} 1 mA | V_{RRM} , $T_J = 25^\circ\text{C}$ |
| Typical junction capacitance per leg | C_J 970 pF | $V_R = 5.0\text{V}$, $T_C = 25^\circ\text{C}$ |

*Pulse test: Pulse width 300 usec, 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 | $R_{\theta JC}$ | 1.0°C/W Junction to case |
| Max thermal resistance per pkg. | $R_{\theta JC}$ | 0.5°C/W Junction to case |
| Typical thermal resistance (greased) | $R_{\theta CS}$ | 0.3°C/W Case to sink |
| Mounting Base Torque | | 10 inch pounds maximum (SM1, 2) |
| Weight | | SM1-2 0.3 ounce (8.4 grams) typical SM3-4 0.24 ounce (6.7 grams) typical SM5-6 0.18 ounce (5.2 grams) typical |

FST80150SM1 – SM6

Figure 1
Typical Forward Characteristics

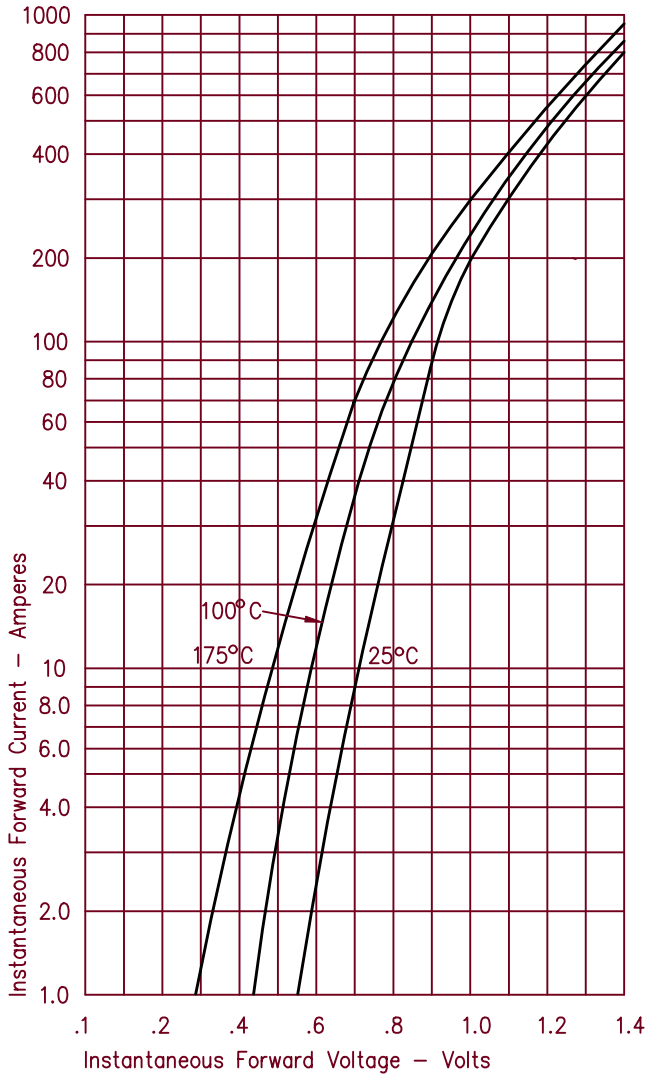


Figure 3
Typical Junction Capacitance

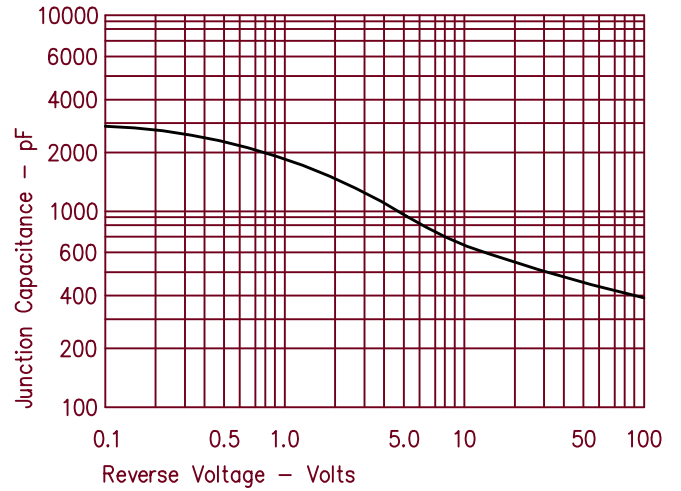


Figure 4
Forward Current Derating – Per Leg

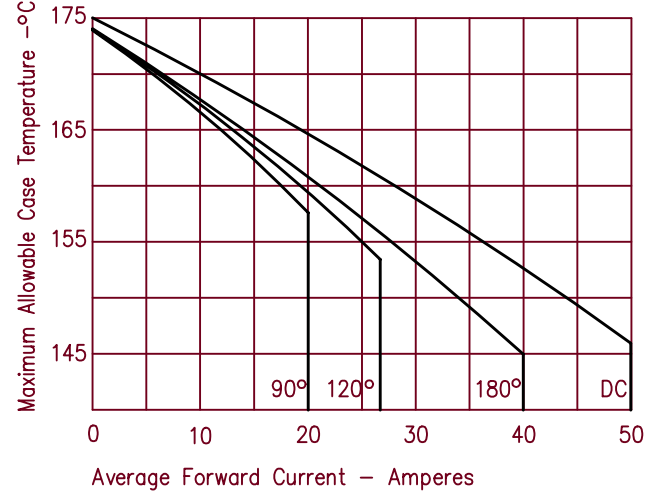


Figure 2
Typical Reverse Characteristics

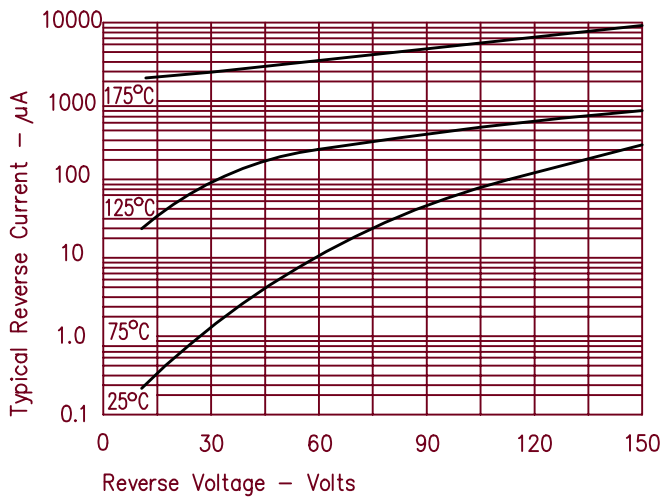


Figure 5
Maximum Forward Power Dissipation

