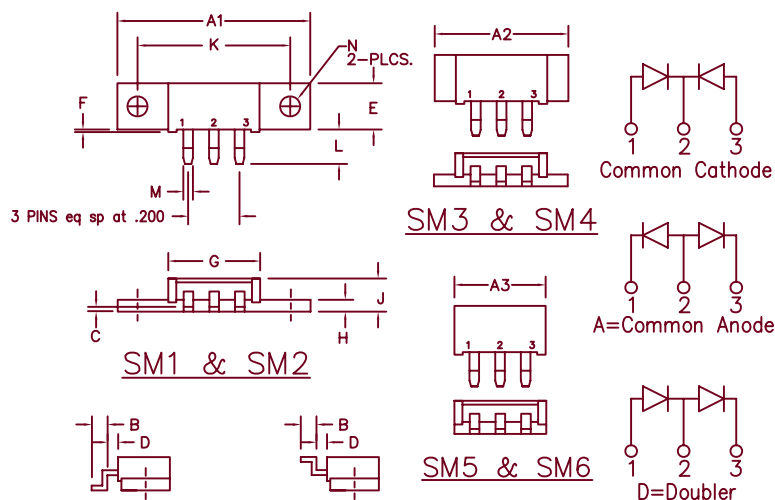


Schottky Power Surface Mount FST81SM1 – SM6 Series



TYP. PIN CONFIGURATION TYP. PIN CONFIGURATION
FOR SM1, SM3, & SM5 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 |
|-------------------------------------|----------------------------|---------------------------------|------------------------------------|
| FST8135SM ①② | 80CNQ035ASL 80CNQ035ASM | 35V | 35V |
| FST8140SM -- | 80CNQ040ASL 80CNQ040ASM | 40V | 40V |
| FST8145SM -- | 80CNQ045ASL 80CNQ045ASM | 45V | 45V |

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
- Common Cathode Center Tap
- Low Forward Voltage
- 2 X 40 Amperes Avg.
- 150°C Junction Temperature
- Reverse Energy Tested

| Electrical Characteristics | | |
|---|----------------------------|---|
| Average forward current per pkg | I _{F(AV)} 80 Amps | T _C = 110°C, Square wave, R _{θJC} = 0.5°C/W |
| Average forward current per leg | I _{F(AV)} 40 Amps | T _C = 110°C, Square wave, R _{θJC} = 1.0°C/W |
| Maximum surge current per leg | I _{FSM} 800 Amps | 8.3 ms, half sine, T _J = 150°C |
| Max repetitive peak reverse current per leg | I _{R(OV)} 2 Amps | f = 1 KHZ, 25°C, 1 usec square wave |
| Max peak forward voltage per leg | V _{FM} 0.47 volts | I _{FM} = 40A: T _J = 150°C* |
| Max peak forward voltage per leg | V _{FM} 0.53 volts | I _{FM} = 40A: T _J = 25°C* |
| Max peak reverse current per leg | I _{RM} 500 mA | V _{RRM} , T _C = 125°C* |
| Max peak reverse current per leg | I _{RM} 3.0 mA | V _{RRM} , T _J = 25°C |
| Typical junction capacitance per leg | C _J 2100 pF | V _R = 5.0V, T _C = 25°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 150°C |
| Max thermal resistance per leg | R _{θJC} | 1.0°C/W Junction to case |
| Max thermal resistance per pkg. | R _{θJC} | 0.5°C/W Junction to case |
| Typical thermal resistance (greased) | R _{θCS} | 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 |



SCOTTSDALE

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05-30-07 Rev. 3

FST81SM1 — SM6

Figure 1
Typical Forward Characteristics — Per Leg

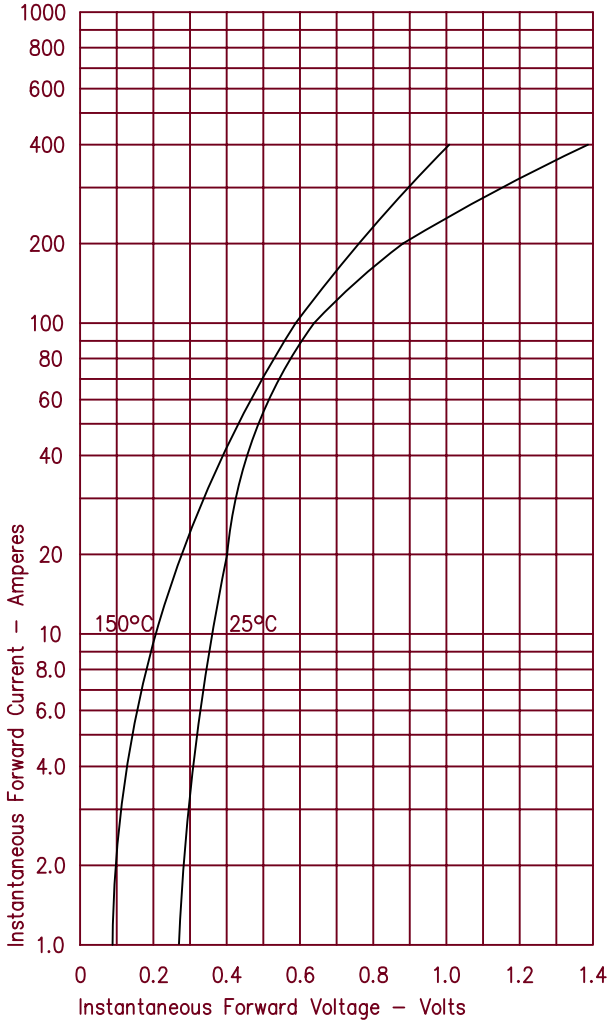


Figure 3
Typical Junction Capacitance — Per Leg

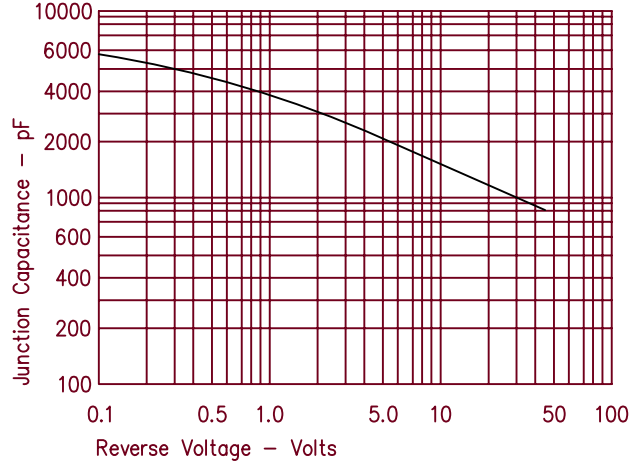


Figure 4
Forward Current Derating — Per Leg

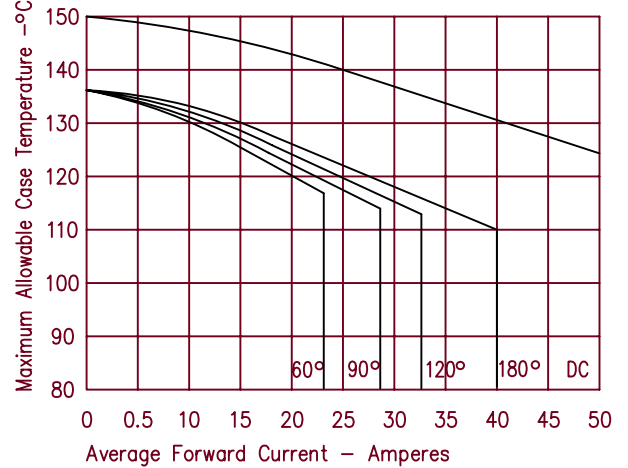


Figure 2
Typical Reverse Characteristics — Per Leg

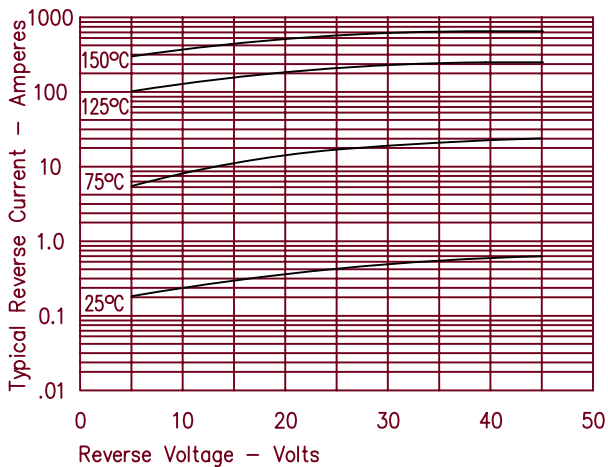


Figure 5
Maximum Forward Power Dissipation — Per Leg

