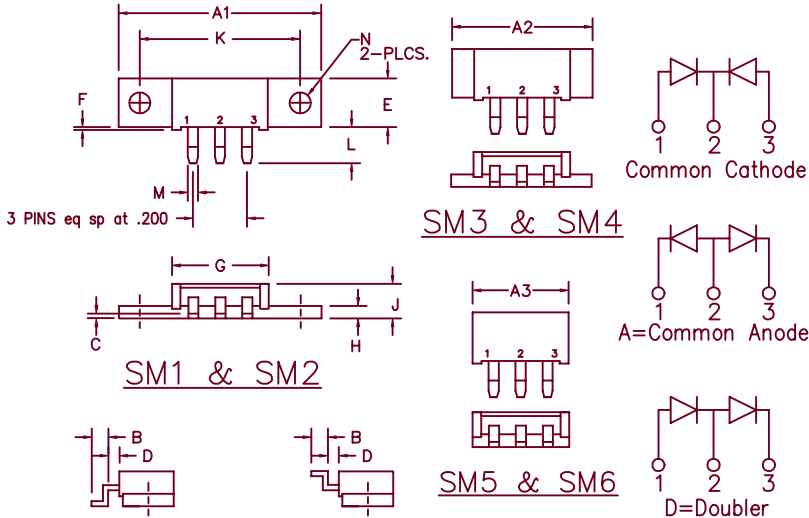


# Schottky Power Surface Mount FST80SM1–SM6 Series



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
FST8035SM <sup>①②</sup>	81CNQ035ASL 81CNQ035ASM	35V	35V
FST8040SM --	81CNQ040ASL 81CNQ040ASM	40V	40V
FST8045SM --	81CNQ045ASL 81CNQ045ASM	45V	45V
FST8050SM --		50V	50V

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
- $V_{RRM}$  – 35 to 50 Volts

## Electrical Characteristics

Average forward current per pkg	$I_{F(AV)}$ 80 Amps	$T_C = 145^\circ\text{C}$ , Square wave, $R_{\theta JC} = 0.5^\circ\text{C/W}$
Average forward current per leg	$I_{F(AV)}$ 40 Amps	$T_C = 145^\circ\text{C}$ , Square wave, $R_{\theta JC} = 1.0^\circ\text{C/W}$
Maximum surge current per leg	$I_{FSM}$ 800 Amps	8.3 ms, half sine, $T_J = 175^\circ\text{C}$
Max repetitive peak reverse current per leg	$I_{R(OV)}$ 2 Amps	$f = 1 \text{ KHZ}$ , $25^\circ\text{C}$ , 1 usec square wave
Max peak forward voltage per leg	$V_{FM}$ 0.49 volts	$I_{FM} = 40\text{A}$ : $T_J = 175^\circ\text{C}^*$
Max peak forward voltage per leg	$V_{FM}$ 0.68 volts	$I_{FM} = 40\text{A}$ : $T_J = 25^\circ\text{C}^*$
Max peak reverse current per leg	$I_{RM}$ 50 mA	$V_{RRM}$ , $T_C = 125^\circ\text{C}^*$
Max peak reverse current per leg	$I_{RM}$ 2.0 mA	$V_{RRM}$ , $T_J = 25^\circ\text{C}$
Typical junction capacitance per leg	$C_J$ 1900 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	$T_{STG}$	$-55^\circ\text{C}$ to $175^\circ\text{C}$
Operating junction temp range	$T_J$	$-55^\circ\text{C}$ to $175^\circ\text{C}$
Max thermal resistance per leg	$R_{\theta JC}$	$1.0^\circ\text{C/W}$ Junction to case
Max thermal resistance per pkg.	$R_{\theta JC}$	$0.5^\circ\text{C/W}$ Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	$0.3^\circ\text{C/W}$ 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

# FST80SM1 — FST80SM6

Figure 1  
Typical Forward Characteristics — Per Leg

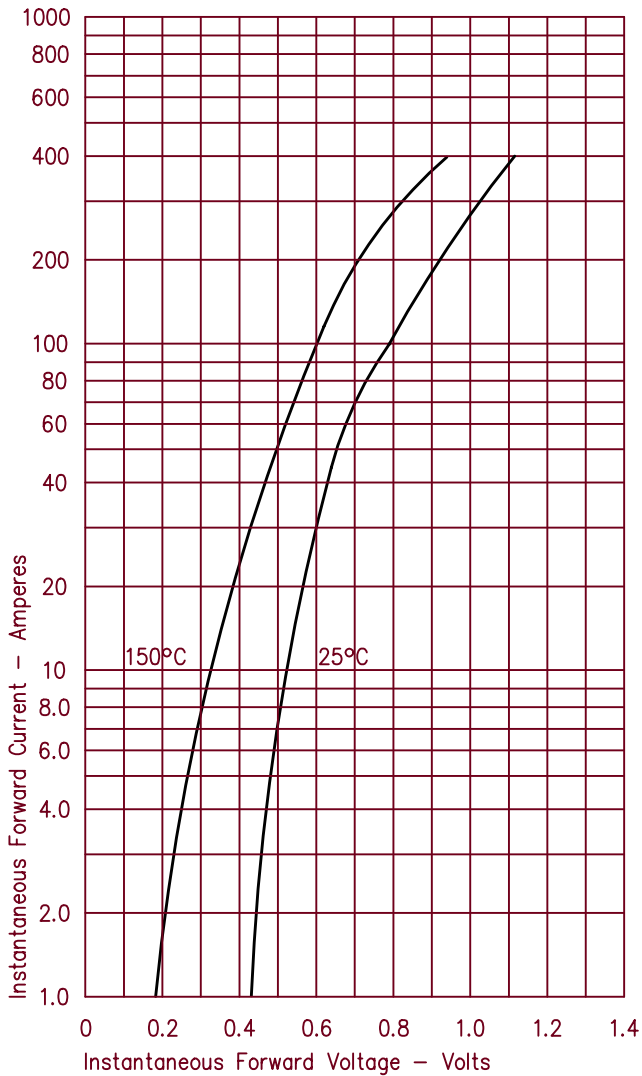


Figure 3  
Typical Junction Capacitance — Per Leg

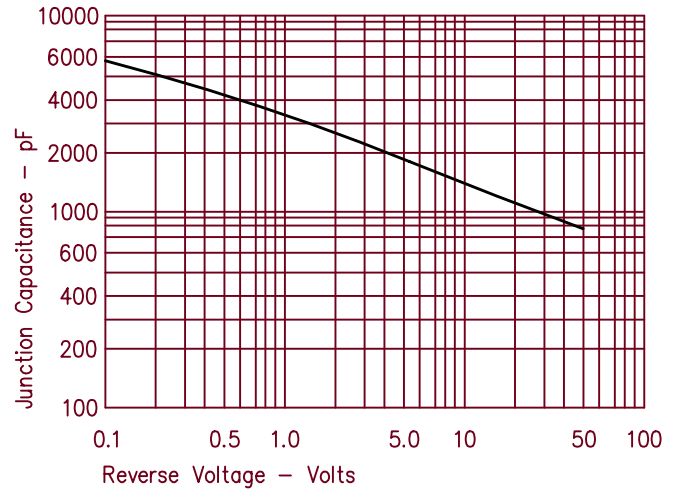


Figure 4  
Forward Current Derating — Per Leg

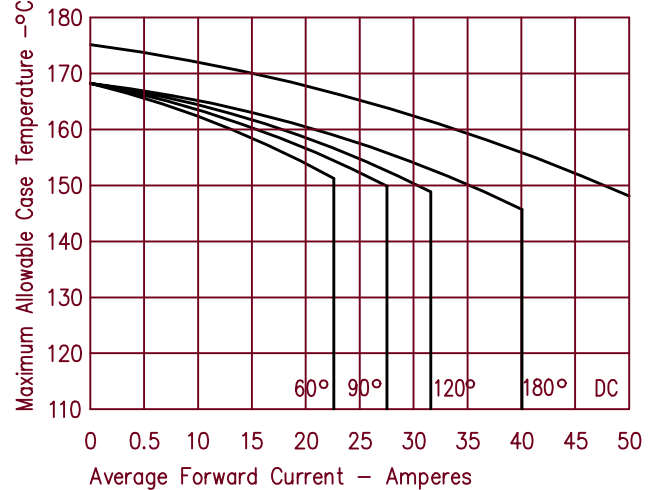


Figure 2  
Typical Reverse Characteristics — Per Leg

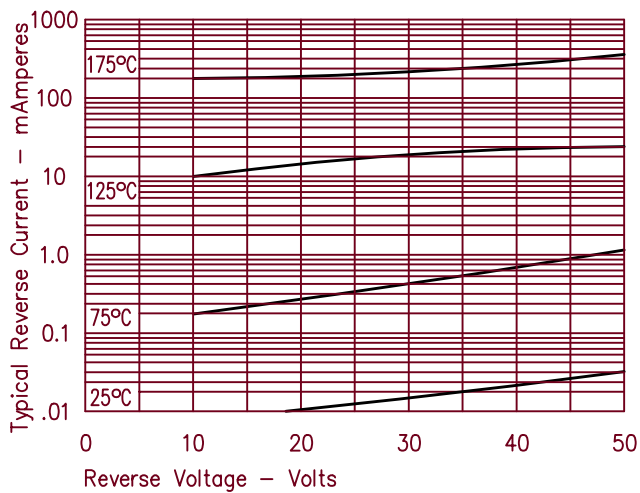


Figure 5  
Maximum Forward Power Dissipation — Per Leg

