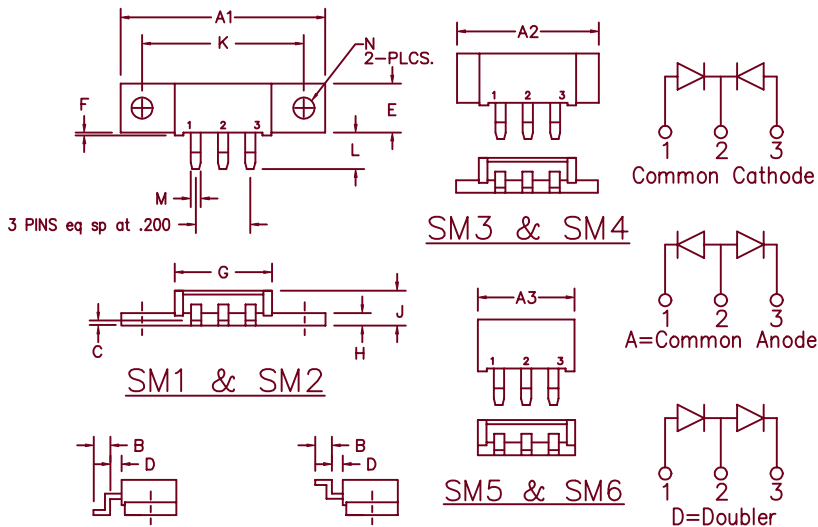


Schottky Power Surface Mount FST81SM1–SM6 Series



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

FST8130SM ①②
FST8135SM — —
FST8140SM — —
FST8145SM — —

Working Peak
Reverse Voltage

V_{RRM}

30V
35V
40V
45V

Repetitive Peak
Reverse Voltage

V_{RRM}

30V
35V
40V
45V

- 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

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

Electrical Characteristics

Average forward current per pkg	$I_{F(AV)}$ 80 Amps	$T_C = 110^\circ\text{C}$, Square wave, $R_{\theta JC} = 0.5^\circ\text{C/W}$
Average forward current per leg	$I_{F(AV)}$ 40 Amps	$T_C = 110^\circ\text{C}$, 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, $T_J = 150^\circ\text{C}$
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} 0.47 volts	$I_{FM} = 40\text{A}$: $T_J = 150^\circ\text{C}^*$
Max peak forward voltage per leg	V_{FM} 0.53 volts	$I_{FM} = 40\text{A}$: $T_J = 25^\circ\text{C}^*$
Max peak reverse current per leg	I_{RM} 500 mA	V_{RRM} , $T_C = 125^\circ\text{C}^*$
Max peak reverse current per leg	I_{RM} 3.0 mA	V_{RRM} , $T_J = 25^\circ\text{C}$
Typical junction capacitance per leg	C_J 2100 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 150°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

FST81SM1 — SM6

Figure 1
Typical Forward Characteristics — Per Leg

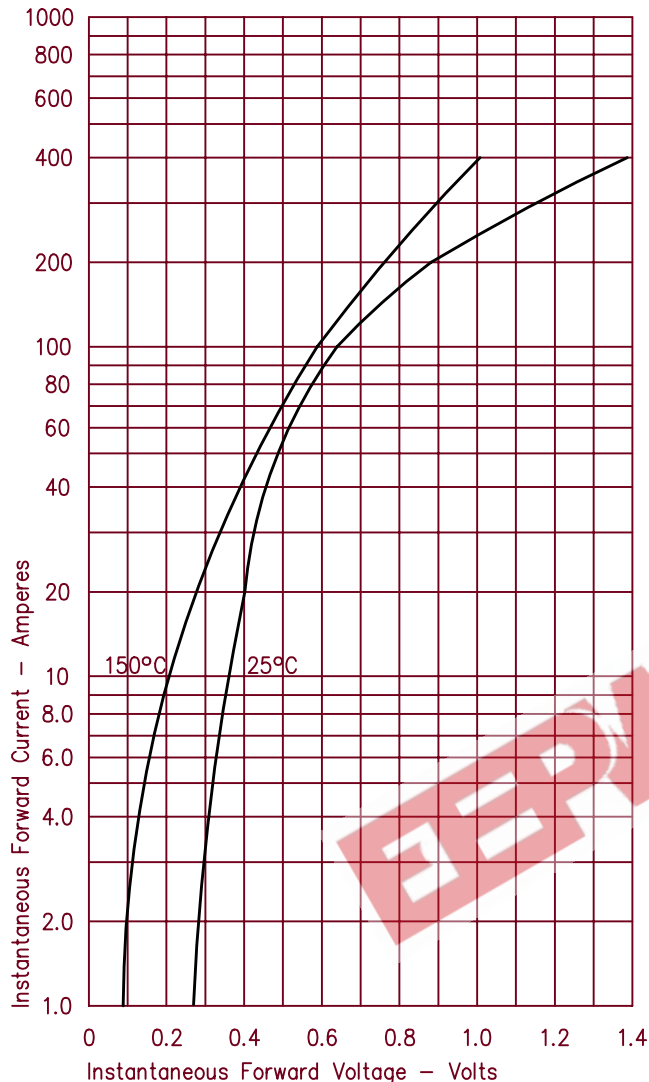


Figure 2
Typical Reverse Characteristics — Per Leg

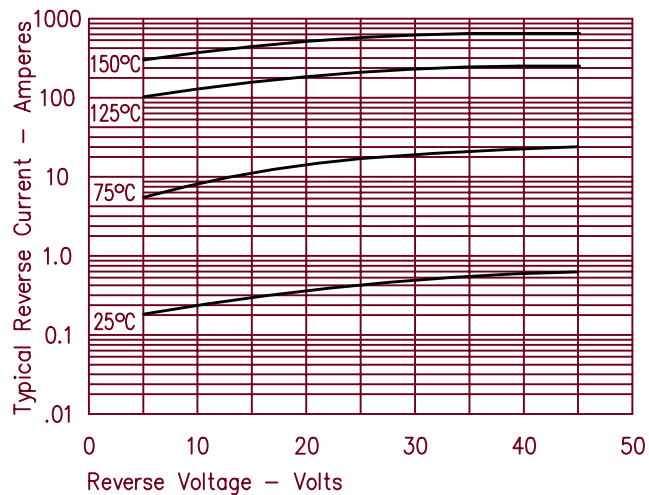


Figure 3
Typical Junction Capacitance — Per Leg

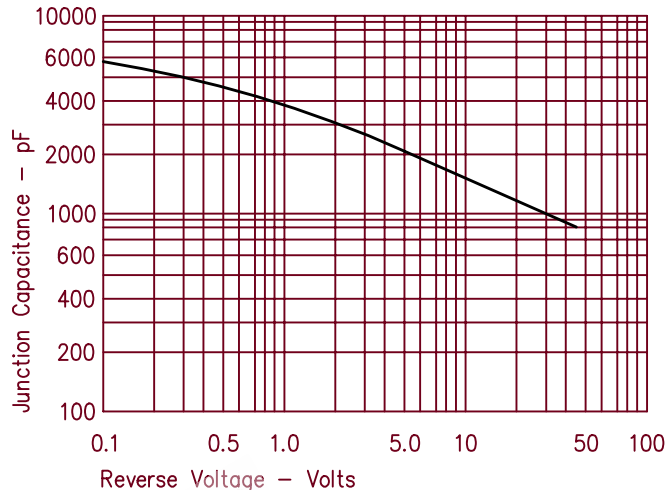


Figure 4
Forward Current Derating — Per Leg

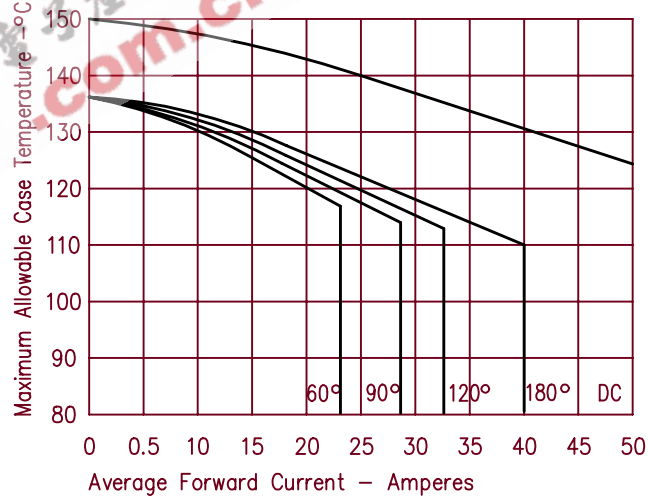


Figure 5
Maximum Forward Power Dissipation — Per Leg

