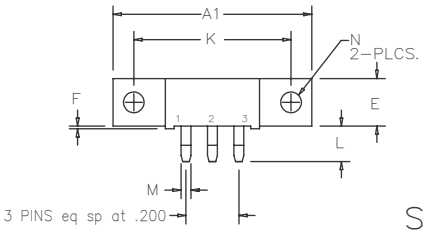
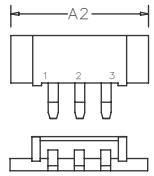
Schottky Power Surface Mount

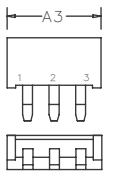
FST80150SM1–SM6 Series



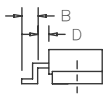
SM1 & SM2



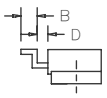
SM3 & SM4



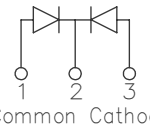
SM5 & SM6

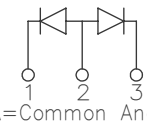


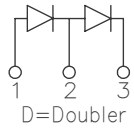
TYP. PIN CONFIGURATION FOR SM1, SM3, & SM5



TYP. PIN CONFIGURATION FOR SM2, SM4, & SM6







Note: Baseplate Common with Pin 2

Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
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 ①②	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
- ROHS Compliant

Electrical Characteristics

Average forward current per pkg	$I_{F(AV)}$ 80 Amps	T_C = 144°C, Square wave, $R_{\theta JC}$ = 0.5°C/W
Average forward current per leg	$I_{F(AV)}$ 40 Amps	T_C = 144°C, Square wave, $R_{\theta JC}$ = 1.0°C/W
Maximum surge current per leg	I_{FSM} 1000 Amps	8.3 ms, half sine, T_J = 175°C
Max repetitive peak reverse current per leg	$I_{R(OV)}$ 2 Amps	f = 1 KHZ, 25°C, 1µsec square wave
Max peak forward voltage per leg	V_{FM} 0.86 volts	I_{FM} = 40A: T_J = 25°C*
Max peak reverse current per leg	I_{RM} 10 mA	V_{RRM}, T_C = 125°C*
Max peak reverse current per leg	I_{RM} 2.0 mA	V_{RRM}, T_J = 25°C
Typical junction capacitance per leg	C_J 970 pF	V_R = 5.0V, T_C = 25°C

*Pulse test: Pulse width 300µsec, 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

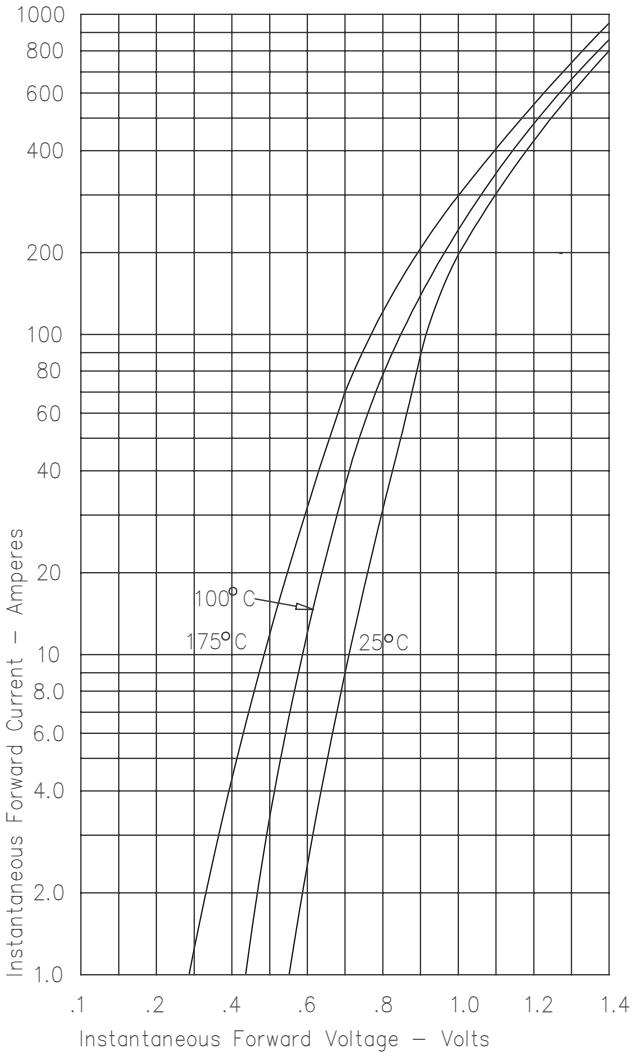


Figure 2
Typical Reverse Characteristics

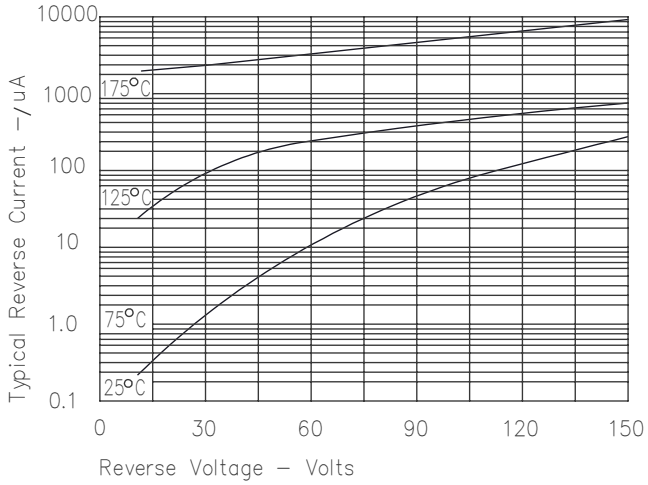


Figure 3
Typical Junction Capacitance

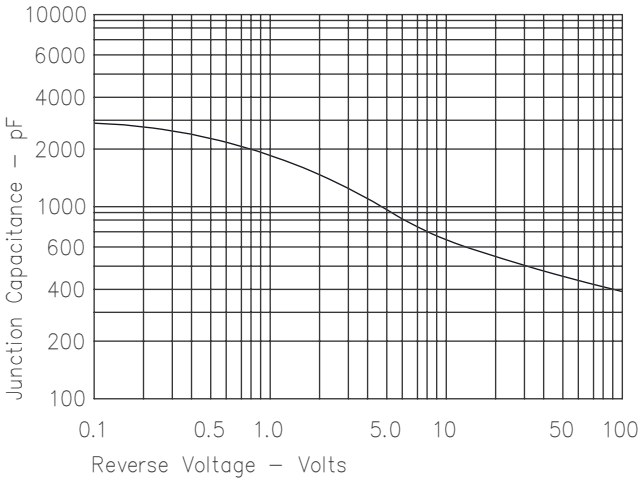


Figure 4
Forward Current Derating – Per Leg

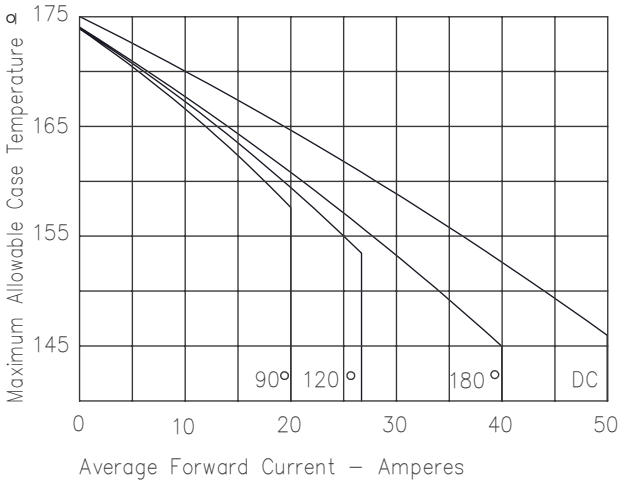


Figure 5
Maximum Forward Power Dissipation