Super Soft ® Ultrafast Recovery Module
SSUM300120
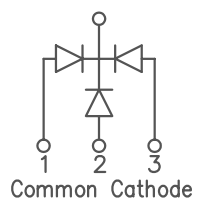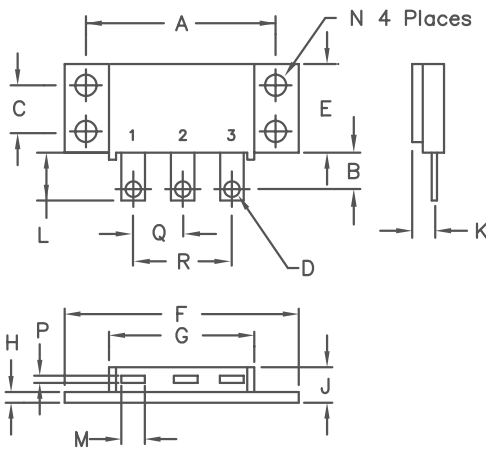
Dim.	Inches		Millimeters		
	Min.	Max.	Min.	Max.	Notes
A	1.995	2.005	50.67	50.93	
B	0.300	0.325	7.62	8.26	
C	0.495	0.505	12.57	12.83	
D	0.182	0.192	4.62	4.88	Dia.
E	0.990	1.010	25.15	25.65	
F	2.390	2.410	60.71	61.21	
G	1.500	1.525	38.10	38.70	
H	0.120	0.130	3.05	3.30	
J	---	0.400	---	10.16	
K	0.240	0.260	6.10	6.60	to Lead C_L
L	0.490	0.510	12.45	12.95	
M	0.330	0.350	8.38	6.90	
N	0.175	0.195	4.45	4.95	Dia.
P	0.035	0.045	0.89	1.14	
Q	0.445	0.455	11.30	11.56	
R	0.890	0.910	22.61	23.11	

Common Cathode

TO-249

Notes:
Baseplate: Nickel plated copper;
Pins: Nickel plated copper

Microsemi Catalog Number	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
SSUM300120	1200V	1200V

- Super Soft Recovery
- 175°C Junction Temperature
- V_{RRM} 1200 Volts
- 3 X 100 Amp current rating

Electrical Characteristics

Average forward current per pkg	$I_{F(AV)}$	300A	Square Wave
Average forward current per leg	$I_{F(AV)}$	100A	Square Wave
Case Temperature	T_C	103°C	$R_{\theta JC}$ = .50°C/W
Maximum surge current per leg	I_{FSM}	700A	8.3ms, half sine, T_J = 175°C
Max peak forward voltage per leg	V_{FM}	2.0V	I_{FM} = 100A: T_J = 25°C*
Max reverse recovery time per leg	t_{rr}	150ns	1A, 30V, T_J = 25°C di/dt = 50A/uS
Max peak reverse current per leg	I_{RM}	3mA	V_{RRM}, T_J = 125°C*
Max peak reverse current per leg	I_{RM}	25µA	V_{RRM}, T_J = 25°C
Typical Junction capacitance	C_J	300pF	V_R = 10V, T_J = 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 175°C
Max thermal resistance per leg	$R_{\theta JC}$	.50°C/W Junction to case
Max thermal resistance per pkg	$R_{\theta JC}$	.20°C/W Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.1°C/W Case to sink
Mounting Torque		15−20 inch pounds
Weight		2.5 ounces (71 grams) typical

1−26−05   Rev. 0

SSUM300120

Figure 1
Typical Forward Characteristics – Per Leg

Instantaneous Forward Current – Amperes vs Instantaneous Forward Voltage – Volts

175°C   25°C
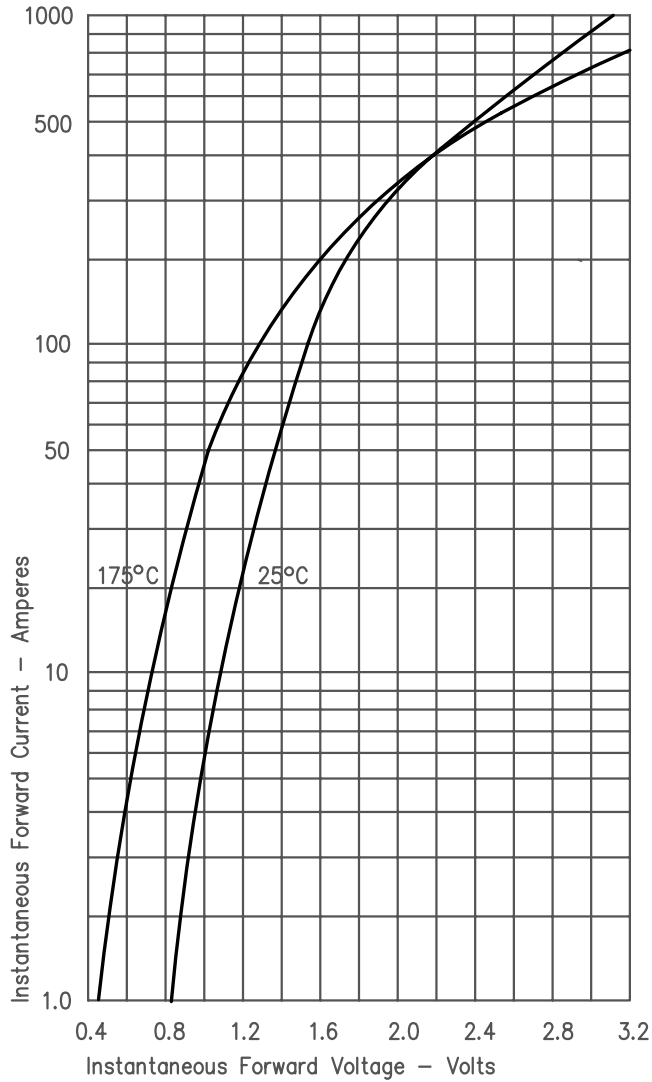
Figure 3
Typical Junction Capacitance – Per Leg

Junction Capacitance – pF vs Reverse Voltage – Volts
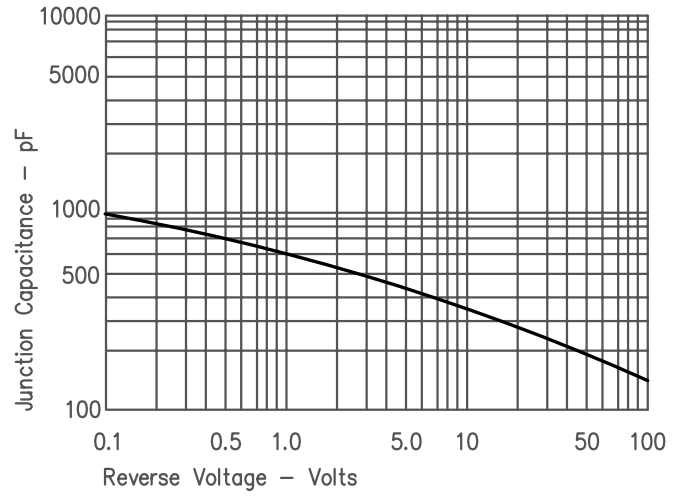
Figure 4
Forward Current Derating – Per Leg

Maximum Allowable Case Temperature – °C vs Average Forward Current – Amperes

90°   120°   180°   DC
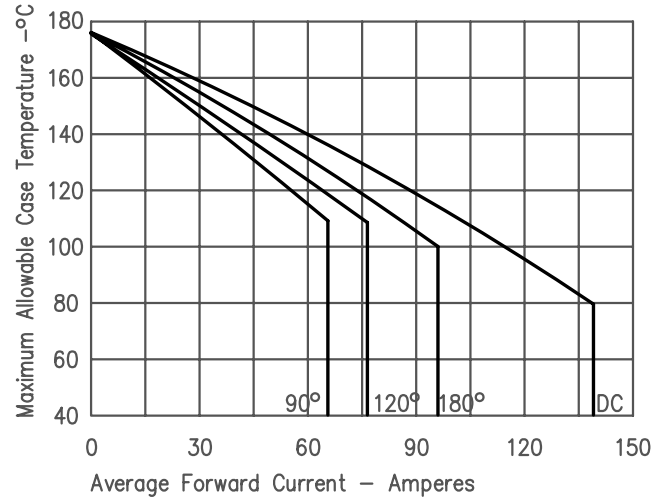
Figure 2
Typical Reverse Characteristics – Per Leg

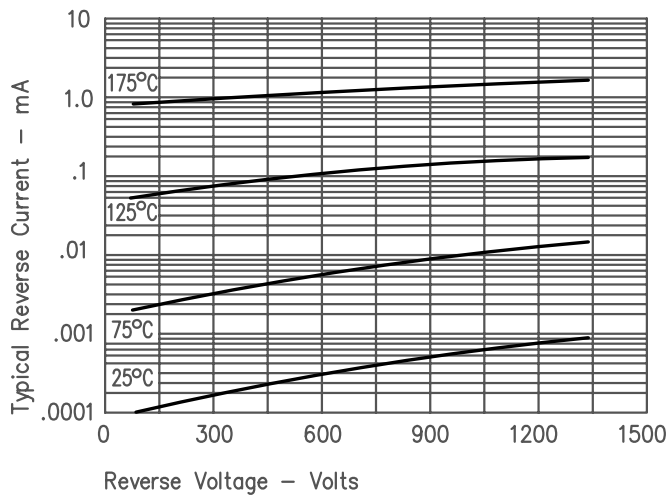Typical Reverse Current – mA vs Reverse Voltage – Volts

175°C
125°C
75°C
25°C

Figure 5
Maximum Forward Power Dissipation – Per Leg

Maximum Power Dissipation – Watts vs Average Forward Current – Amperes

90° 120°   180°   DC