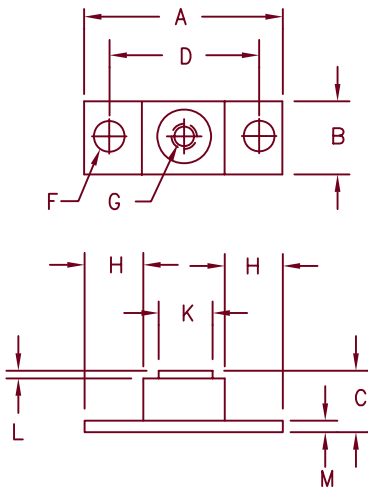


# Silicon Power Rectifier

## SDM300



Standard Polarity:  
Base plate is cathode  
Reverse Polarity:  
Base plate is anode

Dim.	Inches		Millimeters		Notes
	Min.	Max.	Min.	Max.	
A	---	2.650	---	67.31	
B	1.240	1.260	31.49	32.00	
C	---	.925	---	23.49	
D		2.00 BSC		50.80 BSC	
F	0.320	0.340	8.13	8.64	Dia.
G			5/16-18 UNC		
H	0.630	---	16.00	---	
K	0.610	0.640	15.49	16.26	
L	---	.100	---	2.54	
M	0.182	0.192	4.62	4.88	

Microsemi Catalog Number	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
SDM30002*	200V	200V
SDM30004*	400V	400V
SDM30006*	600V	600V
SDM30008*	800V	800V
SDM30010*	1000V	1000V
SDM30012*	1200V	1200V
SDM30014*	1400V	1400V
SDM30016*	1600V	1600V

\*Change S to R for Reverse Polarity

- Compact Package
- Glass Passivated Die
- 300 Amp Current Rating
- Non-Isolated Baseplate
- Low Profile
- VRRM 200-1600 Volts

### Electrical Characteristics

Average forward current	$I_{F(AV)}$ 300 Amps	$T_C = 130^\circ\text{C}$ , half sine, $R_{\theta JC} = 0.15^\circ\text{C/W}$
Maximum surge current	$I_{FSM}$ 5500 Amps	8.3 ms, half sine, $T_J = 175^\circ\text{C}$
Max $I^2t$ for fusing	$I^2t$ 125990 A <sup>2</sup> s	
Max peak forward voltage	$V_{FM}$ 1.1 Volts	$I_{FM} = 300\text{A}; T_J = 25^\circ\text{C}^*$
Max peak reverse current	$I_{RM}$ 10 mA	$V_{RRM}, T_J = 150^\circ\text{C}^*$
Max peak reverse current	$I_{RM}$ 75 $\mu\text{A}$	$V_{RRM}, T_J = 25^\circ\text{C}$

\*Pulse test: Pulse width 8.33  $\mu\text{sec}$ , Duty cycle <1%

### 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	$R_{\theta JC}$	$0.15^\circ\text{C/W}$ Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	$0.04^\circ\text{C/W}$ Case to sink
Terminal Torque		60-75 inch pounds
Mounting Base Torque		30-40 inch pounds
Typical Weight		4.93 ounces (140 grams) typical



SCOTTSDALE

8700 East Thomas Road, P.O. Box 1390  
Scottsdale, AZ 85252  
PH: (480) 941-6300  
FAX: (480) 947-1503  
www.microsemi.com

05-02-07 Rev. 2

# SDM300

Figure 1  
Typical Forward Characteristics

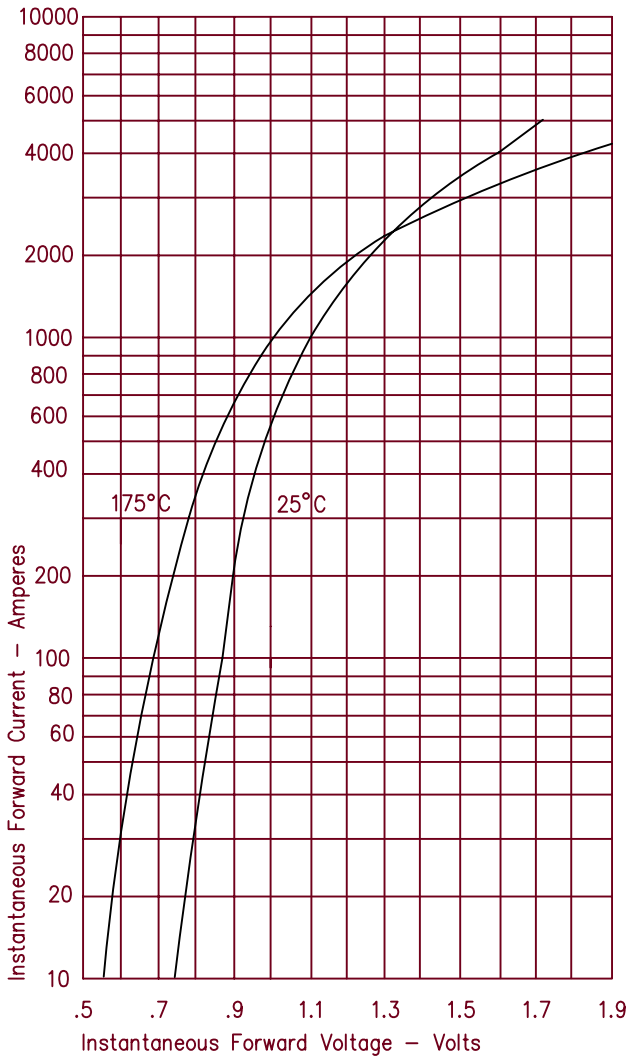


Figure 3  
Forward Current Derating

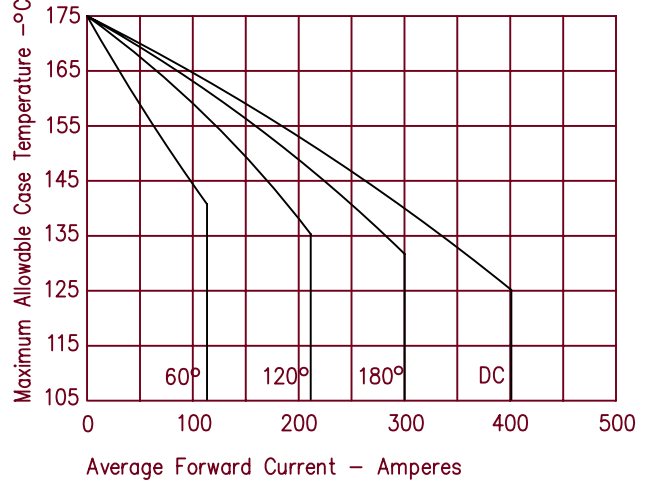


Figure 4  
Maximum Forward Power Dissipation

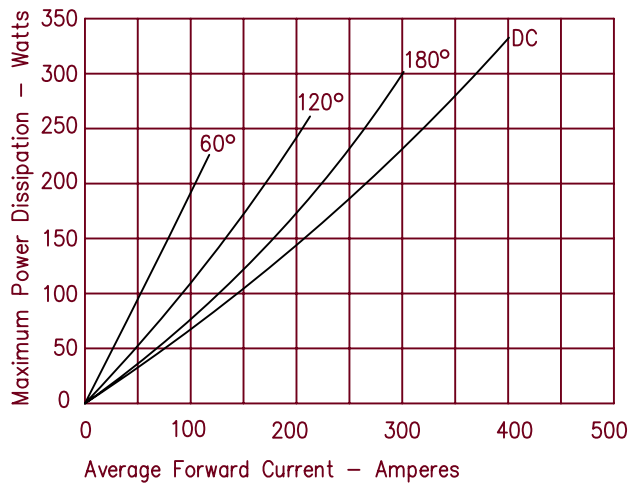


Figure 2  
Typical Reverse Characteristics

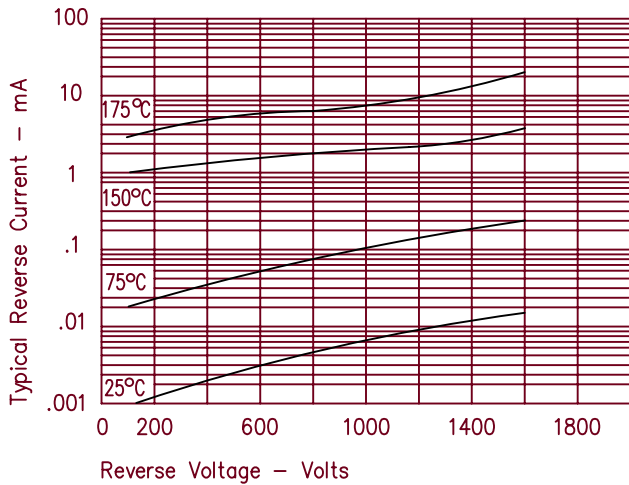


Figure 5  
Transient Thermal Impedance

