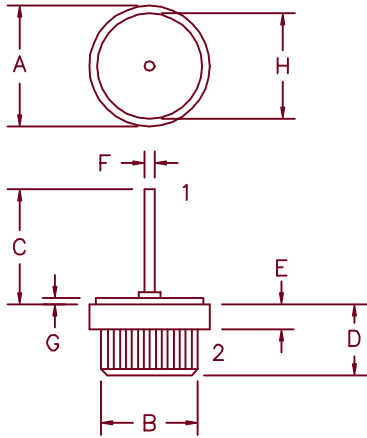


# Silicon Power Rectifier S/R50PF Series



Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	.590	.630	15.0	16.0	Dia.
B	.499	.510	12.6	13.0	Dia.
C	.600	—	15.2	—	
D	.350	.370	8.90	9.40	
E	.090	.130	2.28	3.30	
F	.097	.103	2.46	2.62	Dia.
G	.030	.035	.762	.900	
H	.500	.510	12.7	13.0	Dia.

D0-21

Microsemi Catalog Number	Reverse	Repetitive Peak Reverse Voltage
Standard	Reverse	
S5020PF	R5020PF	200
S5040PF	R5040PF	400
S5060PF	R5060PF	600
S5080PF	R5080PF	800

- High Voltage, Low Leakage Current
- Glass Passivated Die
- Economical Design
- 700 Amps Surge Rating
- VRRM to 800V

## Electrical Characteristics

Average Forward Current	$I_{F(AV)}$ 50 Amps	$T_C = 135^\circ\text{C}$ , half sine wave, $R_{\theta JC} = 0.8^\circ\text{C/W}$ 8.3ms, half sine, $T_J = 175^\circ\text{C}$
Maximum Surge Current	$I_{FSM}$ 700 Amps	
Maximum $I^2t$ For Fusing	$I^2t$ 2600 $\text{A}^2\text{s}$	
Max. Peak Forward Voltage	$V_{FM}$ 1.05 Volts	$I_{FM} = 50\text{A}; T_J = 25^\circ\text{C}^*$
Max. Peak Reverse Current	$I_{RM}$ 10 $\mu\text{A}$	$V_{RRM, T_J} = 25^\circ\text{C}$
Max. Peak Reverse Current	$I_{RM}$ 2.0 mA	$V_{RRM, T_J} = 150^\circ\text{C}$
Max. Recommended Operating Frequency	10kHz	

\*Pulse test: Pulse width 300 $\mu\text{s}$ , Duty cycle 2%

## Thermal and Mechanical Characteristics

Storage temp range	$T_{STG}$	$-65^\circ\text{C}$ to $200^\circ\text{C}$
Operating junction temp range	$T_J$	$-65^\circ\text{C}$ to $175^\circ\text{C}$
Max thermal resistance	$R_{\theta JC}$	$0.8^\circ\text{C/W}$ Junction to case
Typical thermal resistance	$R_{\theta CS}$	$0.2^\circ\text{C/W}$ Case to sink
Weight		.27 ounce (7.2 grams) typical

# S/R50PF

Figure 1  
Typical Forward Characteristics

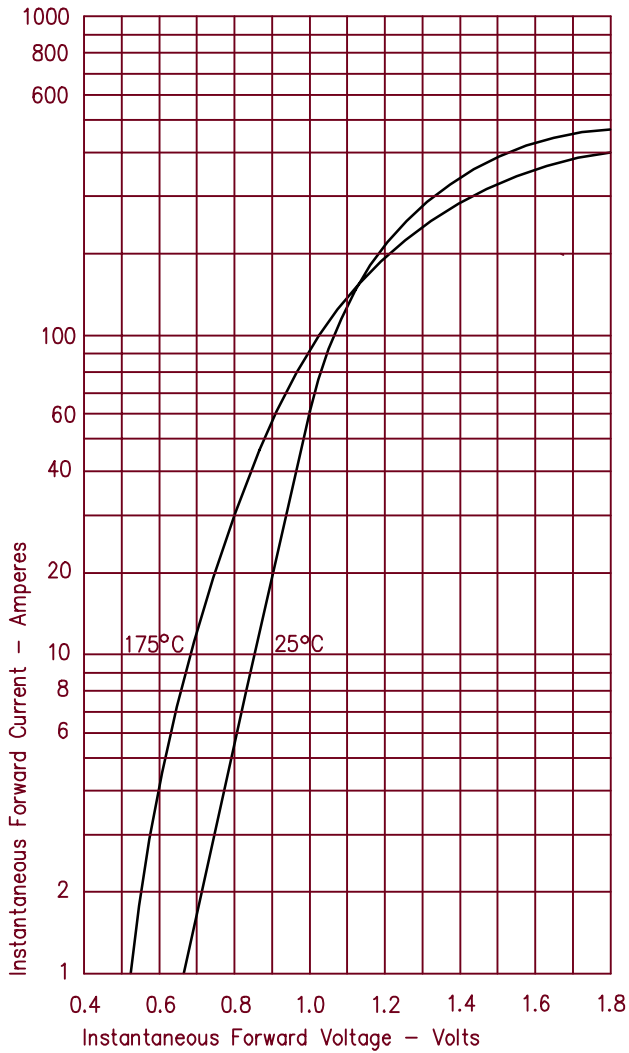


Figure 3  
Forward Current Derating

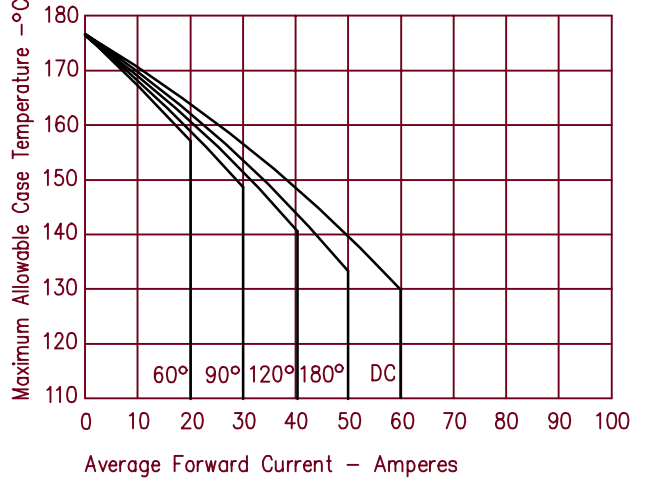


Figure 4  
Maximum Forward Power Dissipation

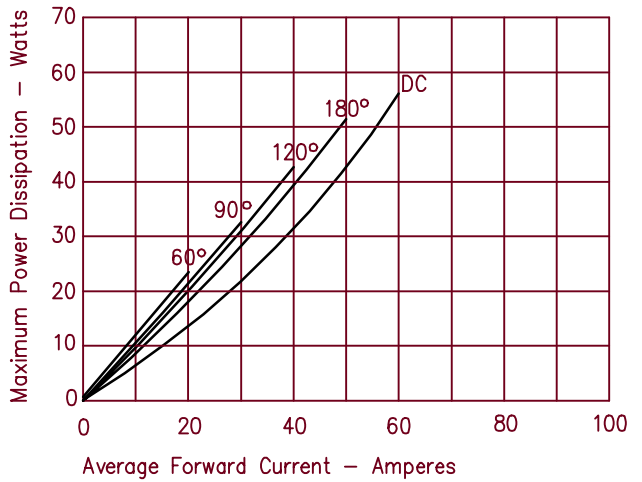


Figure 2  
Typical Reverse Characteristics

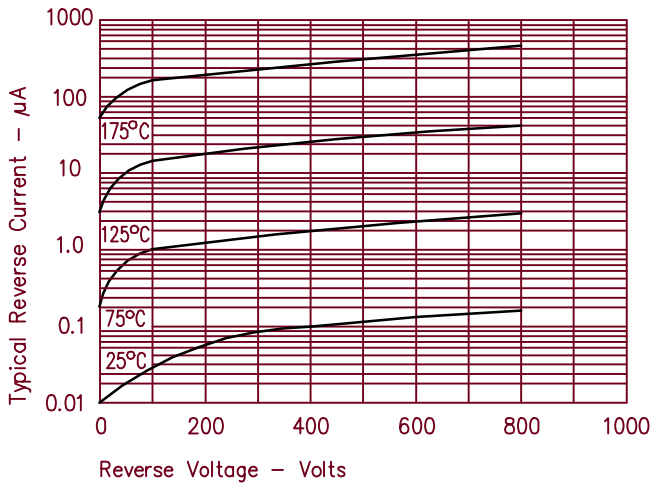
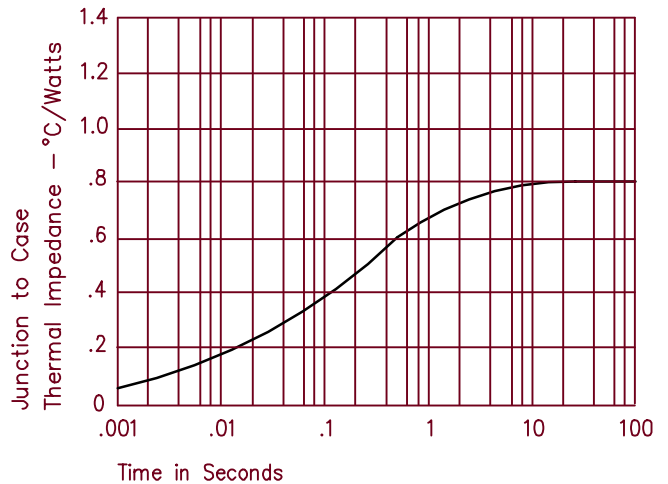
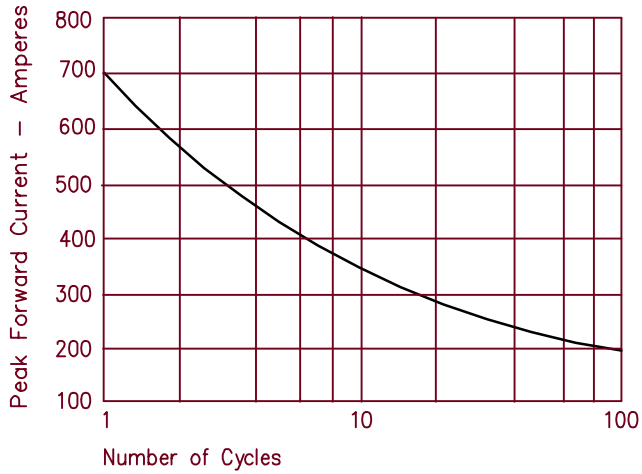


Figure 5  
Transient Thermal Impedance



# S/R50PF

Figure 6  
Maximum Nonrepetitive Surge Current



## HEAT SINK MOUNTING

The hole edge must be chamfered as shown to avoid shearing off the knurl during press-in. Apply press-in force evenly to avoid tilting. Thermal compound is recommend. Recommended heat sink materials are aluminum with a hardness below 65 on Brinell scale or copper with a hardness below 50 on the Rockwell F scale.

