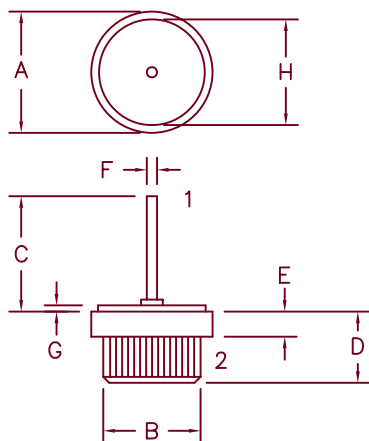


Silicon Power Rectifier S/R50PF Series



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.

DO-21

Microsemi Catalog Number

Standard	Reverse
S5020PF	R5020PF
S5040PF	R5040PF
S5060PF	R5060PF
S5080PF	R5080PF

Repetitive Peak Reverse Voltage

200
400
600
800

- High Voltage, Low Leakage Current
- Glass Passivated Die
- Economical Design
- 700 Amps Surge Rating
- V_{RRM} to 800V

Electrical Characteristics

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

*Pulse test: Pulse width 300 μs , Duty cycle 2%

Thermal and Mechanical Characteristics

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



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05-02-07 Rev. 3

S/R50PF

Figure 1
Typical Forward Characteristics

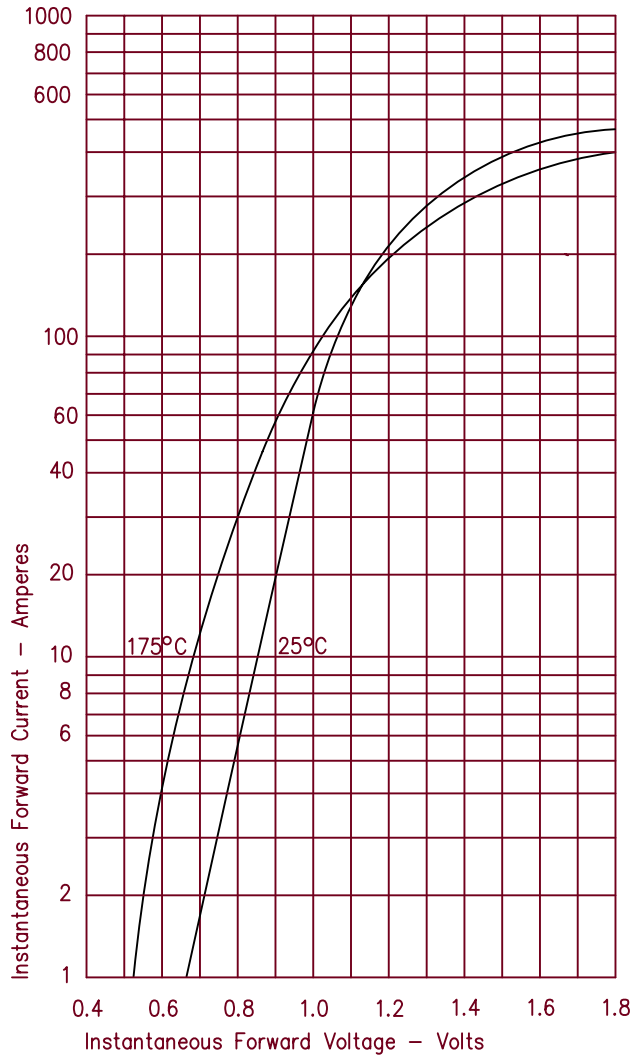


Figure 2
Typical Reverse Characteristics

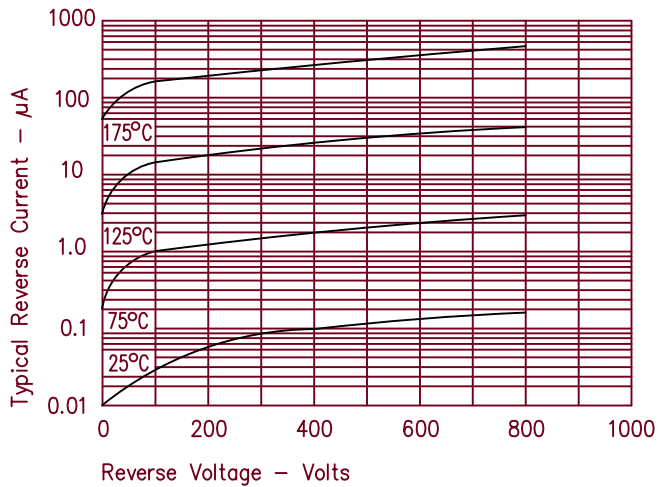


Figure 3
Forward Current Derating

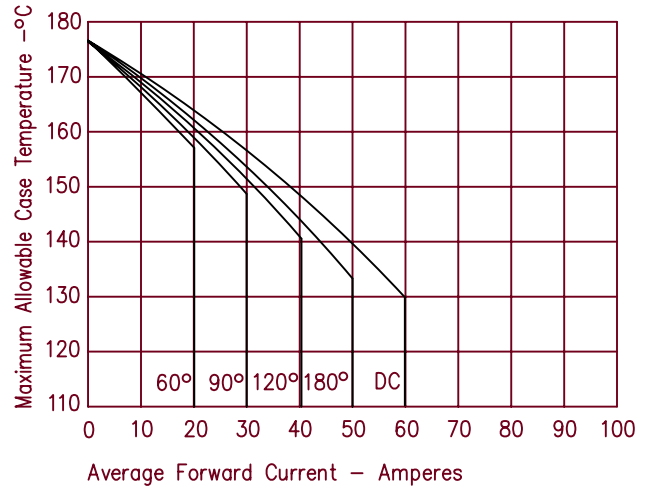


Figure 4
Maximum Forward Power Dissipation

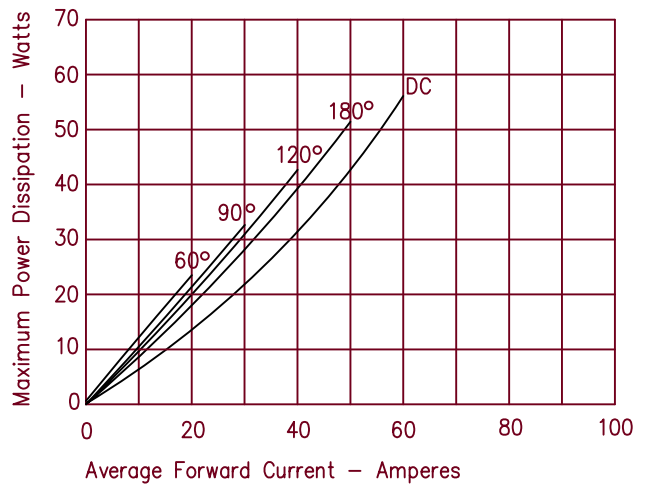
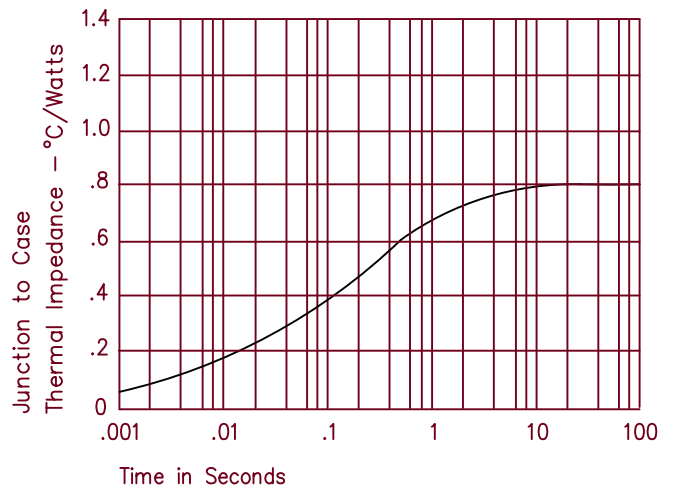
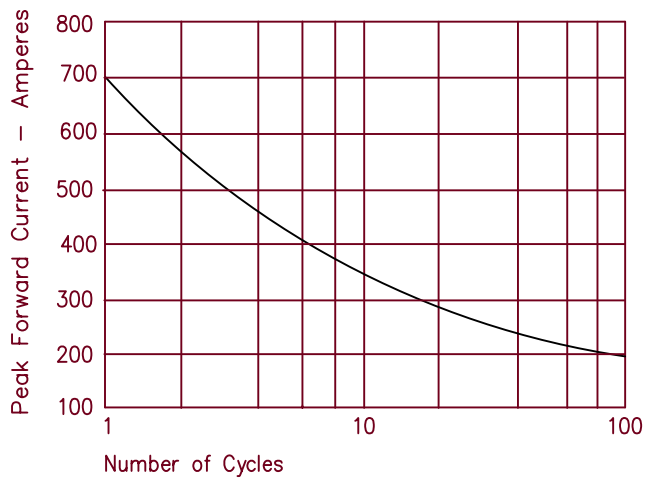


Figure 5
Transient Thermal Impedance



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.

