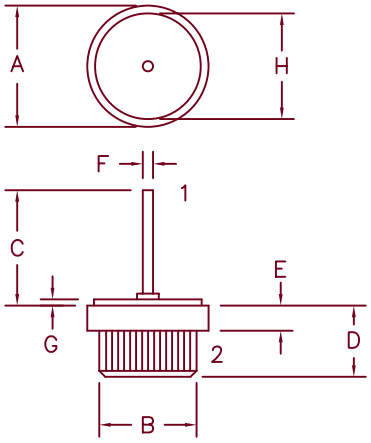
Silicon Power Rectifier
S/R50PF Series



Standard Polarity

Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
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		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
- V_{RRM} to 800V

Electrical Characteristics

Average Forward Current	$I_{F(AV)}$	50 Amps	T_C = 135°C, half sine wave, $R_{\theta JC}$ = 0.8°C/W
Maximum Surge Current	I_{FSM}	700 Amps	8.3ms, half sine, T_J = 175°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°C*
Max. Peak Reverse Current	I_{RM}	10 µA	V_{RRM}, T_J = 25°C
Max. Peak Reverse Current	I_{RM}	2.0 mA	V_{RRM}, T_J = 150°C
Max. Recommended Operating Frequency		10kHz	

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

Thermal and Mechanical Characteristics

Storage temp range	T_{STG}	−65°C to 200°C	
Operating junction temp range	T_J	−65°C to 175°C	
Max thermal resistance	$R_{\theta JC}$	0.8°C/W	Junction to case
Typical thermal resistance	$R_{\theta CS}$	0.2°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

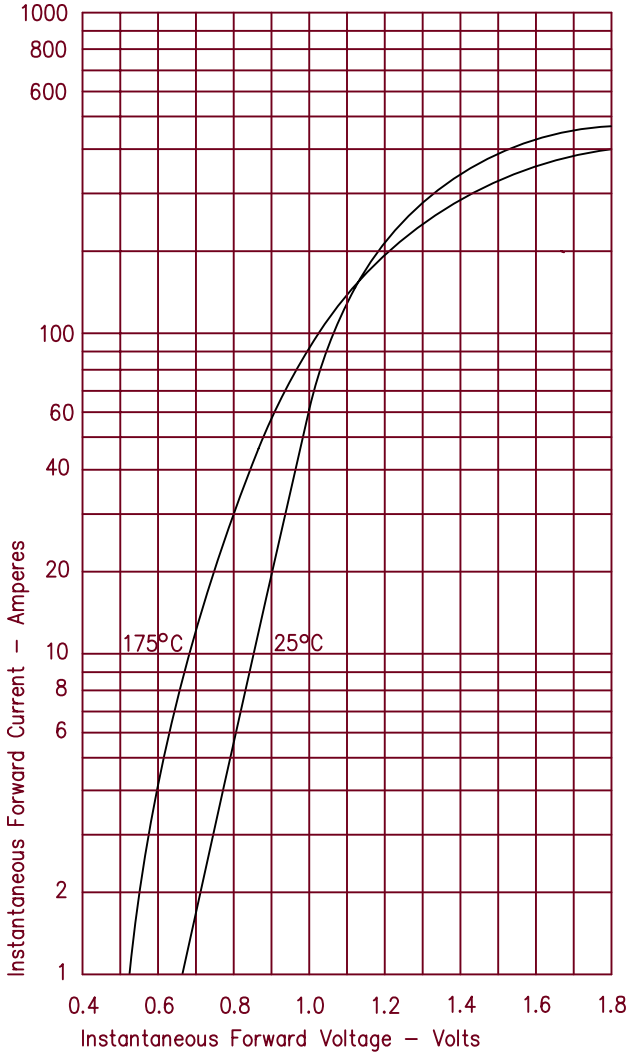


Figure 2
Typical Reverse Characteristics

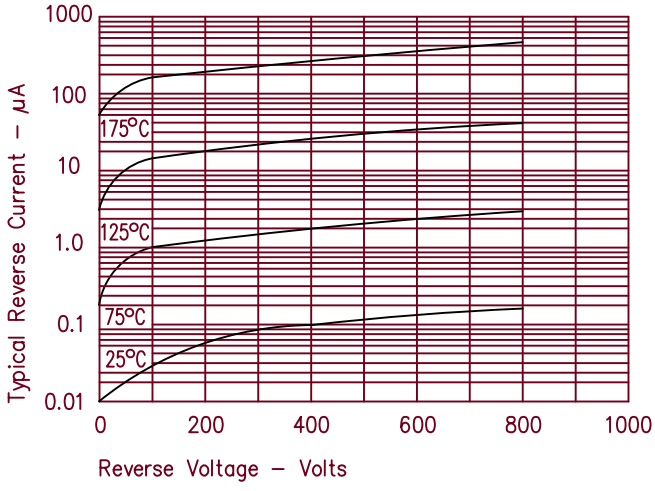


Figure 3
Forward Current Derating

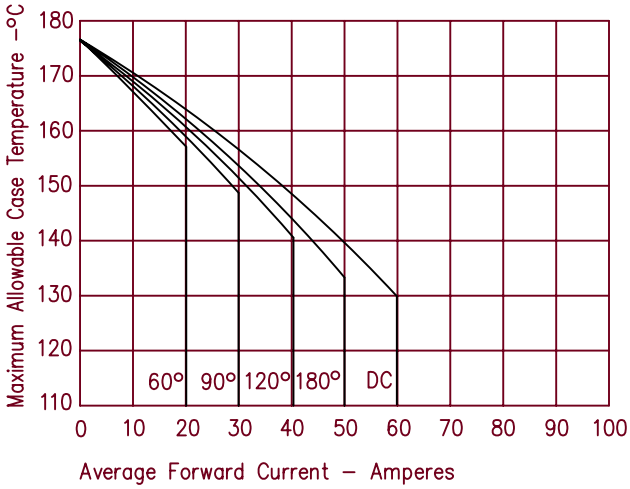


Figure 4
Maximum Forward Power Dissipation

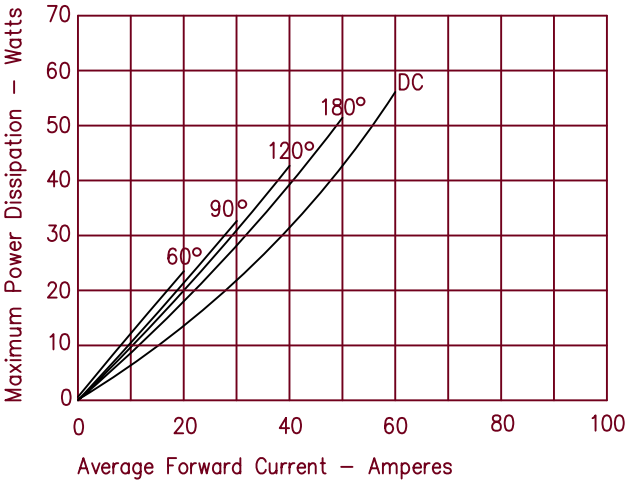
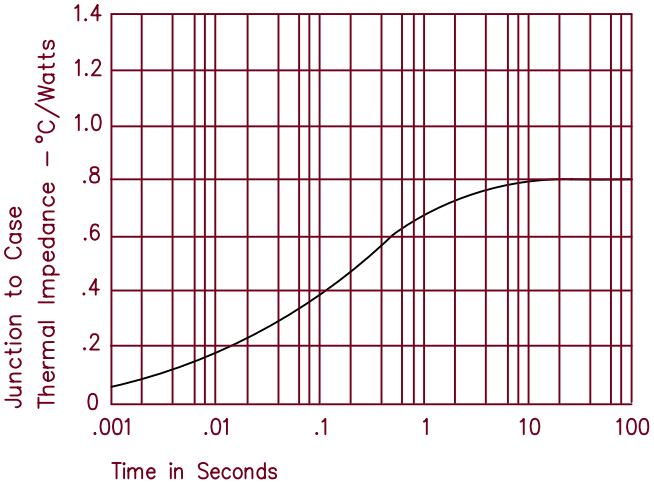
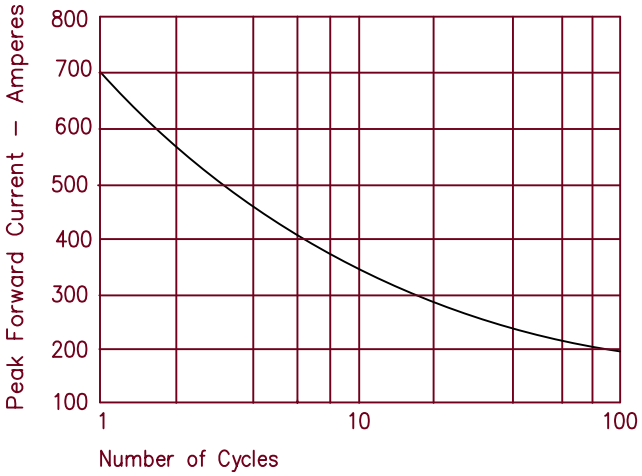


Figure 5
Transient Thermal Impedance



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.