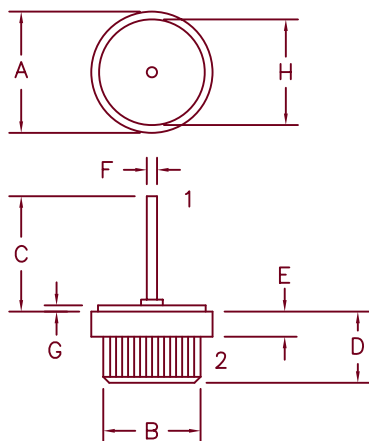


Silicon Power Rectifier S/R50PF Series



| 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 |



6 Lake Street
Lawrence, MA 01841
PH: (978) 620-2600
FAX: (978) 689-0803
www.microsemi.com

05-02-07 Rev. 3

S/R50PF

Figure 1
Typical Forward Characteristics

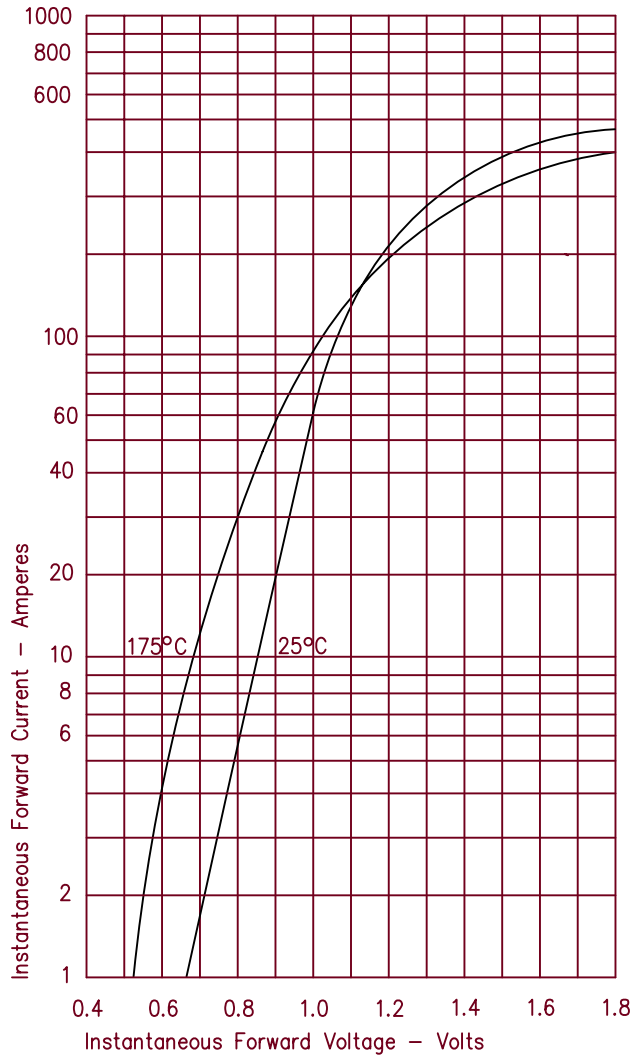


Figure 2
Typical Reverse Characteristics

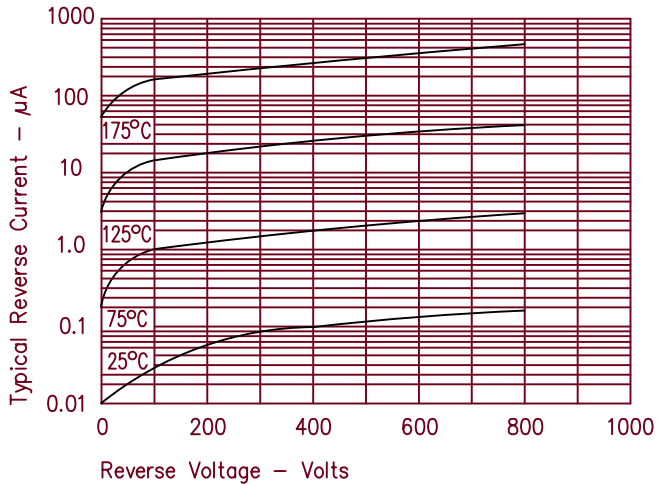


Figure 3
Forward Current Derating

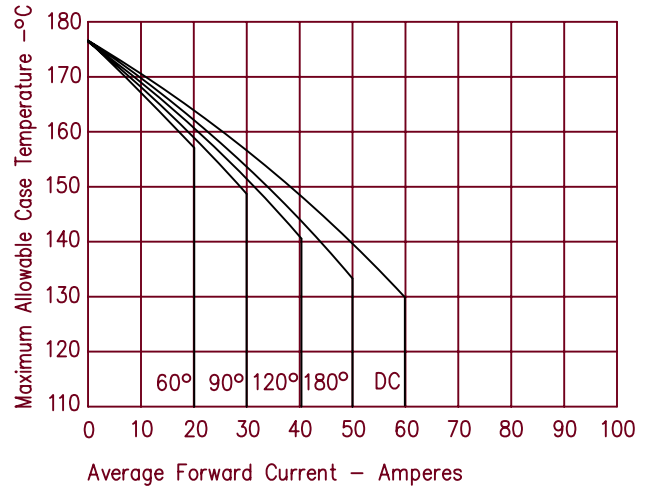


Figure 4
Maximum Forward Power Dissipation

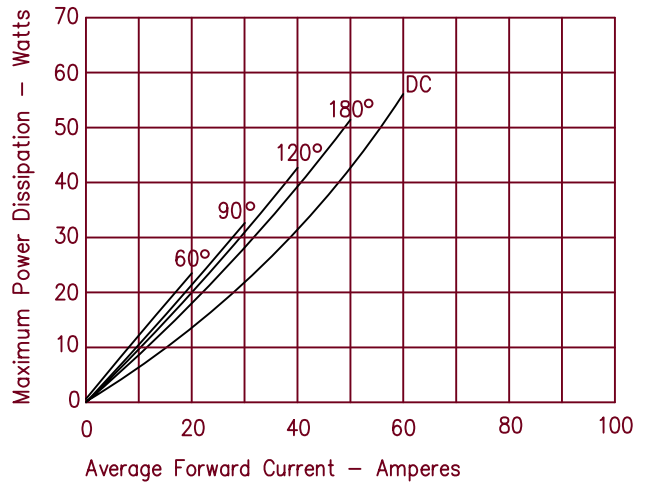
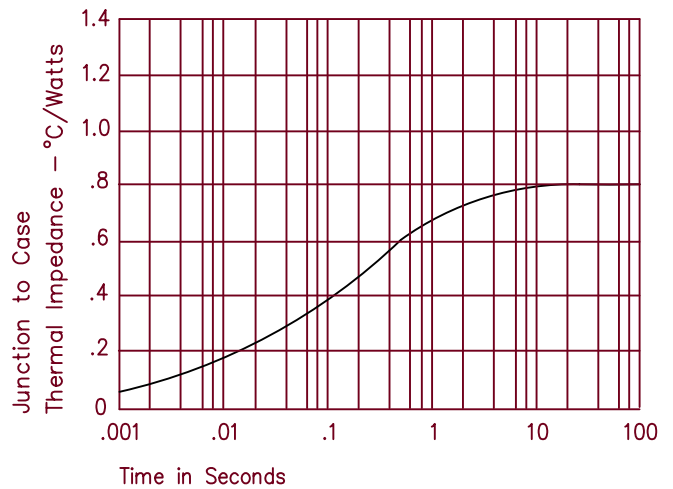
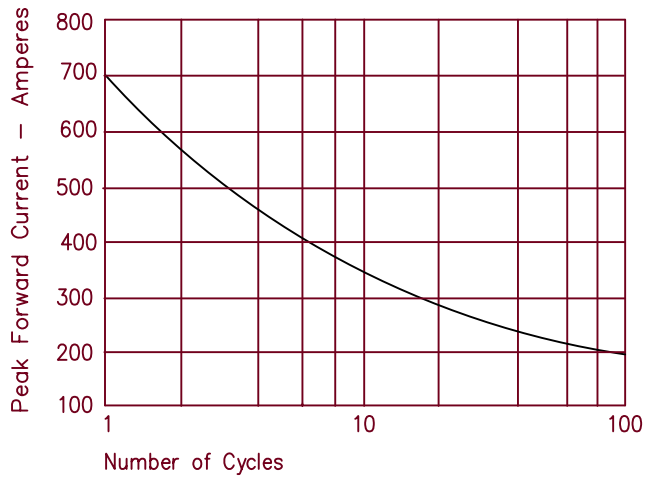


Figure 5
Transient Thermal Impedance



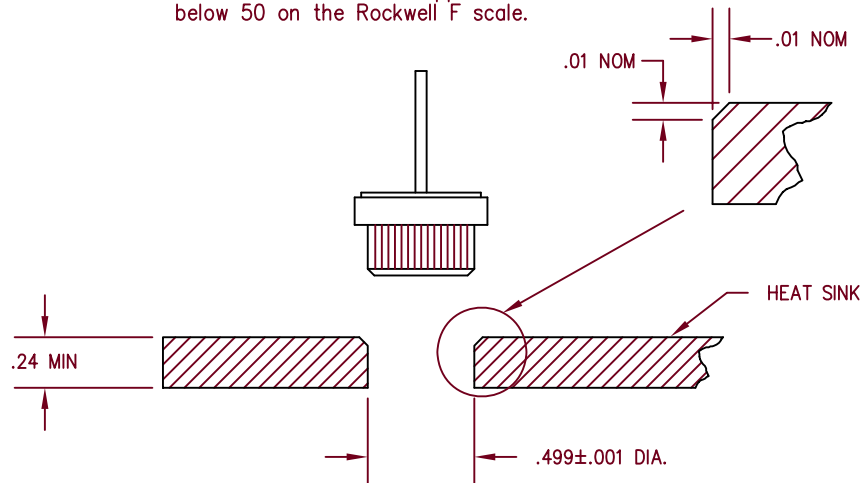
S/R50PF

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.



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Microchip:](#)

[R5040PF](#) [R5080PF](#)