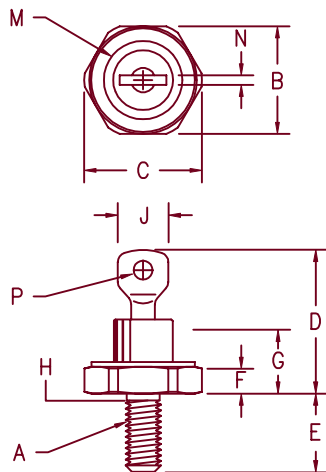


# Silicon Power Rectifier S/R20 Series



**Notes:**

- 10-32 UNF3A
- Full threads within 2 1/2 threads
- Standard Polarity: Stud is Cathode  
Reverse Polarity: Stud is Anode

| Dim. | Inches  |         | Millimeter |         | Notes |
|------|---------|---------|------------|---------|-------|
|      | Minimum | Maximum | Minimum    | Maximum |       |
| A    | ---     | ---     | ---        | ---     | 1     |
| B    | .424    | .437    | 10.77      | 11.10   |       |
| C    | ---     | .505    | ---        | 12.82   |       |
| D    | .600    | .800    | 15.24      | 20.32   |       |
| E    | .422    | .453    | 10.72      | 11.50   |       |
| F    | .075    | .175    | 1.91       | 4.44    |       |
| G    | ---     | .405    | ---        | 10.29   |       |
| H    | .163    | .189    | 4.15       | 4.80    | 2     |
| J    | ---     | .310    | ---        | 7.87    |       |
| M    | ---     | .350    | ---        | 8.89    | Dia   |
| N    | .020    | .065    | .510       | 1.65    |       |
| P    | .070    | .100    | 1.78       | 2.54    | Dia   |

## D0203AA (D04)

| Microsemi Catalog Number | JEDEC Numbers        | Peak Reverse Voltage                 |
|--------------------------|----------------------|--------------------------------------|
| 1N1064                   | 1N1341, A,B,C        | 1N1581 1N1612,A 1N2228,A 1N2491 50V  |
| 1N1065                   | 1N1342, A,B,C        | 1N1582 1N1613,A 1N2492 100V          |
| 1N1066                   | 1N1343, A,B,C        | 150V                                 |
| *S2020                   | 1N1067 1N1344, A,B,C | 1N1583 1N1614,A 1N2230,A 1N2493 200V |
| 1N1068                   | 1N1345, A,B,C        | 1N1584 1N2232,A 1N2494 300V          |
| *S2040                   | 1N1069 1N1346, A,B,C | 1N1585 1N1615,A 1N2234,A 1N2495 400V |
| *S2060                   | 1N1347, A,B,C        | 1N1586 1N2236,A 1N2496 500V          |
| *S2080                   | 1N1348, A,B,C        | 1N1587 1N1616,A 1N2238,A 1N2497 600V |
| *S20100                  |                      | 1N2240,A 800V                        |
| *S20120                  |                      | 1N2242,A 1000V                       |
|                          |                      | 1N2244,A 1200V                       |

\*Change S to R in part number for Reverse Polarity  
For 1N types add an R suffix for Reverse Polarity

- Glass Passivated Die
- Low Forward Voltage
- 200A Surge Rating
- Glass to metal seal construction
- $V_{RRM}$  to 1200V

### Electrical Characteristics

|                                     |                     |  |
|-------------------------------------|---------------------|--|
| Average forward current             | $I_F(AV)$ 16 Amps   | $T_C = 153^\circ C$ , half sine wave, $R_{\theta JC} = 2.5^\circ C/W$<br>8.3ms, half sine, $T_J = 200^\circ C$ |
| Maximum surge current               | $I_{FSM}$ 200 Amps  |  |
| Max $I^2 t$ for fusing              | $I^2 t$ 165 $A^2 s$ | $I_{FM} = 30A: T_J = 25^\circ C$ *<br>$V_{RRM}, T_J = 25^\circ C$<br>$V_{RRM}, T_J = 150^\circ C$              |
| Max peak forward voltage            | $V_{FM}$ 1.3 Volts  |  |
| Max peak reverse current            | $I_{RM}$ 10 $\mu A$ |  |
| Max peak reverse current            | $I_{RM}$ 1.0 mA     |  |
| Max Recommended Operating Frequency | 10kHz               |  |

\*Pulse test: Pulse width 300  $\mu sec$ . Duty cycle 2%

### Thermal and Mechanical Characteristics

|                               |                 |                                |
|-------------------------------|-----------------|--------------------------------|
| Storage temperature range     | $T_{STG}$       | -65°C to 200°C                 |
| Operating junction temp range | $T_J$           | -65°C to 200°C                 |
| Maximum thermal resistance    | $R_{\theta JC}$ | 2.5°C/W Junction to Case       |
| Mounting torque               |                 | 25-30 inch pounds              |
| Weight                        |                 | .16 ounces (5.0 grams) typical |

7-24-03 Rev. 3

# S/R20

Figure 1  
Typical Forward Characteristics

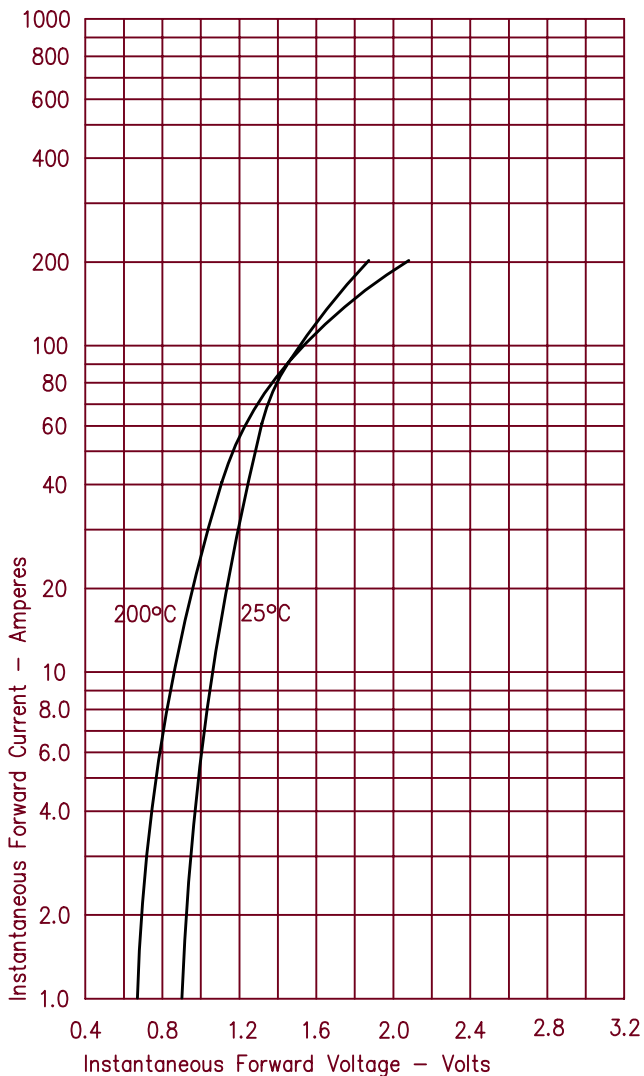


Figure 3  
Forward Current Derating

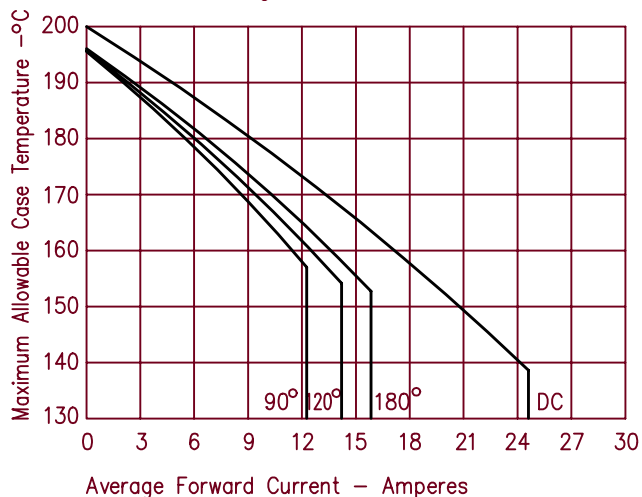


Figure 4  
Maximum Forward Power Dissipation

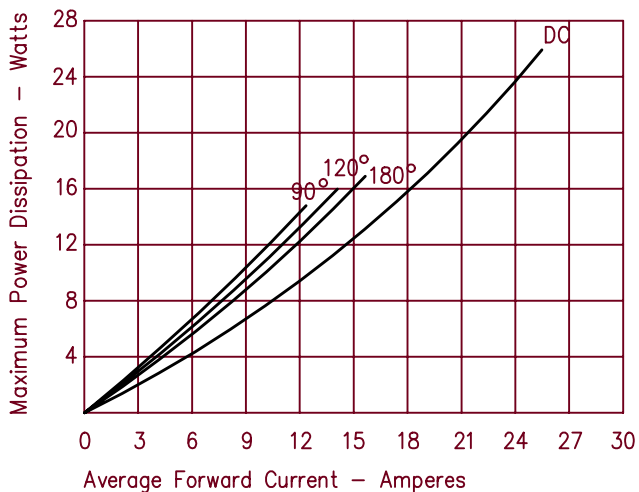


Figure 2  
Typical Reverse Characteristics

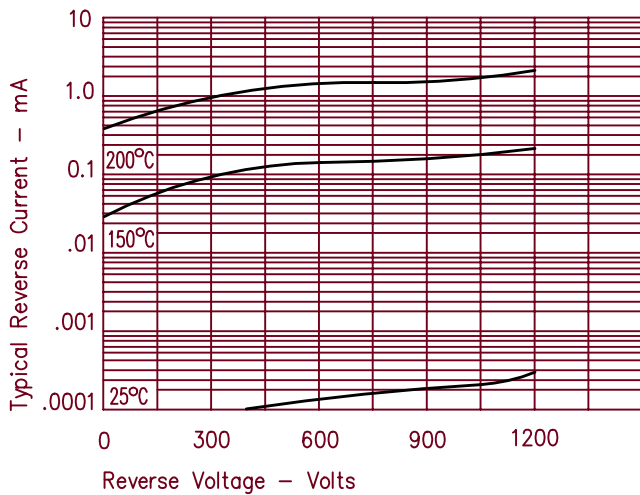


Figure 5  
Transient Thermal Impedance

