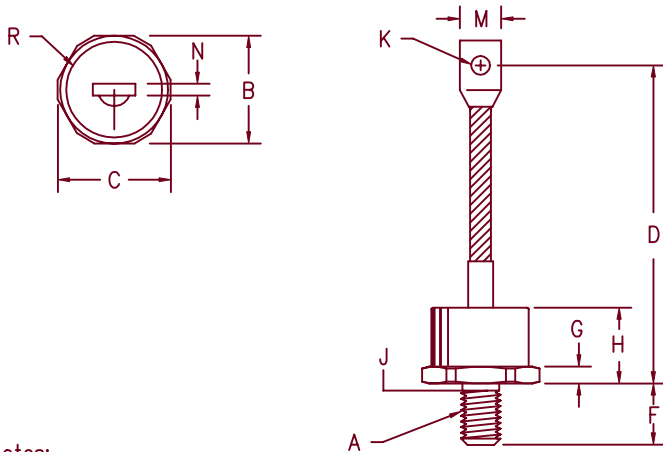


# Silicon Power Rectifier

## 1N3161 — 1N3177



**Notes:**

1. Full threads within 2 1/2 threads.
2. Standard Polarity: Stud is Cathode  
Reverse Polarity: Stud is Anode

| Dim. | Inches     |         | Millimeter |         | Notes |
|------|------------|---------|------------|---------|-------|
|      | Minimum    | Maximum | Minimum    | Maximum |       |
| A    | 3/4-16 UNF |         | ---        | ---     | 1     |
| B    | 1.218      | 1.250   | 30.93      | 31.75   |       |
| C    | 1.350      | 1.375   | 34.29      | 34.93   |       |
| D    | 5.30       | 5.90    | 134.62     | 149.86  |       |
| F    | .793       | .828    | 20.14      | 21.03   |       |
| G    | .300       | .325    | 7.62       | 8.25    |       |
| H    | ---        | .900    | ---        | 22.86   |       |
| J    | .660       | .745    | 16.76      | 19.02   | 2     |
| K    | .338       | .348    | 8.58       | 8.84    | Dia.  |
| M    | .665       | .755    | 16.89      | 19.17   |       |
| N    | .125       | .172    | 3.18       | 4.37    |       |
| R    | ---        | 1.10    | ---        | 27.94   | Dia.  |

### D0205AB (D09)

| Microsemi Catalog Number | Peak Reverse Voltage |
|--------------------------|----------------------|
| 1N3161                   | 50V                  |
| 1N3162                   | 100V                 |
| 1N3163                   | 150V                 |
| 1N3164                   | 200V                 |
| 1N3165                   | 250V                 |
| 1N3166                   | 300V                 |
| 1N3167                   | 350V                 |
| 1N3168                   | 400V                 |
| 1N3169                   | 500V                 |
| 1N3170                   | 600V                 |
| 1N3171,A                 | 700V                 |
| 1N3172,A                 | 800V                 |
| 1N3173,A                 | 900V                 |
| 1N3174,A                 | 1000V                |
| 1N3175                   | 1200V                |
| 1N3176                   | 1400V                |
| 1N3177                   | 1600V                |

Add R suffix for reverse polarity

- Glass to metal seal construction
- High surge current capability
- Glass Passivated Die
- Rugged construction
- $V_{RRM}$  50-1600 Volts

### Electrical Characteristics

|                                     |                              |                                                                                                                                                                                                                                                                                          |
|-------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max average forward current         | $I_{F(AV)}$ 240 Amps         | $T_C = 149^\circ\text{C}$ , Half sine wave, $R_{\theta JC} = 0.20^\circ\text{C/W}$<br>8.3ms, half sine, $T_J = 200^\circ\text{C}$<br>less than 8.33ms<br>$I_F = 240\text{A}$ : $T_C = 25^\circ\text{C}$<br>$V_{RRM}$ , $T_C = 150^\circ\text{C}$<br>$V_{RRM}$ , $T_C = 25^\circ\text{C}$ |
| Max surge current                   | $I_{FSM}$ 3000 Amps          |                                                                                                                                                                                                                                                                                          |
| Max. $I^2t$ capability for fusing   | $I^2t$ 37,480 <sup>2</sup> S |                                                                                                                                                                                                                                                                                          |
| Max peak forward voltage            | $V_{FM}$ 1.25 Volts          |                                                                                                                                                                                                                                                                                          |
| Max peak reverse current            | $I_{RRM}$ 10mA               |                                                                                                                                                                                                                                                                                          |
| Max peak reverse current            | $I_{RRM}$ 75 $\mu\text{A}$   |                                                                                                                                                                                                                                                                                          |
| Max recommended operating frequency | 7.5 kHz                      |                                                                                                                                                                                                                                                                                          |

### Thermal and Mechanical Characteristics

|                                      |                 |                                |
|--------------------------------------|-----------------|--------------------------------|
| Operating junction temp range        | $T_J$           | -65°C to 200°C                 |
| Storage temperature range            | $T_{STG}$       | -65°C to 200°C                 |
| Maximum thermal resistance           | $R_{\theta JC}$ | 0.20°C/W Junction to case      |
| Typical thermal resistance (greased) | $R_{\theta CS}$ | .08°C/W Case to sink           |
| Max mounting torque                  |                 | 300-325 inch pounds            |
| Weight                               |                 | 8.5 ounces (240 grams) typical |

8-27-03 Rev. 1

# 1N3161 — 1N3177

Figure 1  
Typical Forward Characteristics

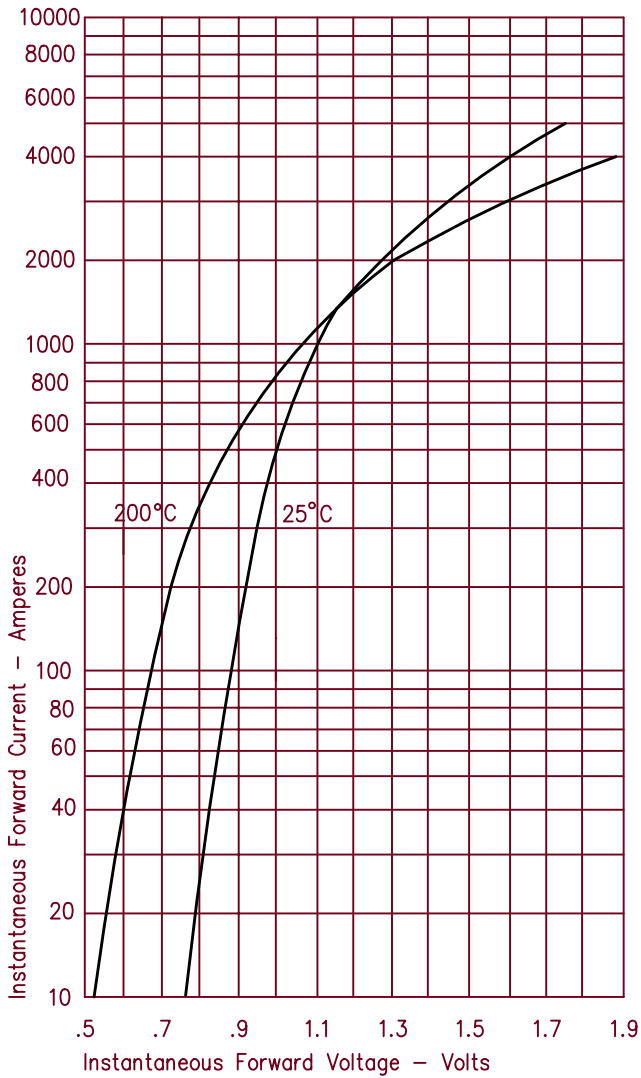


Figure 3  
Forward Current Derating

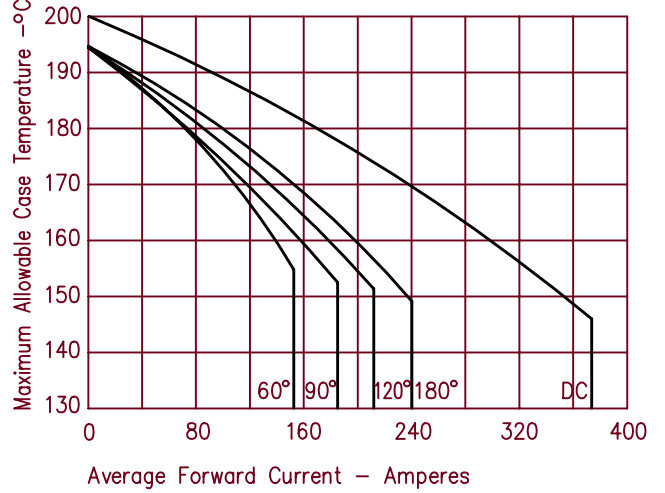


Figure 4  
Maximum Forward Power Dissipation

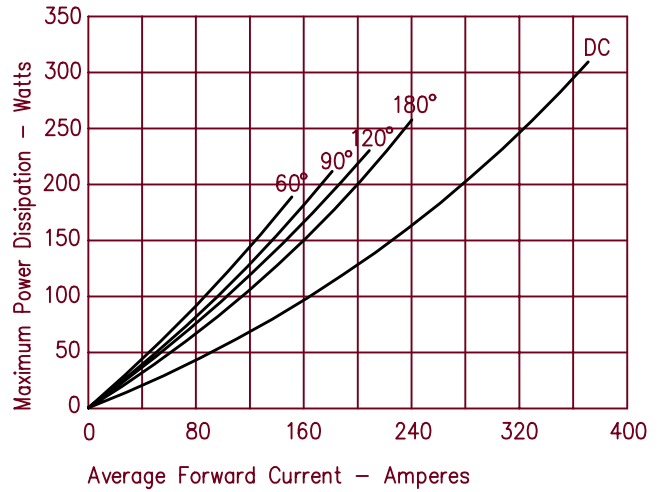
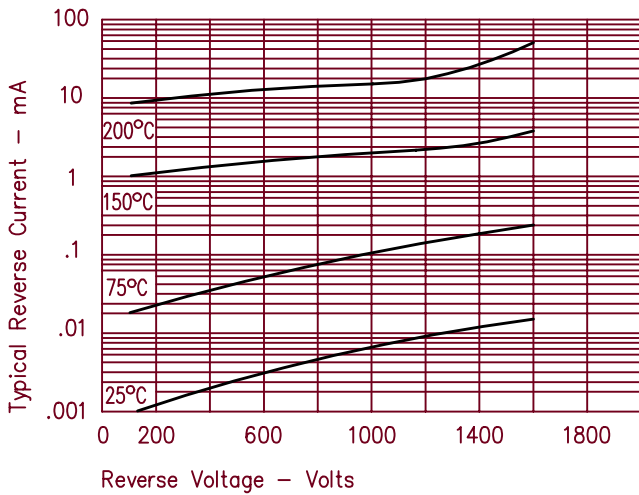


Figure 2  
Typical Reverse Characteristics





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