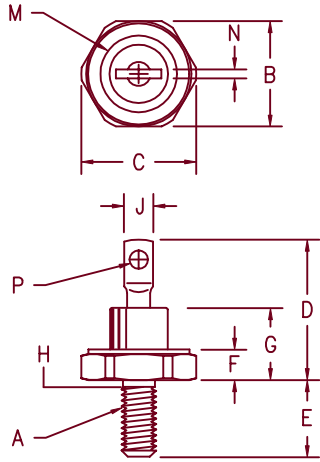


# Military Silicon Power Rectifier

## 1N1614–1N1616, 1N4458–1N4459



### Notes:

1. 10–32 UNF3A
2. Full threads within 2 1/2 threads
3. 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    | ---        | 12.83   |       |
| D    | ---     | .800    | ---        | 20.32   |       |
| E    | .422    | .453    | 10.72      | 11.51   |       |
| F    | .075    | .175    | 1.91       | 4.44    |       |
| G    | ---     | .405    | ---        | 10.29   |       |
| H    | .163    | .189    | 4.15       | 4.80    | 2     |
| J    | ---     | .250    | ---        | 6.35    |       |
| M    | ---     | .424    | ---        | 10.77   | Dia   |
| N    | .020    | .065    | .510       | 1.65    |       |
| P    | .060    | ---     | 1.52       | ---     | Dia   |

### D0203AA (D04)

| Standard | Microsemi Catalog Number | Reverse | Peak Reverse Voltage |
|----------|--------------------------|---------|----------------------|
| 1N1614   | 1N1614R                  | 1N1614R | 200V                 |
| 1N1615   | 1N1615R                  | 1N1615R | 400V                 |
| 1N1616   | 1N1616R                  | 1N1616R | 600V                 |
| 1N4458   | 1N4458R                  | 1N4458R | 800V                 |
| 1N4459   | 1N4459R                  | 1N4459R | 1000V                |

- Available in JAN and JANTX quality levels
- MIL-PRF-19500/162
- Glass passivated die
- Glass to metal seal construction
- $V_{RRM}$  – 200 to 1000 volts

### Electrical Characteristics

|                                     |                      |   |
|-------------------------------------|----------------------|---|
| Average forward current             | $I_F(AV)$ 5 Amps     | $T_C = 150^\circ C$ , half sine wave, $R_{\theta JC} = 4.5^\circ C/W$ |
| Maximum surge current               | $I_{FSM}$ 100 Amps   | 8.3ms, half sine, $T_C = 150^\circ C$                                 |
| Max $I^2 t$ for fusing              | $I^2 t$ 42 $A^2 s$   |   |
| Max peak forward voltage            | $V_{FM}$ 1.5 Volts   | $I_{FM} = 15A; T_J = 25^\circ C^*$                                    |
| Max peak reverse current            | $I_{RM}$ 50 $\mu A$  | $V_{RRM}, T_J = 25^\circ C$   |
| Max peak reverse current            | $I_{RM}$ 500 $\mu A$ | $V_{RRM}, T_J = 150^\circ C$  |
| Max Recommended Operating Frequency | 10kHz                |   |

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

### Thermal and Mechanical Characteristics

|                            |                 |                                   |
|----------------------------|-----------------|-----------------------------------|
| Storage temperature range  | $T_{STG}$       | $-65^\circ C$ to $200^\circ C$    |
| Operating case temp range  | $T_C$           | $-65^\circ C$ to $150^\circ C$    |
| Maximum thermal resistance | $R_{\theta JC}$ | 4.5 $^\circ C/W$ Junction to Case |
| Typical thermal resistance | $R_{\theta JC}$ | 2.0 $^\circ C/W$ Junction to Case |
| Mounting torque            |                 | 15 inch pounds maximum            |
| Weight                     |                 | .16 ounces (5.0 grams) typical    |

11–21–00 Rev. 1

# 1N1614-1N1616, 1N4458-1N4459

Figure 1  
Typical Forward Characteristics

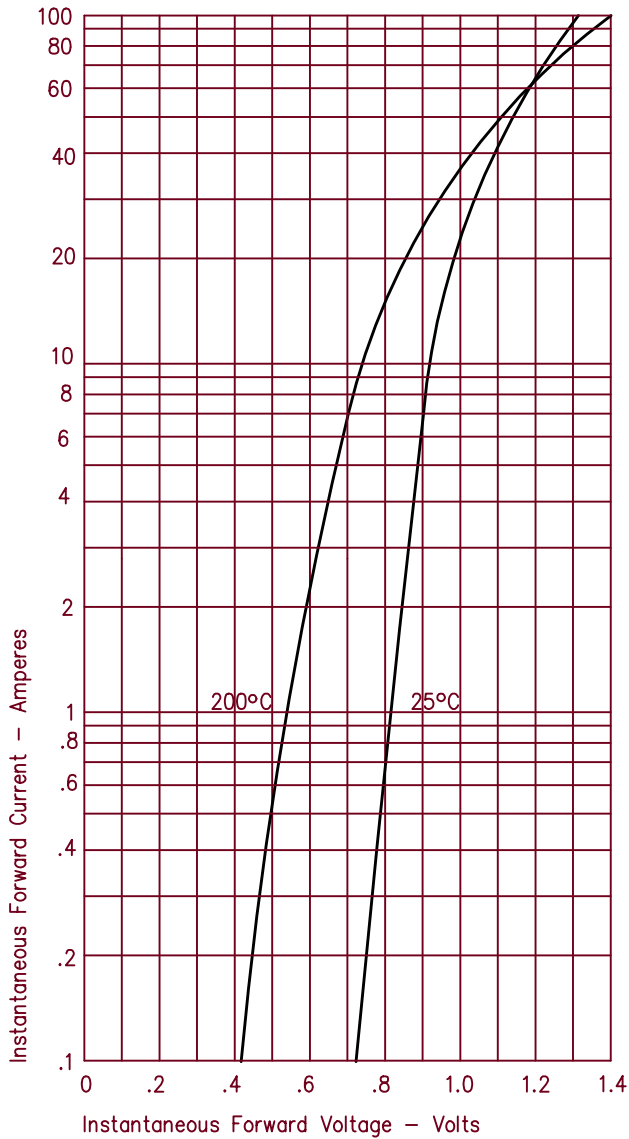


Figure 3  
Forward Current Derating

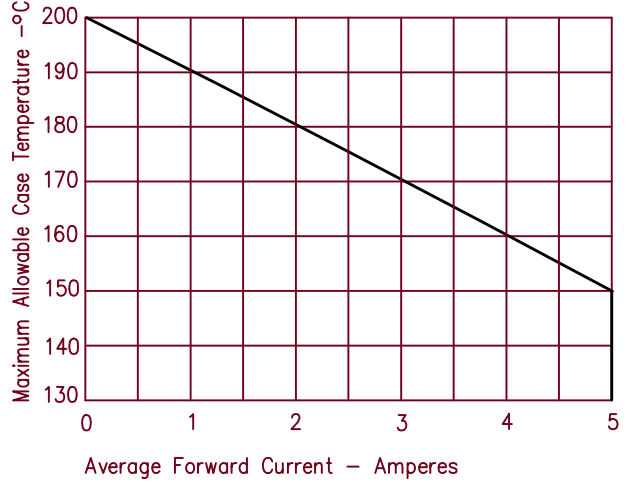


Figure 4  
Transient Thermal Impedance

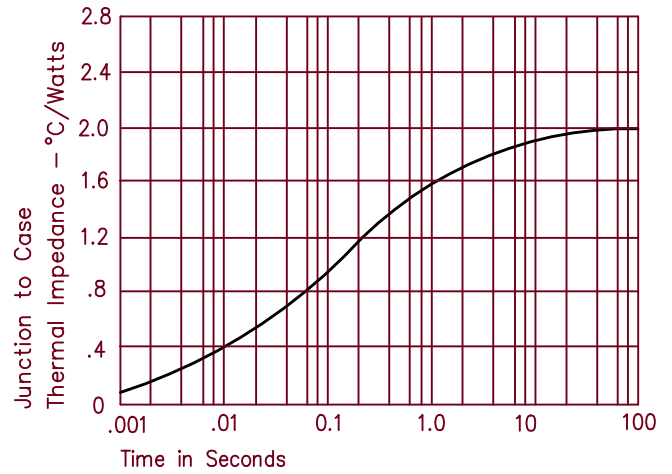


Figure 2  
Typical Reverse Characteristics

