

1N4044-1N4056

HIGH POWER RECTIFIERS

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

| Parameter | Symbol | Value | Unit |
|---------------------------|-------------|-----------------------------|---------------------------------------------------------------------------------|
| Average Forward Current | $I_{F(AV)}$ | 275 Amps | $T_C = 120^\circ\text{C}$, square wave, $R_{\theta JC} = 0.18^\circ\text{C/W}$ |
| Maximum Surge Current | I_{FSM} | 5000 Amps | 8.3ms, half sine, $T_J = 190^\circ\text{C}$ |
| Max. I^2t for fusing | I^2t | 104125 A^2s | 8.3ms |
| Max. Peak Forward Voltage | V_{FM} | 1.3 Volts | $I_{FM} = 300\text{A}$; $T_J = 25^\circ\text{C}^*$ |
| Max. Peak Reverse Current | I_{RM} | 10mA | V_{RRM} , $T_J = 150^\circ\text{C}$ |
| Max. Reverse Current | I_{RM} | 75 μA | V_{RRM} , $T_J = 25^\circ\text{C}$ |

*Pulse test: Pulse width 300 μsec . Duty cycle 2%

VOLTAGE RATINGS

| Part Number | PIV |
|-------------|-------|
| 1N4044 | 50V |
| 1N4045 | 100V |
| 1N4046 | 150V |
| 1N4047 | 200V |
| 1N4048 | 250V |
| 1N4049 | 300V |
| 1N4050 | 400V |
| 1N4051 | 500V |
| 1N4052 | 600V |
| 1N4053 | 700V |
| 1N4054 | 800V |
| 1N4055 | 900V |
| 1N4056 | 1000V |

THERMAL CHARACTERISTICS

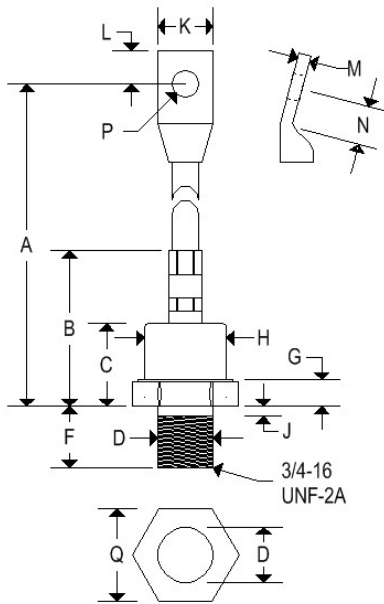
| | | |
|--------------------------------------|-----------------|------------------------------------------|
| Storage Temperature Range | T_{stg} | -65 to +190 $^\circ\text{C}$ |
| Operating Junction Temperature Range | T_J | -65 to +190 $^\circ\text{C}$ |
| Maximum Thermal Resistance | $R_{\theta JC}$ | 0.18 $^\circ\text{C/W}$ junction to case |
| Typical Thermal Resistance | $R_{\theta CS}$ | .08 $^\circ\text{C/W}$ case to sink |
| Mounting Torque | | 300-325 inch pounds |

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MECHANICAL CHARACTERISTICS

| | |
|------------------|--------------------------------|
| Case | DO-9(R) |
| Marking | Alpha-numeric |
| Normal polarity | Cathode is stud |
| Reverse polarity | Anode is stud (add "R" suffix) |



| | DO-9(R) | | | |
|---|---------|-------|-------------|--------|
| | Inches | | Millimeters | |
| | Min | Max | Min | Max |
| A | 5.300 | 5.900 | 134.60 | 149.90 |
| B | - | 2.100 | - | 53.340 |
| C | - | 1.120 | - | 28.450 |
| D | - | 0.749 | - | 19.020 |
| F | 0.793 | 0.828 | 20.140 | 21.030 |
| G | 0.310 | 0.360 | 7.870 | 9.140 |
| H | - | 1.100 | - | 27.940 |
| J | - | 0.125 | - | 3.180 |
| K | - | 0.755 | - | 19.180 |
| L | 0.423 | 0.453 | 10.740 | 11.510 |
| M | - | 0.170 | - | 4.320 |
| N | 0.470 | 0.530 | 11.940 | 13.460 |
| P | 0.338 | 0.350 | 8.580 | 8.890 |
| Q | 1.218 | 1.250 | 30.940 | 31.750 |