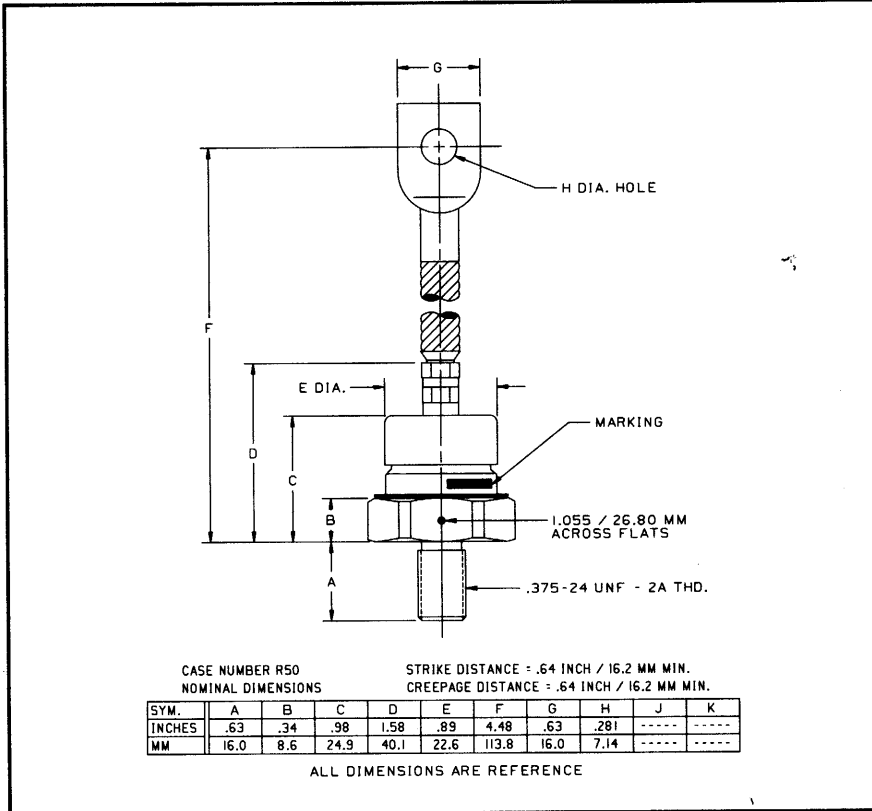


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

General Purpose Rectifier

100-150 Amperes Average
 1600 Volts



R500/R501 (Outline Drawing)



R500/R501 General Purpose Rectifier
 100-150 Amperes Average, 1600 Volts

Ordering Information:

Select the complete part number you desire from the following table:

| Type | Voltage | | Current | | Recovery Time | | Recovery Time Circuit | | Leads | |
|--------------------------------|----------------------|------|--------------------|------|--------------------------|------|-----------------------|------|-------|------|
| | V_{RRM} (Volts) | Code | $I_{F(av)}$ (A) | Code | t_{rr} (μ sec) | Code | Circuit | Code | Case | Code |
| R500 (Standard Polarity) | 400 | 04 | 100 | 10 | 7 (Typ.) | X | JEDEC | X | DO-8 | WA |
| | 600 | 06 | 150 | 15 | | | | | | |
| | 800 | 08 | | | | | | | | |
| | 1000 | 10 | | | | | | | | |
| R501 (Reverse Polarity) | 1200 | 12 | | | | | | | | |
| | 1400 | 14 | | | | | | | | |
| | 1600 | 16 | | | | | | | | |

Example: Type R500 rated at 150A average with $V_{RRM} = 1600V$, and standard flexible lead, order as:

| Type | Voltage | Current | Time | Circuit | Leads |
|---------|---------|---------|------|---------|-------|
| R 5 0 0 | 1 6 | 1 5 | X | X | W A |

Features:

- Standard and Reverse Polarities with Color Coded Ceramic Seals
- Flag Lead and Stud Top Terminals Available
- High Surge Current Ratings
- Special Electrical Selection for Parallel and Series Operation
- Compression Bonded Encapsulation

Applications:

- Electromechanical Refining
- Metal Reduction
- General Industrial Rectification



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R500/R501

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Absolute Maximum Ratings

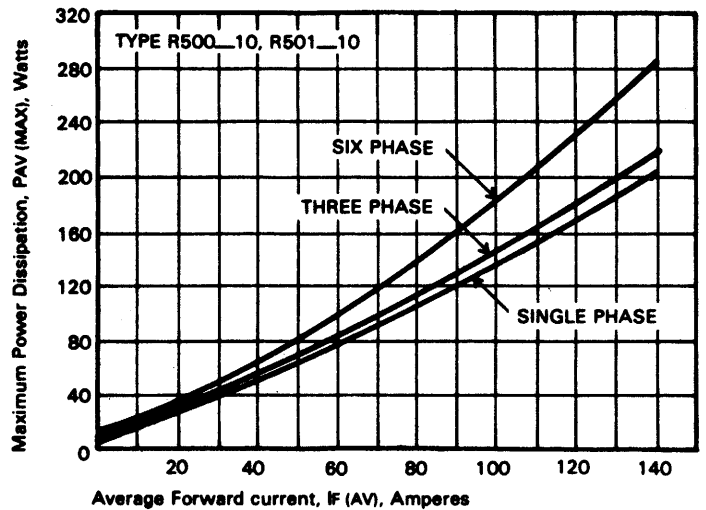
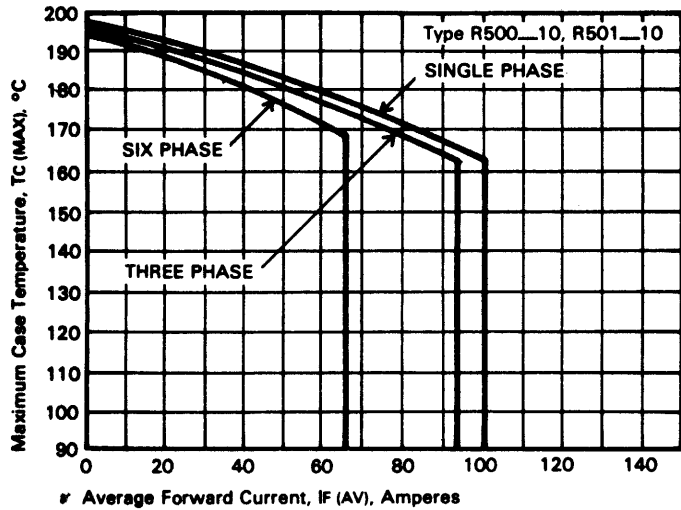
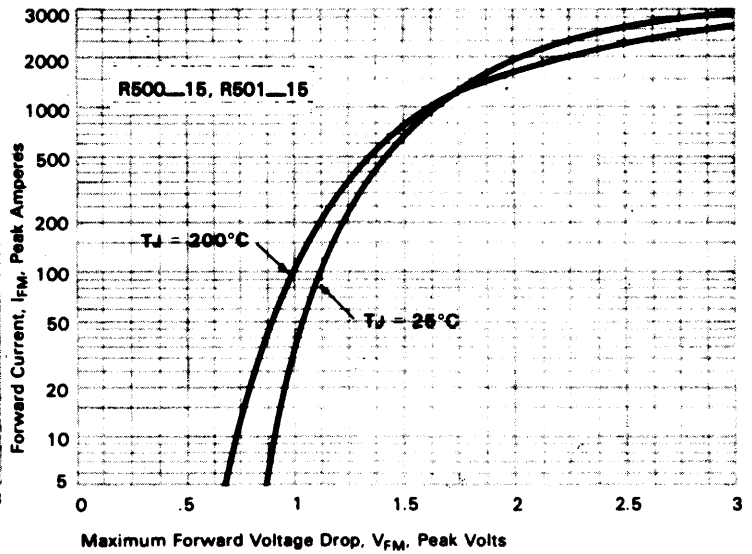
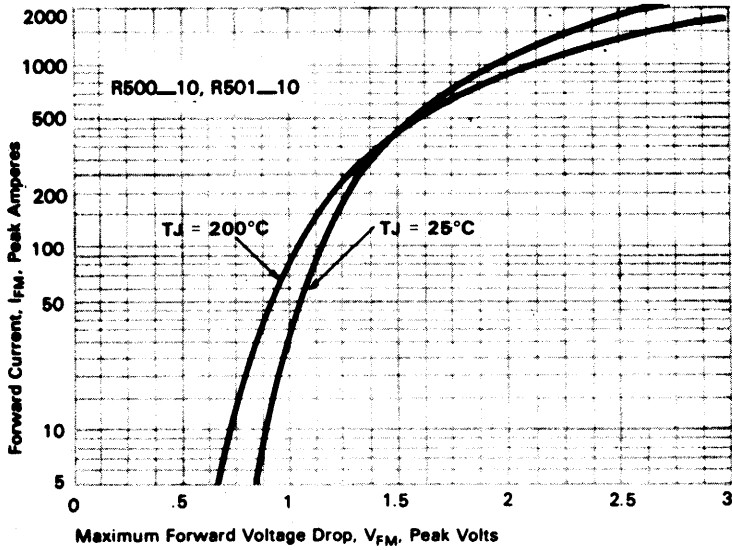
| Characteristics | Symbol | R500_ _10, | R500_ _15, | Units |
|---|--------------|-------------|-------------|----------|
| | | R501_ _10 | R501_ _15 | |
| RMS Forward Current | $I_{F(rms)}$ | 160 | 236 | Amperes |
| Average Forward Current | $I_{F(av)}$ | 100 | 150 | Amperes |
| One-half Cycle Surge Current | I_{FSM} | 2300 | 3000 | Amperes |
| 3 Cycle Surge Current | I_{FSM} | 1875 | 2375 | Amperes |
| 10 Cycle Surge Current | I_{FSM} | 1350 | 1750 | Amperes |
| I^2t (for Fusing), Times = 8.3 milliseconds | I^2t | 22000 | 37500 | A^2sec |
| Storage Temperature | T_{stg} | -65 to +200 | -65 to +200 | °C |
| Operating Temperature | T_j | -65 to +200 | -65 to +200 | °C |
| Mounting Torque (Lubricated) | | 120 | 120 | in-lb |

Electrical and Thermal Characteristics

| Characteristics | Symbol | Test Conditions | R500_ _10, | R500_ _15, | Units |
|---|-------------------|--|------------|------------|-----------|
| | | | R501_ _10 | R501_ _15 | |
| Current - Conducting State Maximums | | | | | |
| Forward Voltage Drop | V_{FM} | $T_j = 25^\circ C, I_{FM} = 470A$ | 1.55 | 1.40 | Volts |
| Voltage - Blocking State Maximums | | | | | |
| Repetitive Peak Reverse Voltage (Rated Limit) | V_{RRM} | | 1600 | 1600 | Volts |
| Non-rep. Trans. Peak Rev. Voltage (Rated Limit) | V_{RSM} | $t_p \leq 5.0msec$ | 1700 | 1700 | Volts |
| Reverse Leakage Current | I_{RRM} | T_j at max., $V_{RRM} = \text{Rated}$ | 30 | 30 | mA |
| Switching | | | | | |
| Typical Reverse Recovery Time | t_{rr} | $I_{FM} = 314A, t_p = 40\mu sec,$ $di_R/dt = 25A/\mu sec, T_C = 25^\circ C$ | 7 | 7 | μsec |
| Thermal | | | | | |
| Maximum Resistance, Junction to Case | $R_{\theta(j-c)}$ | | 0.28 | 0.28 | °C/Watt |
| Maximum Resistance, Case to Sink (Lubricated) | $R_{\theta(c-s)}$ | | 0.20 | 0.20 | °C/Watt |

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