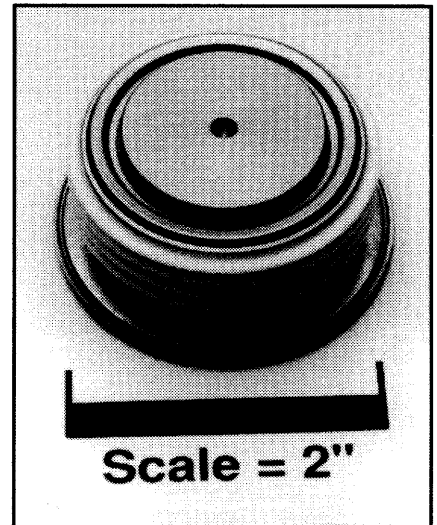
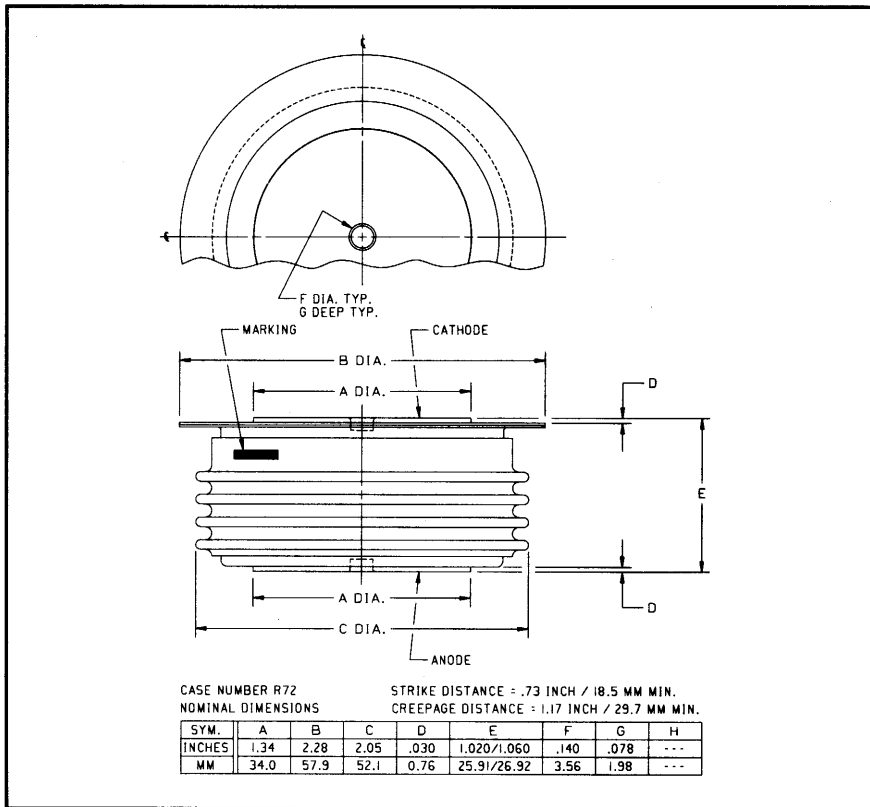


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

General Purpose Rectifier
600-1200 Amperes
4400 Volts



R720
General Purpose Rectifier
 600-1200 Amperes, 4400 Volts

R720 (Outline Drawing)

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} (μsec) | Code | Circuit | Code | Case | Code |
| R720 | 100 | 01 | 600 | 06 | 13 | X | JEDEC | X | R72 | OO |
| | 200 | 02 | | | | | | | | |
| | 400 | 04 | 900 | 09 | 10 | | | | | |
| | 600 | 06 | | | | | | | | |
| | 800 | 08 | 1200 | 12 | 7 | | | | | |
| | 1000 | 10 | | | (Typical) | | | | | |
| | 1200 | 12 | | | | | | | | |
| | 1400 | 14 | | | | | | | | |
| | 1600 | 16 | | | | | | | | |
| | 1800 | 18 | | | | | | | | |
| | 2000 | 20 | | | | | | | | |
| | 2200 | 22 | | | | | | | | |
| | 2400 | 24 | | | | | | | | |
| | 2600 | 26 | | | | | | | | |
| | 2800 | 28 | | | | | | | | |
| | 3000 | 30 | | | | | | | | |
| | 3500 | 35 | | | | | | | | |
| | 4000 | 40 | | | | | | | | |
| | 4400 | 44 | | | | | | | | |

Example: Type R720 rated at 900A average with V_{RRM} = 2600V

| Type | Voltage | Current | Time | Circuit | Leads |
|---------|---------|---------|------|---------|-------|
| R 7 2 0 | 2 6 | 0 9 | X | X | O O |

Features:

- High Surge Current Ratings
- High Rated Blocking Voltages
- Special Electrical Selection for Parallel and Series Operation
- Single or Double-sided Cooling
- Long Creepage & Strike Paths
- Hermetic Seal

Applications:

- Rectification
- Free Wheeling Diode
- Battery Chargers
- Resistance Welding



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R720
General Purpose Rectifier
 600-1200 Amperes, 4400 Volts

Absolute Maximum Ratings

| Characteristics | Symbol | R720__06 | R720__09 | R720__12 | Units |
|---|--------------|----------------------------|-------------------------------|-------------------------------|-------------|
| RMS Forward Current | $I_{F(rms)}$ | 945 | 1415 | 1885 | Amperes |
| Average Forward Current | $I_{F(av)}$ | 600 | 900 | 1200 | Amperes |
| One-half Cycle Surge Current | I_{FSM} | 7000 | 8500 | 12500 | Amperes |
| 3 Cycle Surge Current | I_{FSM} | 5250 | 6350 | 9400 | Amperes |
| 10 Cycle Surge Current | I_{FSM} | 4350 | 5300 | 7800 | Amperes |
| I^2t (for Fusing), Times = 8.3 milliseconds | I^2t | 204000 | 301000 | 650700 | A^2sec |
| Max. I^2t of Package (t = 8.3ms) | I^2t | 80×10^6 | 80×10^6 | 80×10^6 | A^2sec |
| Storage Temperature | T_{stg} | -65 to +200 | -65 to +200 | -65 to +200 | $^{\circ}C$ |
| Operating Temperature | T_j | Up to 1400V -65 to +200 | 1400V to 2200V -65 to +175 | 2200V to 4600V -65 to +150 | $^{\circ}C$ |
| Mounting Force | | 2000 to 2400 | 2000 to 2400 | 2000 to 2400 | lbs |

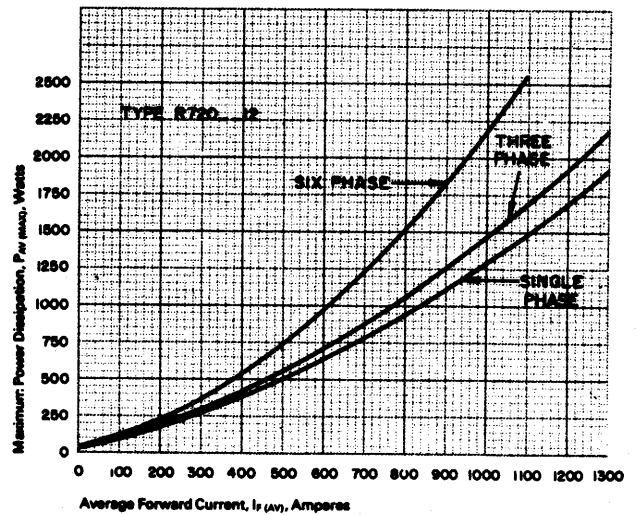
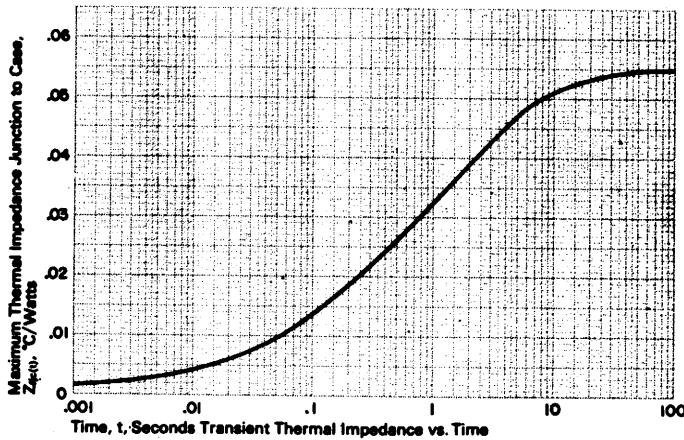
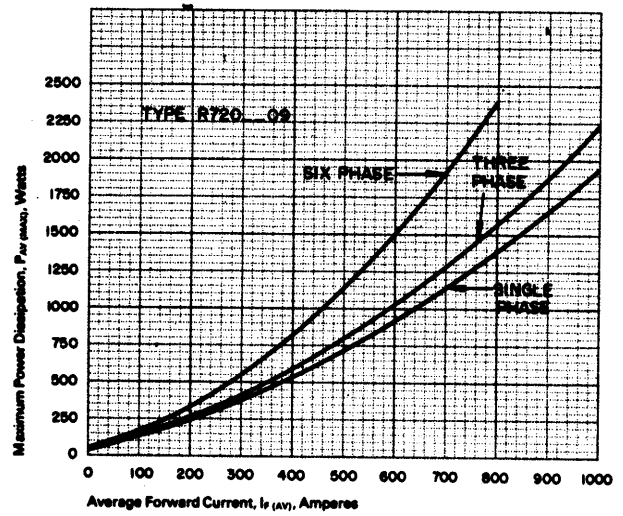
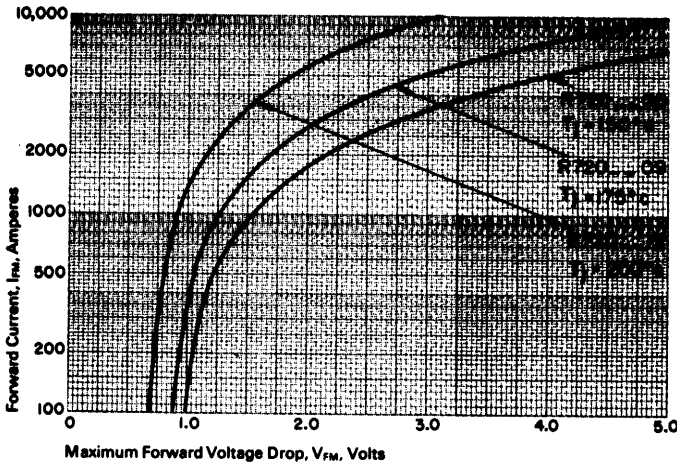
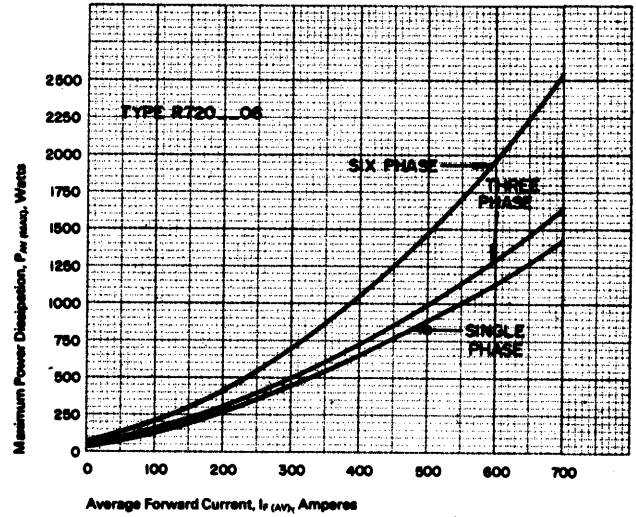
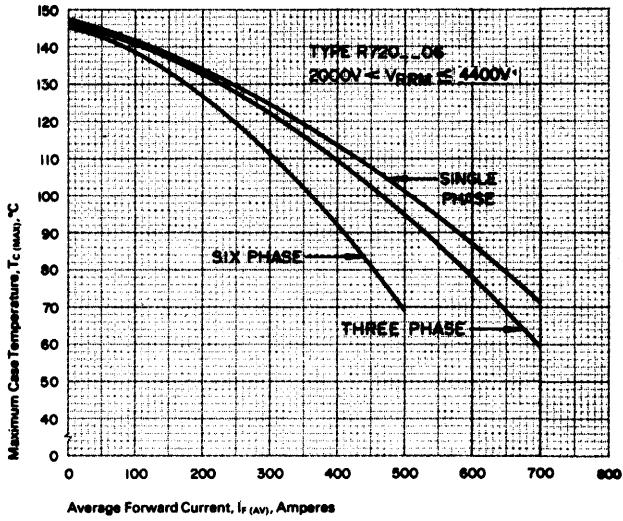
Electrical and Thermal Characteristics

| Characteristics | Symbol | Test Conditions | R720__06 | R720__09 | R720__12 | Units |
|---|-------------------|---|---------------------|-------------------------|-------------------------|------------------|
| Current - Conducting State Maximums | | | | | | |
| Forward Voltage Drop | V_{FM} | $T_j = 25^{\circ}C, I_{FM} = 1500A$ | 2.15 | 1.60 | 1.20 | Volts |
| Voltage - Blocking State Maximums | | | | | | |
| Repetitive Peak Reverse Voltage (Rated Limit) | V_{RRM} | | 4400 | 2600 | 1600 | Volts |
| Non-rep. Trans. Peak Rev. Voltage (Rated Limit) | V_{RSM} | $t \leq 5.0\mu sec$ | 4600 | 2800 | 1800 | Volts |
| Reverse Leakage Current | I_{RRM} | T_j at max., V_{RRM} Rated | 50 | 50 | 50 | mA |
| Switching | | | | | | |
| Typical Reverse Recovery Time | t_{rr} | $I_{FM} = 1500A, t_p = 190\mu sec,$ $di_F/dt = 25A/msec,$ $T_C = 25^{\circ}C$ | Up to 1400V 7 | 1400V to 2200V 10 | 2200V to 4600V 13 | μsec |
| Thermal | | | | | | |
| Maximum Resistance, Double-sided Cooling, Junction to Case | $R_{\theta(j-c)}$ | | 0.055 | 0.055 | 0.055 | $^{\circ}C/Watt$ |
| Maximum Resistance, Case to Sink (Lubricated) | $R_{\theta(c-s)}$ | | 0.02 | 0.02 | 0.02 | $^{\circ}C/Watt$ |



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