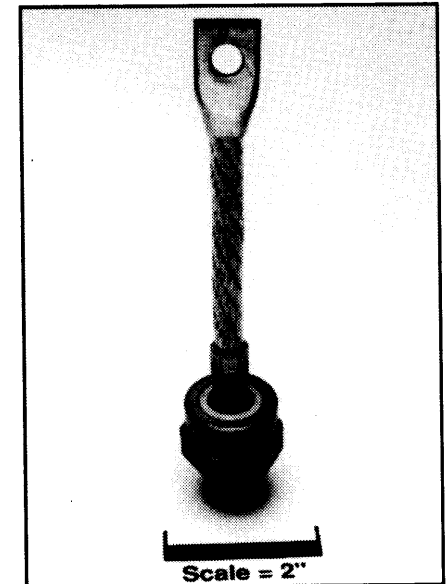
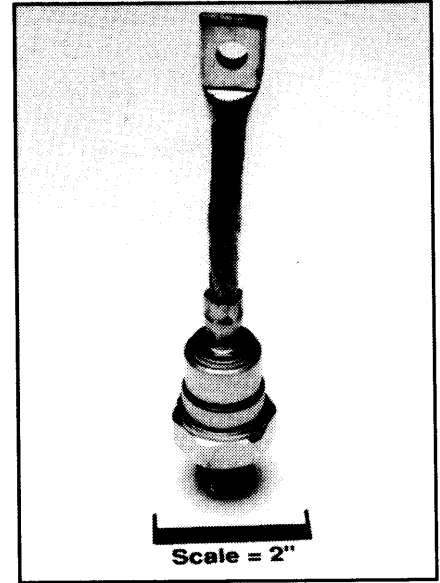
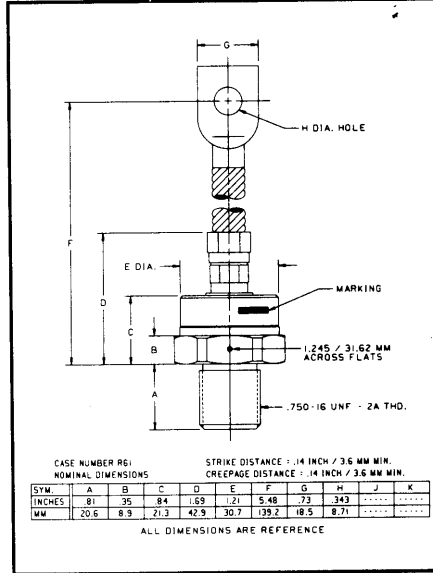
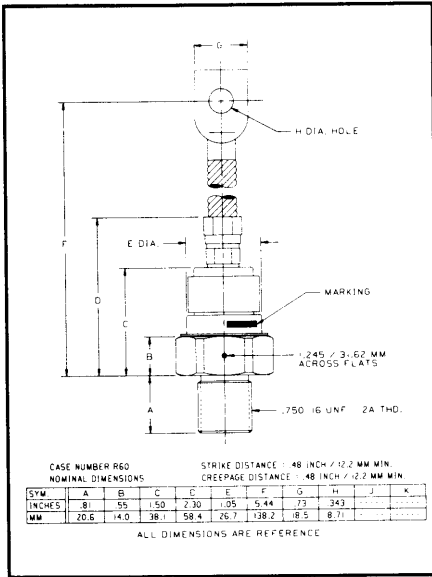


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

General Purpose Rectifier
275 Amperes Average
1000 Volts



IN4044, R - IN4056, R (Outline Drawing)

Ordering Information:

Select the complete six digit part number you desire from the table, i.e. IN4056 is a 1000 Volt, 275 Ampere General Purpose Rectifier.

| Type | Voltage | Current |
|--------|---|---------------------------|
| | V _{DRM} /V _{RRM} (Volts) | I _{f(av)} (A) |
| IN4044 | 50 | 275 |
| IN4045 | 100 | |
| IN4046 | 150 | |
| IN4047 | 200 | |
| IN4048 | 250 | |
| IN4049 | 300 | |
| IN4050 | 400 | |
| IN4051 | 500 | |
| IN4052 | 600 | |
| IN4053 | 700 | |
| IN4054 | 800 | |
| IN4055 | 900 | |
| IN4056 | 1000 | |

Features:

- Standard and Reverse Polarities with Color Coded Seals
- High Surge Current Ratings
- Electrical Selection for Parallel and Series Operation

Applications:

- Welders
- Battery Chargers
- Electrochemical Refining
- Metal Reduction
- General Industrial High Current Rectification

IN4044, R - IN4056, R
General Purpose Rectifier
275 Amperes Average,
1000 Volts



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

IN4044,R - IN4056,R
General Purpose Rectifier
275 Ampere Average, 1000 Volts

Absolute Maximum Ratings

| Characteristics | Symbol | IN4044,R - IN4056,R | Units |
|---|--------------|---------------------|-------------|
| RMS Forward Current | $I_{F(rms)}$ | 435 | Amperes |
| Maximum Average Forward Current | $I_{F(av)}$ | 275 | Amperes |
| One-half Cycle Surge Current (at 60Hz Under Load) | I_{FSM} | 5000 | Amperes |
| I^2t (for Fusing), (at 60Hz Half-wave) | i^2t | 104000 | A^2sec |
| Storage Temperature | T_{stg} | -65 to +190 | $^{\circ}C$ |
| Operating Temperature | T_j | -65 to +190 | $^{\circ}C$ |
| Mounting Torque (Lubricated) | | 360 | in-lb |



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

IN4044,R - IN4056,R
 General Purpose Rectifier
 275 Ampere Average, 1000 Volts

Electrical and Thermal Characteristics

| Characteristics | Symbol | IN4044 | IN4045 | IN4046 | IN4047 | IN4048 | IN4049 | IN4050 | Units |
|---|-------------------|------------------|--------|--------|--------|--------|--------|--------|-----------------------|
| Current - Conducting State Maximums, $T_j = 200^\circ\text{C}$ | | | | | | | | | |
| Max. Reverse Current at Rated V_{RRM} 275A Avg. Forward Current, $T_j = 190^\circ\text{C}$ | $I_{R(av)}$ | 15 (All Types) | | | | | | | mA |
| Voltage - Blocking State Maximums | | | | | | | | | |
| Repetitive Peak Reverse Voltage | V_{RRM} | 50 | 100 | 150 | 200 | 250 | 300 | 400 | Volts |
| Non-rep. Trans. Peak Rev. Voltage | V_{RSM} | 100 | 200 | 250 | 300 | 350 | 400 | 525 | Volts |
| Max. Allowable d-c Blocking Voltage | V_R | 50 | 100 | 150 | 200 | 250 | 300 | 400 | Volts |
| Thermal | | | | | | | | | |
| Maximum Resistance, Junction to Case | $R_{\theta(j-c)}$ | 0.17 (All Types) | | | | | | | $^\circ\text{C/Watt}$ |
| Maximum Resistance, Case to Sink (Lubricated) | $R_{\theta(c-s)}$ | 0.15 (All Types) | | | | | | | $^\circ\text{C/Watt}$ |

Electrical and Thermal Characteristics

| Characteristics | Symbol | IN4051 | IN4052 | IN4053 | IN4054 | IN4055 | IN4056 | Units |
|---|-------------------|------------------|--------|--------|--------|--------|--------|-----------------------|
| Current - Conducting State Maximums, $T_j = 200^\circ\text{C}$ | | | | | | | | |
| Max. Reverse Current at Rated V_{RRM} 275A Avg. Forward Current, $T_j = 190^\circ\text{C}$ | $I_{R(av)}$ | 12 (All Types) | | | | | | mA |
| Voltage - Blocking State Maximums | | | | | | | | |
| Repetitive Peak Reverse Voltage | V_{RRM} | 500 | 600 | 700 | 800 | 900 | 1000 | Volts |
| Non-rep. Trans. Peak Rev. Voltage | V_{RSM} | 650 | 800 | 925 | 1050 | 1175 | 1300 | Volts |
| Max. Allowable d-c Blocking Voltage | V_R | 500 | 600 | 700 | 800 | 900 | 1000 | Volts |
| Thermal | | | | | | | | |
| Maximum Resistance, Junction to Case | $R_{\theta(j-c)}$ | 0.17 (All Types) | | | | | | $^\circ\text{C/Watt}$ |
| Maximum Resistance, Case to Sink (Lubricated) | $R_{\theta(c-s)}$ | 0.15 (All Types) | | | | | | $^\circ\text{C/Watt}$ |

*Ceramic Seal Supplied

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

IN4044,R - IN4056,R
General Purpose Rectifier
 275 Ampere Average, 1000 Volts

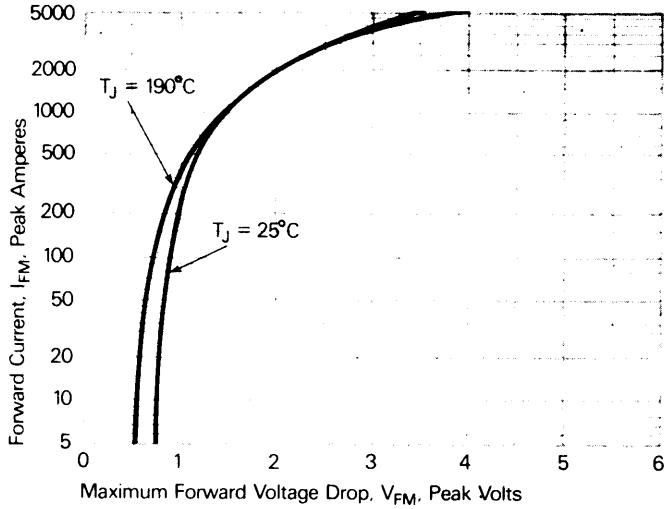


Figure 1. Forward current vs. forward voltage.

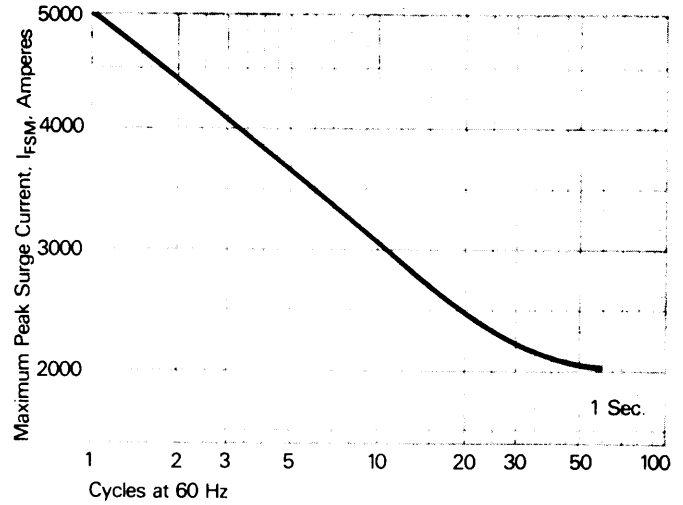


Figure 2. Maximum allowable surge current at rated load conditions.

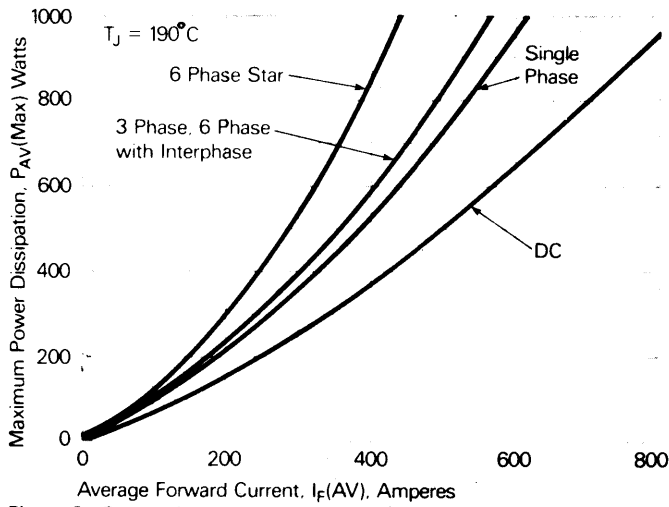


Figure 3. Power dissipation vs. Average forward current.

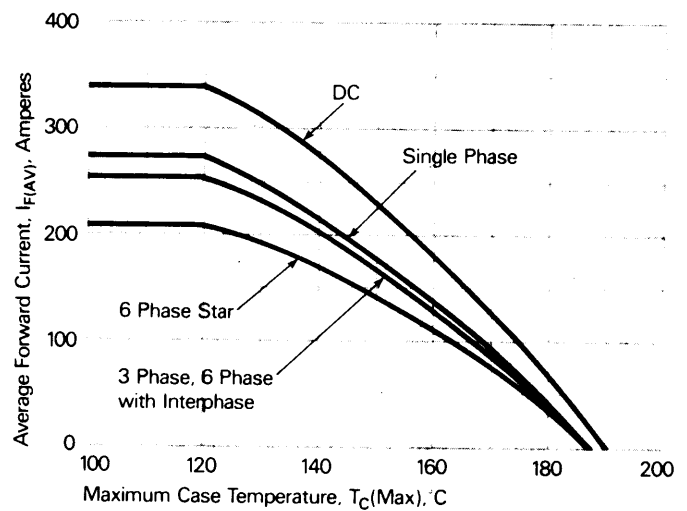


Figure 4. Forward current vs. Case temperature.

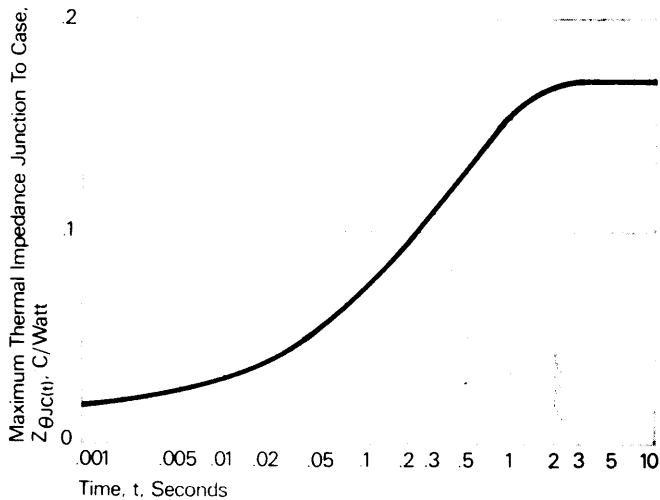


Figure 5. Transient thermal impedance vs. time.