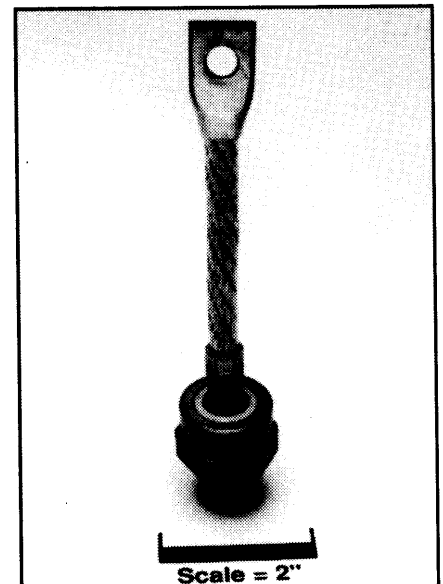
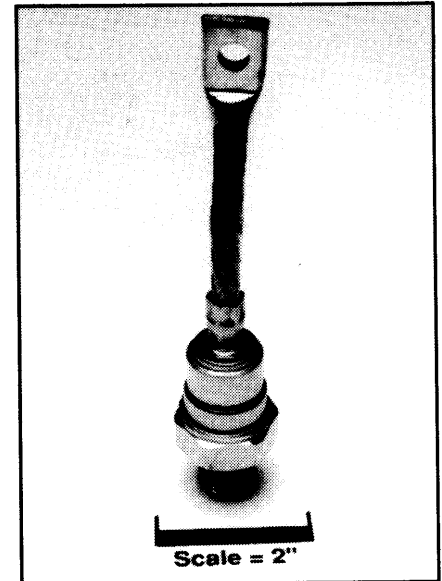
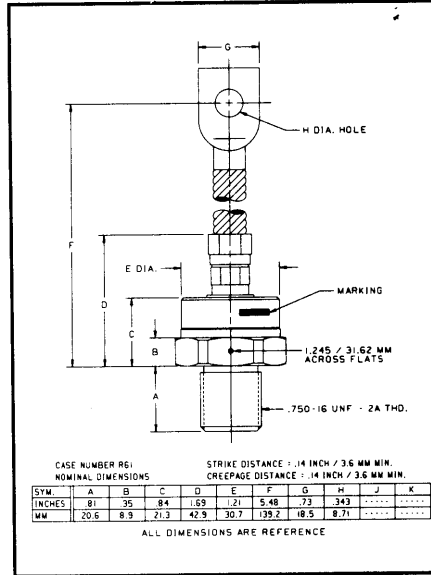
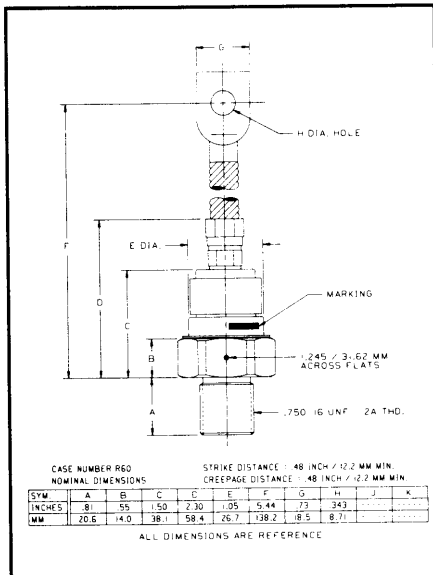


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**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 <sub>DRM</sub> /V <sub>RRM</sub> (Volts)	I <sub>f(av)</sub> (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,  
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**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	°C
Operating Temperature	$T_j$	-65 to +190	°C
Mounting Torque (Lubricated)		360	in-lb



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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
<b>Current - Conducting State Maximums, T<sub>j</sub> = 200°C</b>									
Max. Reverse Current at Rated V <sub>RRM</sub>	I <sub>R(av)</sub>	15 (All Types)							mA
275A Avg. Forward Current, T <sub>j</sub> = 190°C									
<b>Voltage - Blocking State Maximums</b>									
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	50	100	150	200	250	300	400	Volts
Non-rep. Trans. Peak Rev. Voltage	V <sub>RSM</sub>	100	200	250	300	350	400	525	Volts
Max. Allowable d-c Blocking Voltage	V <sub>R</sub>	50	100	150	200	250	300	400	Volts
<b>Thermal</b>									
Maximum Resistance, Junction to Case	R <sub>θ(j-c)</sub>	0.17 (All Types)							°C/Watt
Maximum Resistance, Case to Sink (Lubricated)	R <sub>θ(c-s)</sub>	0.15 (All Types)							°C/Watt

## Electrical and Thermal Characteristics

Characteristics	Symbol	IN4051	IN4052	IN4053	IN4054	IN4055	IN4056	Units
Current - Conducting State Maximums, T <sub>j</sub> = 200°C								
Max. Reverse Current at Rated V <sub>RRM</sub>	I <sub>R(av)</sub>	12 (All Types)						mA
275A Avg. Forward Current, T <sub>j</sub> = 190°C								
Voltage - Blocking State Maximums								
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	500	600	700	800	900	1000	Volts
Non-rep. Trans. Peak Rev. Voltage	V <sub>RSM</sub>	650	800	925	1050	1175	1300	Volts
Max. Allowable d-c Blocking Voltage	V <sub>R</sub>	500	600	700	800	900	1000	Volts
Thermal								
Maximum Resistance, Junction to Case	R <sub>θ(j-c)</sub>	0.17 (All Types)						°C/Watt
Maximum Resistance, Case to Sink (Lubricated)	R <sub>θ(c-s)</sub>	0.15 (All Types)						°C/Watt

\*Ceramic Seal Supplied

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

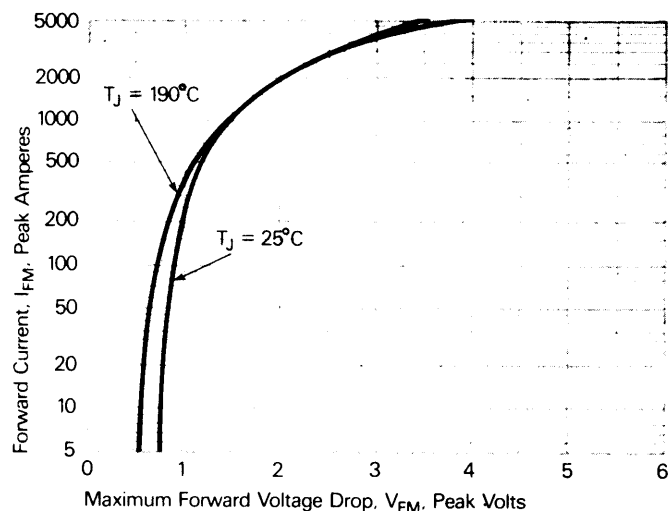


Figure 1. Forward current vs. forward voltage.

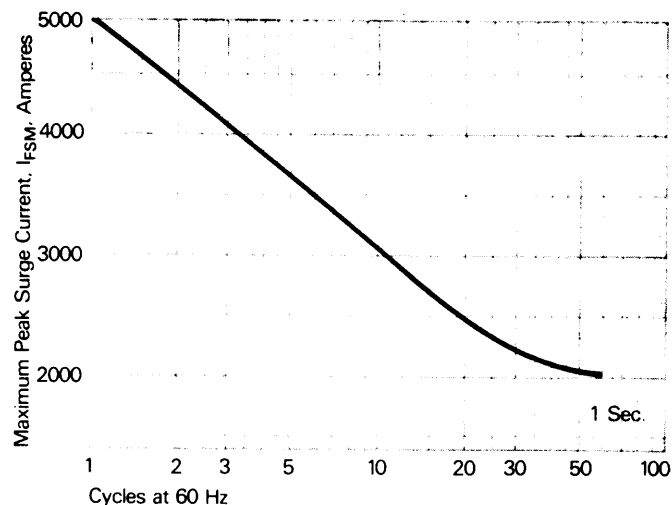


Figure 2. Maximum allowable surge current at rated load conditions.

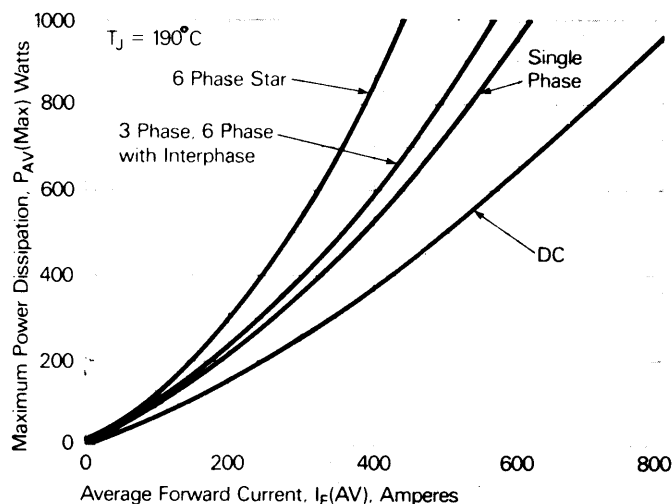


Figure 3. Power dissipation vs. Average forward current.

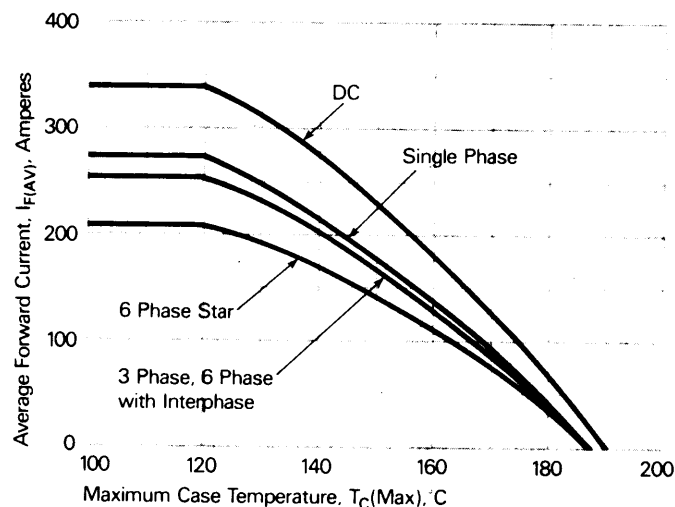


Figure 4. Forward current vs. Case temperature.

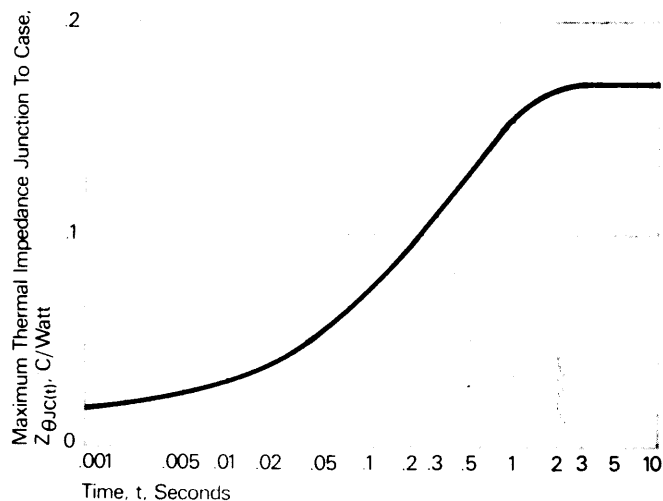


Figure 5. Transient thermal impedance vs. time.