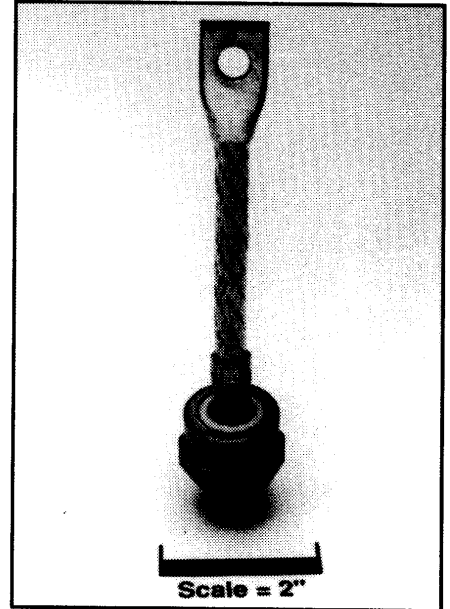
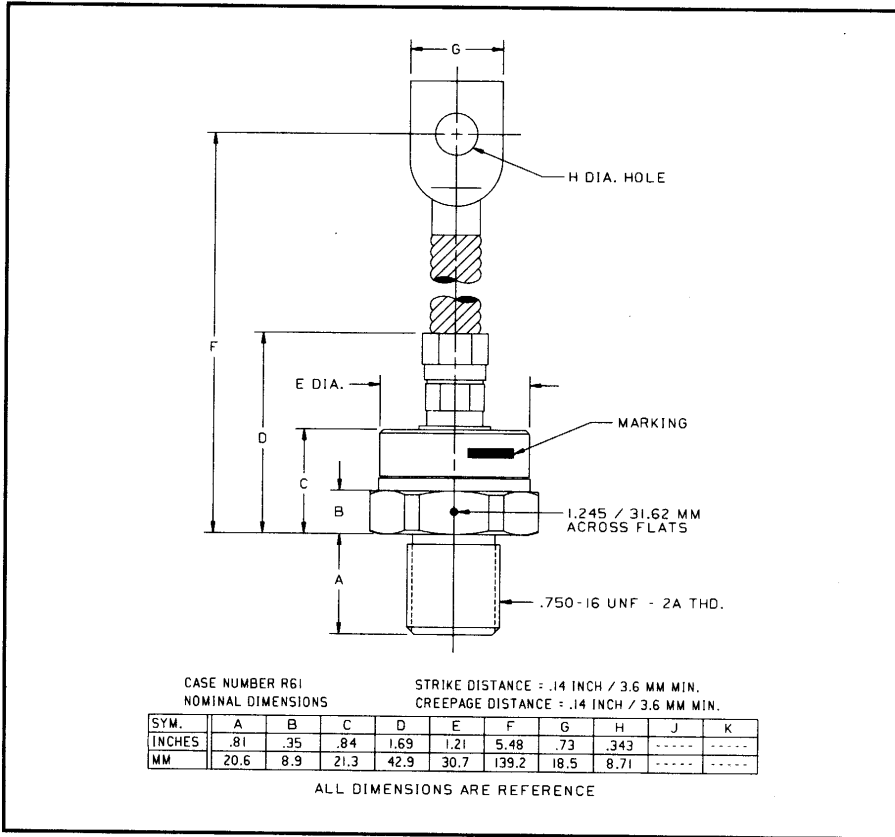


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**General Purpose Rectifier**  
 200-300 Amperes Average  
 1200 Volts



**R610/R611**  
**General Purpose Rectifier**  
 200-300 Amperes Average, 1200 Volts

R610/R611 (Outline Drawing)

**Features:**

- Standard and Reverse Polarities
- Flag Lead and Stud Top Terminals Available
- High Surge Current Ratings
- High Rated Blocking Voltages
- Special Electrical Selection for Parallel and Series Operation
- Compression Bonded Encapsulation
- JAN Types Available

**Applications:**

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

**Ordering Information:**

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

Type	Voltage		Current		Recovery Time		Recovery Time Circuit		Leads	
	V <sub>RRM</sub> (Volts)	Code	I <sub>F(av)</sub> (A)	Code	t <sub>rr</sub> (µsec)	Code	Circuit	Code	Case	Code
R610 (Std. Polarity)	100	01	200	20	13	X	JEDEC	X	DO-9	YZ
	200	02								
	400	04	250	25	11	X				
R611 (Rev. Polarity)	600	06								
	800	08	300	30	9	X				
	1000	10			(Typical)					
	1200	12								

**Example:** Type R610 rated at 250A average with V<sub>RRM</sub> = 800V, and standard flexible lead, order as:

Type	Voltage	Current	Time	Circuit	Leads
R 6 1 0	0 8	2 5	X	X	Y Z

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**R610/R611**  
**General Purpose Rectifier**  
 200-300 Amperes Average, 12600 Volts

## Absolute Maximum Ratings

Characteristics	Symbol	R610_20, R611_20	R610_25, R611_25	R610_30, R611_30	Units
RMS Forward Current	$I_{F(rms)}$	315	400	470	Amperes
Average Forward Current	$I_{F(av)}$	200	250	300	Amperes
One-half Cycle Surge Current	$I_{FSM}$	5500	6000	6500	Amperes
3 Cycle Surge Current	$I_{FSM}$	4300	4700	5050	Amperes
10 Cycle Surge Current	$I_{FSM}$	3300	3600	3900	Amperes
$I^2t$ (for Fusing), Times = 8.3 milliseconds	$I^2t$	125000	150000	175000	A <sup>2</sup> sec
Storage Temperature	$T_{stg}$	-65 to +190	-65 to +190	-65 to +190	°C
Operating Temperature	$T_j$	-65 to +190	-65 to +190	-65 to +190	°C
Mounting Torque (Lubricated)		360	360	360	in-lb



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R610/R611

General Purpose Rectifier

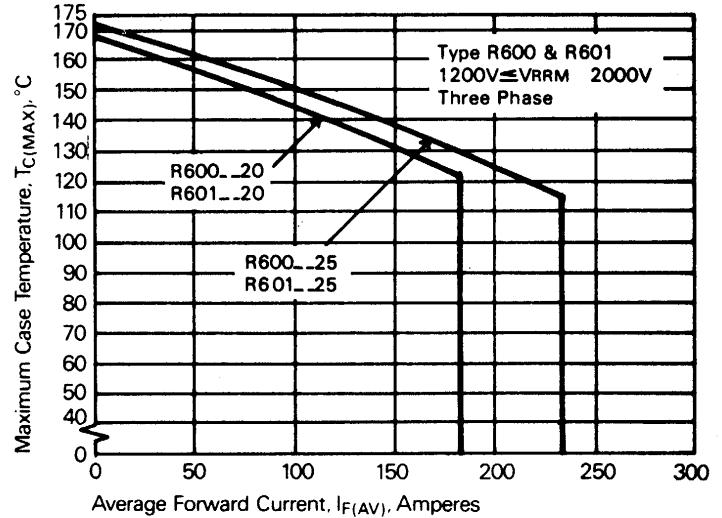
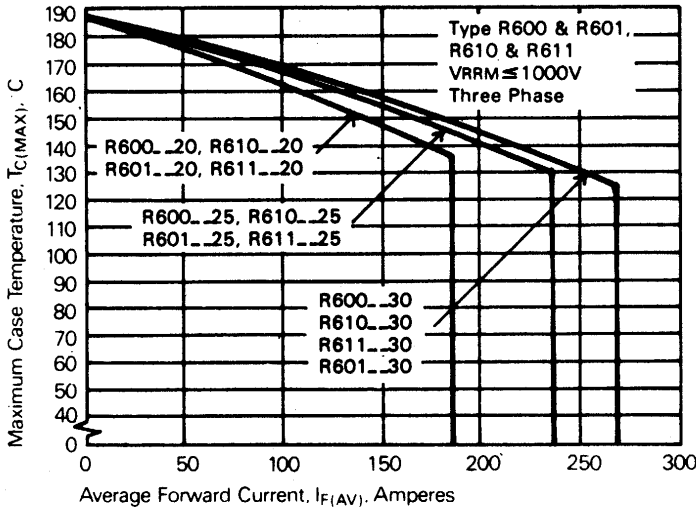
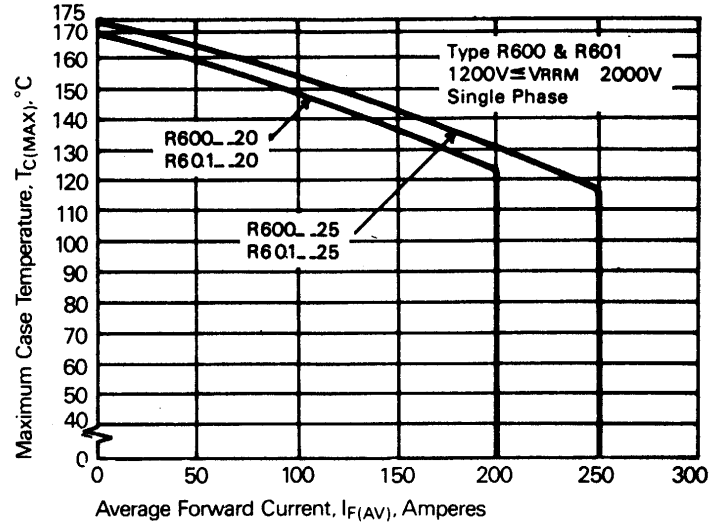
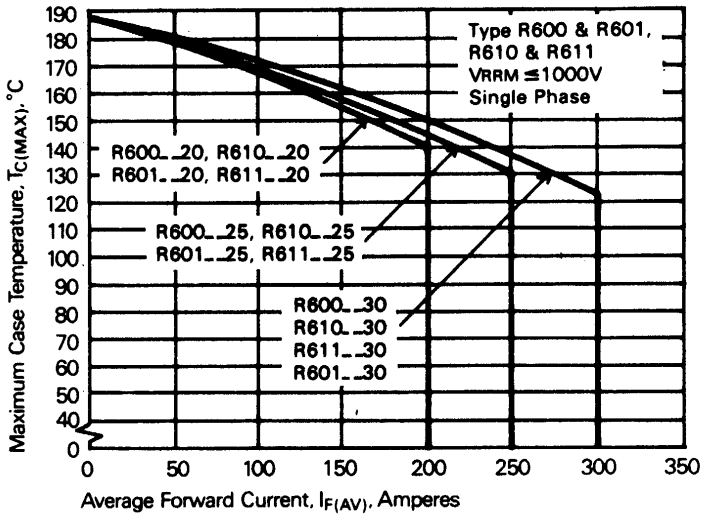
200-300 Amperes Average, 1200 Volts

### Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	R610_20,	R610_25,	R610_30,	Units
			R611_20	R611_25	R611_30	
<b>Current - Conducting State Maximums</b>						
Forward Voltage Drop	$V_{FM}$	$T_j = 25^\circ\text{C}, I_{FM} = 800\text{A}$	1.70	1.50	1.40	Volts
<b>Voltage - Blocking State Maximums</b>						
Repetitive Peak Reverse Voltage (Rated Limit)	$V_{RRM}$		1200	1200	1200	Volts
Non-rep. Trans. Peak Rev. Voltage (Rated Limit)	$V_{RSM}$	$V \leq 5.0\text{msec}$	1300	1300	1300	Volts
Reverse Leakage Current	$I_{RRM}$	$T_j$ at max., $V_{RRM}$ Rated	50	50	50	mA
<b>Switching</b>						
Typical Reverse Recovery Time	$t_{rr}$	$I_{FM} = 785\text{A}, t_p = 100\mu\text{sec},$ $di_p/dt = 25\text{A/msec}, T_C = 25^\circ\text{C}$	9	11	13	$\mu\text{sec}$
<b>Thermal</b>						
Maximum Resistance, Case to Sink (Lubricated)	$R_{\theta(c-s)}$		0.10	0.10	0.10	$^\circ\text{C/Watt}$

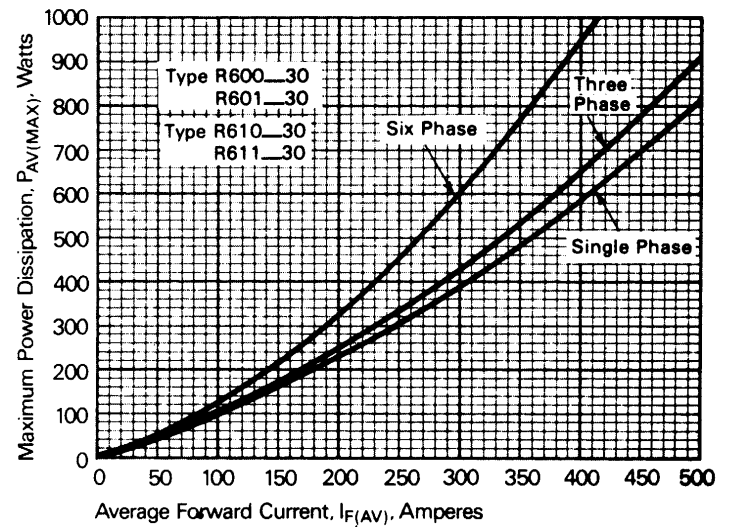
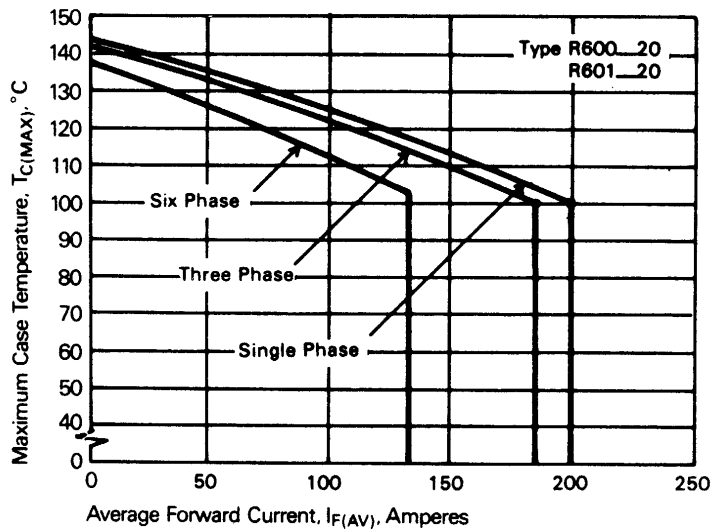
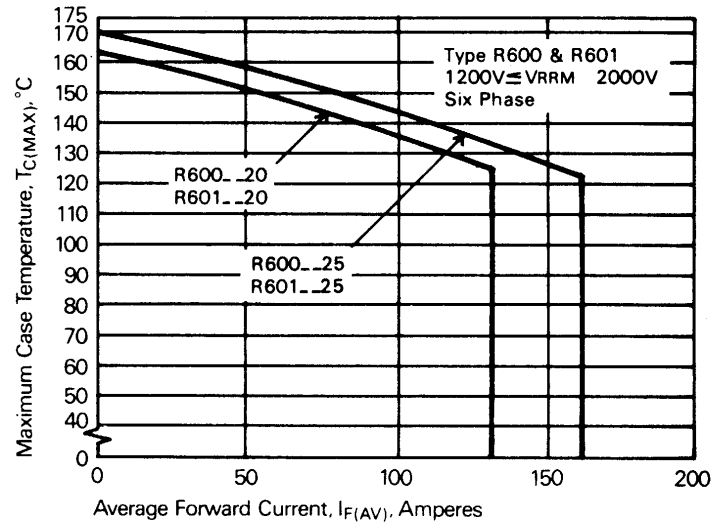
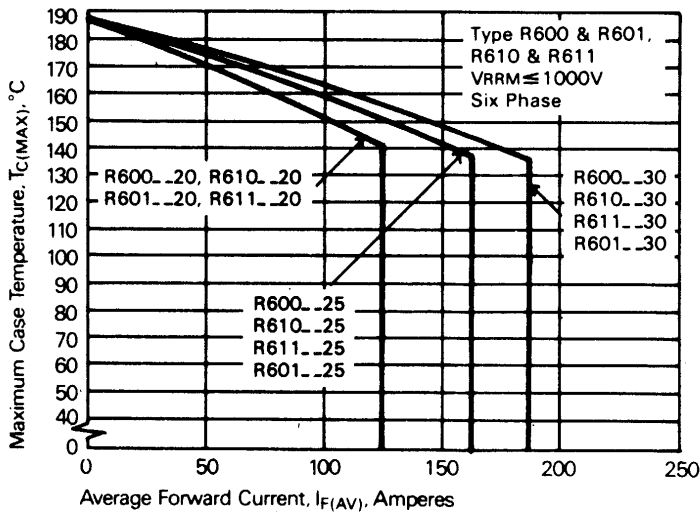
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 200-300 Amperes Average, 1200 Volts

