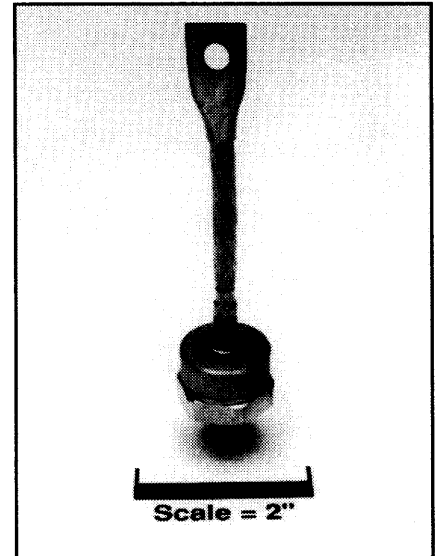
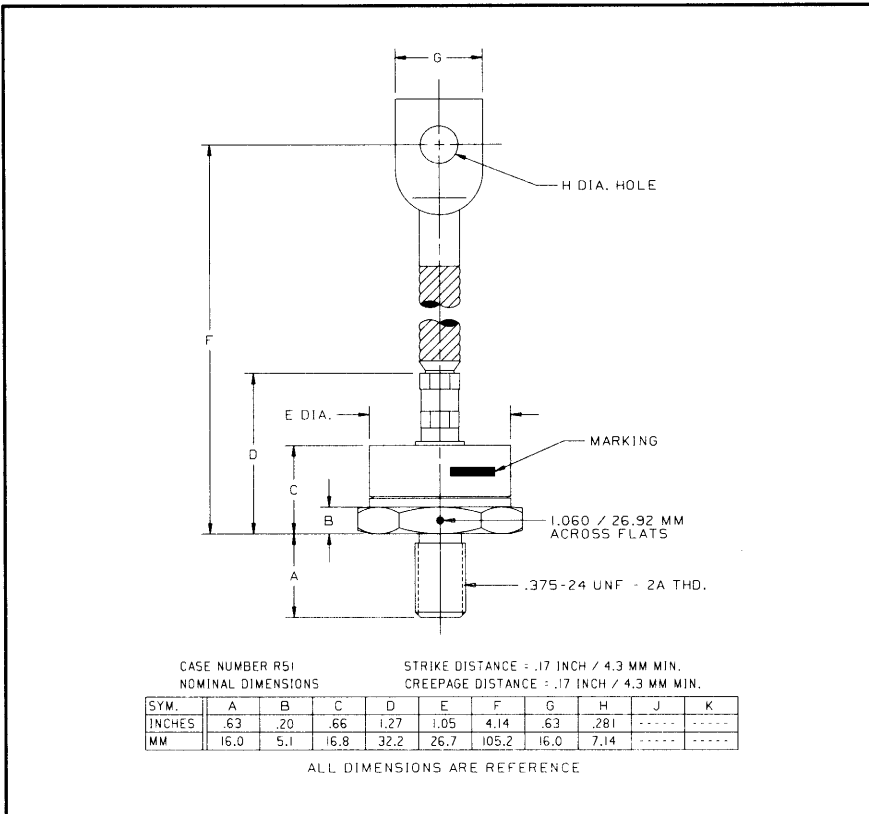


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**General Purpose Rectifier**  
 100-150 Amperes Average  
 1200 Volts



**R510/R511 General Purpose Rectifier**  
 100-150Amperes Average, 1200 Volts

R510/R511 (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	$t_{rr}$ ( $\mu$ sec)	Code	Circuit	Code	Case	Code
R510 (Standard Polarity)	100	01	100	10	7 (Typ.)	X	JEDEC	X	DO-8	WA
	200	02	150	15						
	300	03								
	400	04								
R511 (Reverse Polarity)	500	05								
	600	06								
	700	07								
	800	08								
	1000	10								
	1200	12								

**Example:** Type R510 rated at 150A average with  $V_{RRM} = 1200V$ , and standard flexible lead, order as:

Type	Voltage	Current	Time	Circuit	Leads
R 5 1 0	1 2	1 5	X	X	W A

### Features:

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

### Applications:

- Welders
- Battery Chargers
- General Industrial Rectification



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### Absolute Maximum Ratings

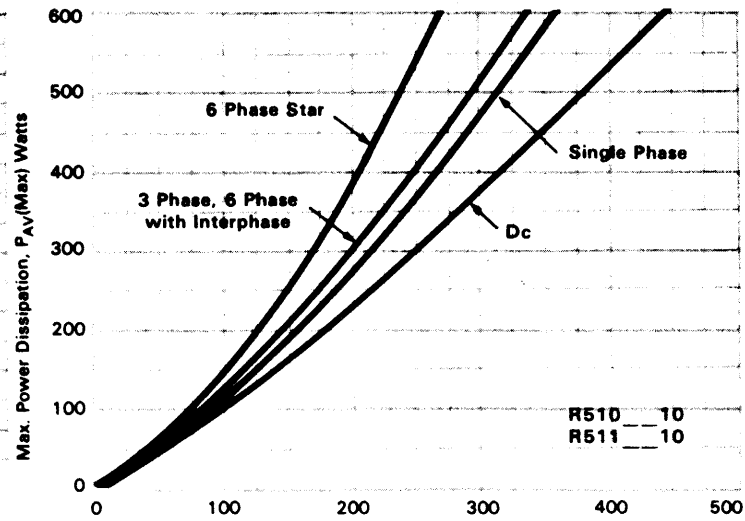
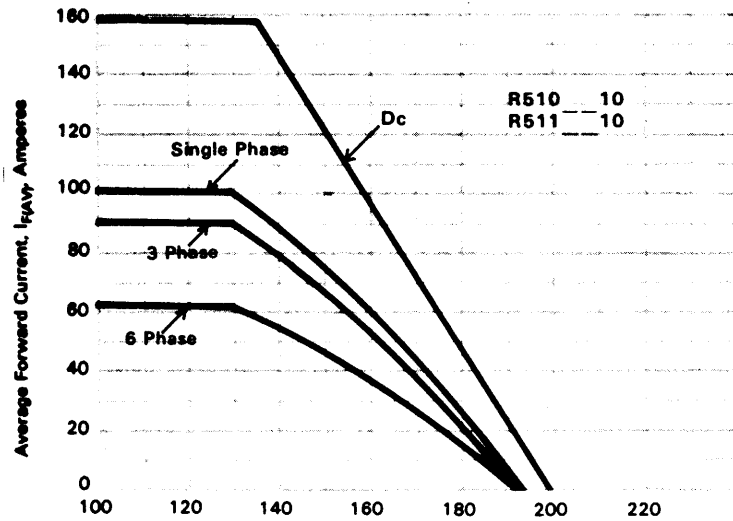
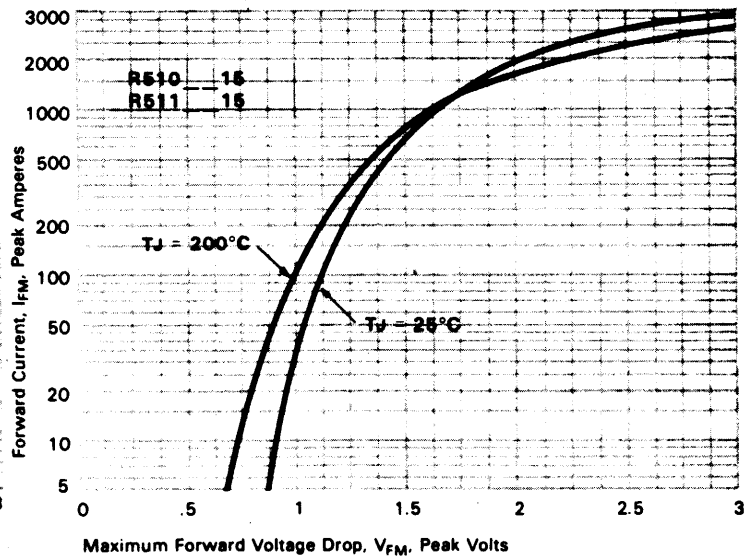
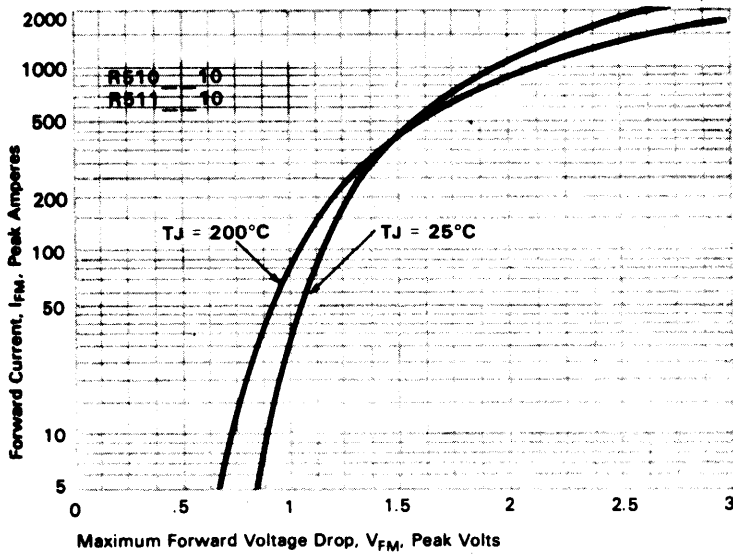
Characteristics	Symbol	R510_10,	R510_15,	Units
		R511_10	R511_15	
RMS Forward Current	$I_{F(rms)}$	160	236	Amperes
Average Forward Current	$I_{F(av)}$	100	150	Amperes
One-half Cycle Surge Current	$I_{FSM}$	2300	3000	Amperes
3 Cycle Surge Current	$I_{FSM}$	1875	2375	Amperes
10 Cycle Surge Current	$I_{FSM}$	1350	1750	Amperes
$I^2t$ (for Fusing), Times = 8.3 milliseconds	$I^2t$	22000	37500	A <sup>2</sup> sec
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	R510_10,	R510_15,	Units
			R511_10	R511_15	
<b>Current - Conducting State Maximums</b>					
Forward Voltage Drop	$V_{FM}$	$T_j = 25^\circ\text{C}$ , $I_{FM} = 470\text{A}$	1.55	1.40	Volts
<b>Voltage - Blocking State Maximums</b>					
Repetitive Peak Reverse Voltage (Rated Limit)	$V_{RRM}$		1200	1200	Volts
Non-rep. Trans. Peak Rev. Voltage (Rated Limit)	$V_{RSM}$	$t_p \leq 5.0\text{msec}$	1300	1300	Volts
Reverse Leakage Current	$I_{RRM}$	$T_j$ at max., $V_{RRM} = \text{Rated}$	30	30	mA
<b>Switching</b>					
Typical Reverse Recovery Time	$t_{rr}$	$I_{FM} = 314\text{A}$ , $t_p = 40\mu\text{sec}$ , $di_R/dt = 25\text{A}/\mu\text{sec}$ , $T_C = 25^\circ\text{C}$	7	7	$\mu\text{sec}$
<b>Thermal</b>					
Maximum Resistance, Case to Sink (Lubricated)	$R_{\theta(c-s)}$		0.20	0.20	°C/Watt

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