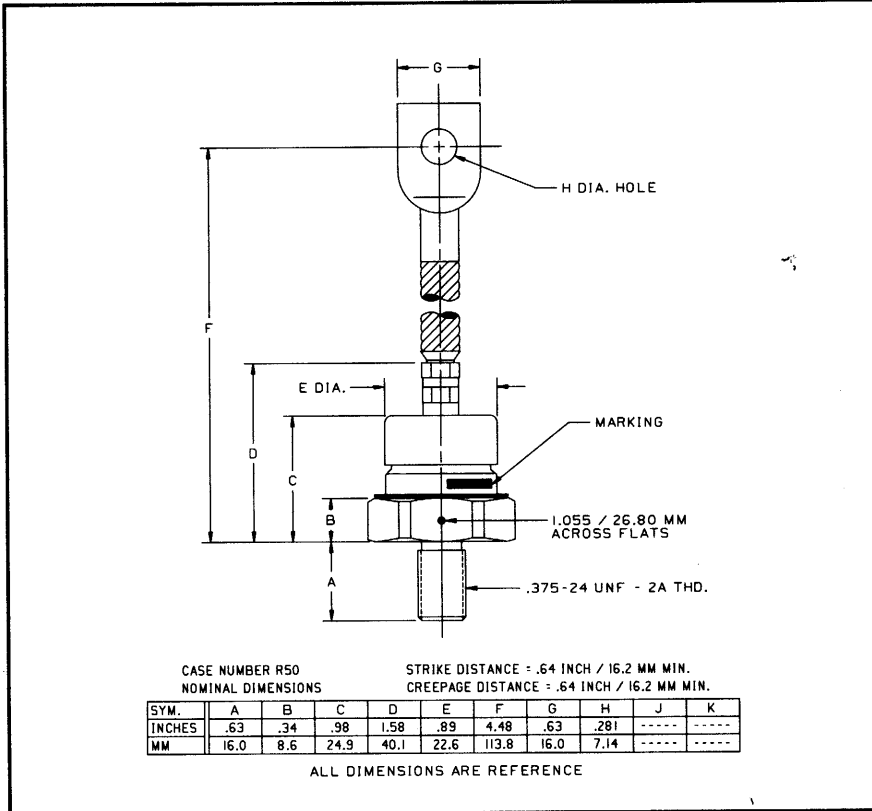


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

### General Purpose Rectifier

100-150 Amperes Average  
 1600 Volts



R500/R501 (Outline Drawing)



R500/R501 General Purpose Rectifier  
 100-150 Amperes Average, 1600 Volts

#### 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
R500 (Standard Polarity)	400	04	100	10	7 (Typ.)	X	JEDEC	X	DO-8	WA
	600	06	150	15						
	800	08								
	1000	10								
R501 (Reverse Polarity)	1200	12								
	1400	14								
	1600	16								

Example: Type R500 rated at 150A average with  $V_{RRM} = 1600V$ , and standard flexible lead, order as:

Type	Voltage	Current	Time	Circuit	Leads
R 5 0 0	1 6	1 5	X	X	W A

#### Features:

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

#### Applications:

- Electromechanical Refining
- Metal Reduction
- General Industrial Rectification



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**R500/R501**

**General Purpose Rectifier**

100-150 Amperes Average, 1600 Volts

**Absolute Maximum Ratings**

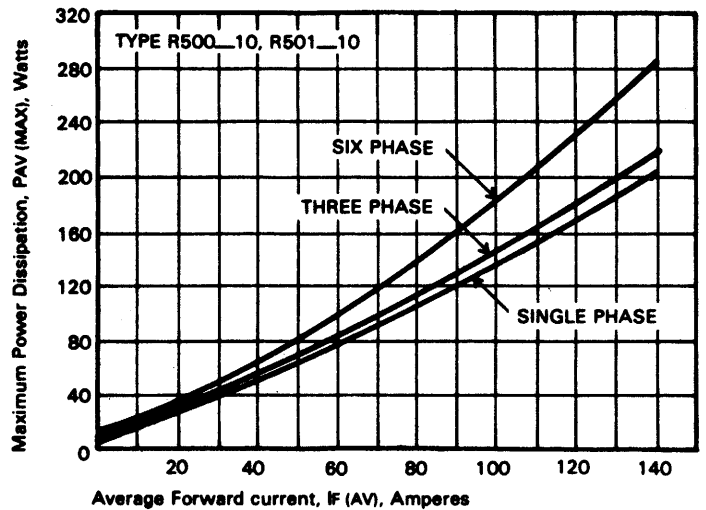
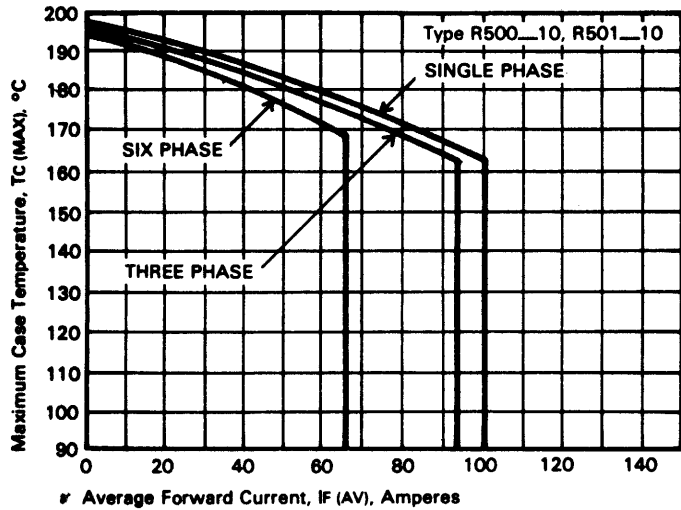
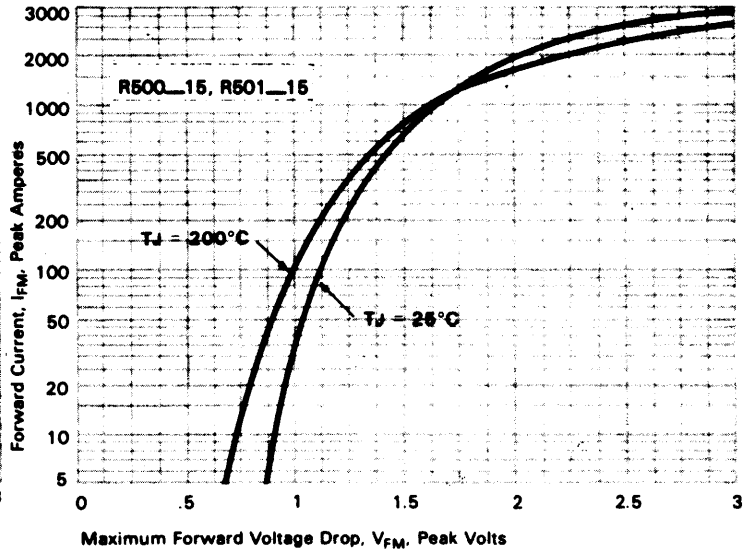
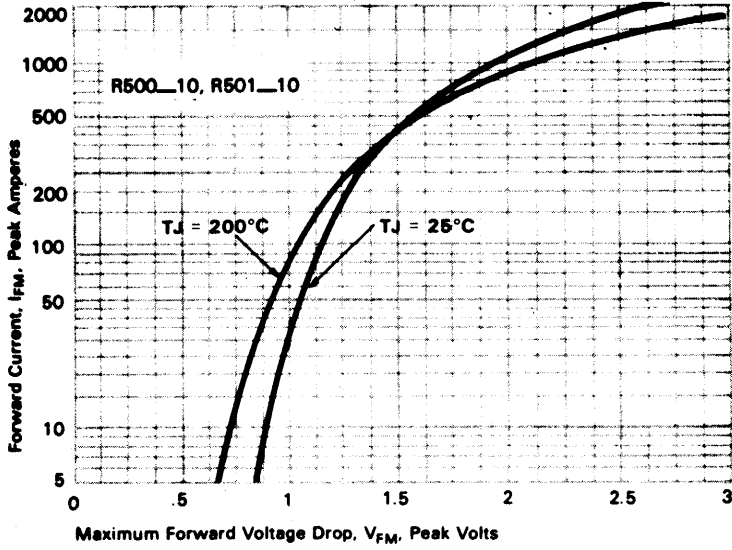
Characteristics	Symbol	R500_ _10,	R500_ _15,	Units
		R501_ _10	R501_ _15	
RMS Forward Current	$I_{F(rms)}$	160	236	Amperes
Average Forward Current	$I_{F(av)}$	100	150	Amperes
One-half Cycle Surge Current	$I_{FSM}$	2300	3000	Amperes
3 Cycle Surge Current	$I_{FSM}$	1875	2375	Amperes
10 Cycle Surge Current	$I_{FSM}$	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	R500_ _10,	R500_ _15,	Units
			R501_ _10	R501_ _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)	$V_{RRM}$		1600	1600	Volts
Non-rep. Trans. Peak Rev. Voltage (Rated Limit)	$V_{RSM}$	$t_p \leq 5.0\text{msec}$	1700	1700	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, Junction to Case	$R_{\theta(j-c)}$		0.28	0.28	°C/Watt
Maximum Resistance, Case to Sink (Lubricated)	$R_{\theta(c-s)}$		0.20	0.20	°C/Watt

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