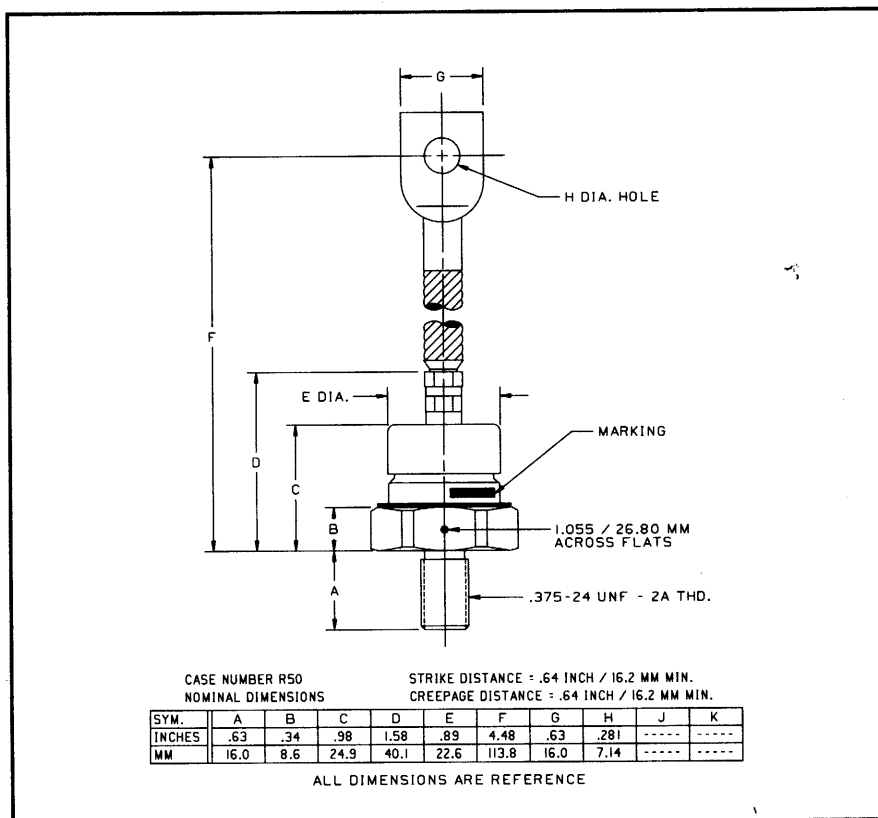


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

General Purpose Rectifier
100-150 Amperes Average
1600 Volts



R500/R501 (Outline Drawing)



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

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

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} (μ 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

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Absolute Maximum Ratings

Characteristics	Symbol	R500_10, R501_10	R500_15, R501_15	Units
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 ² 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		120	120	in-lb

Electrical and Thermal Characteristics

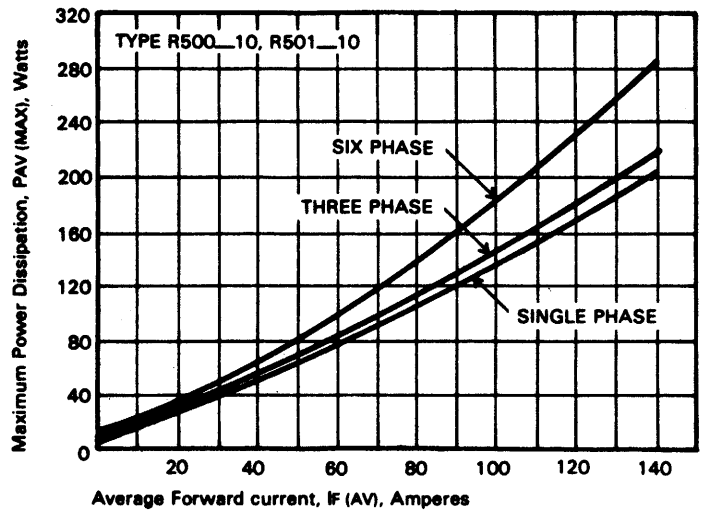
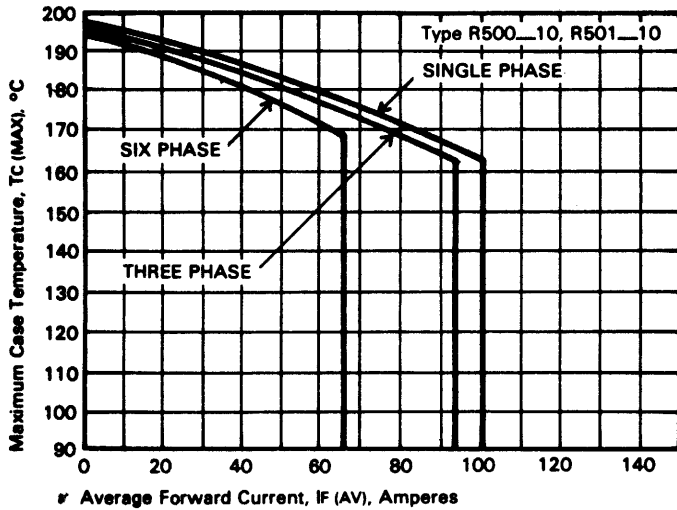
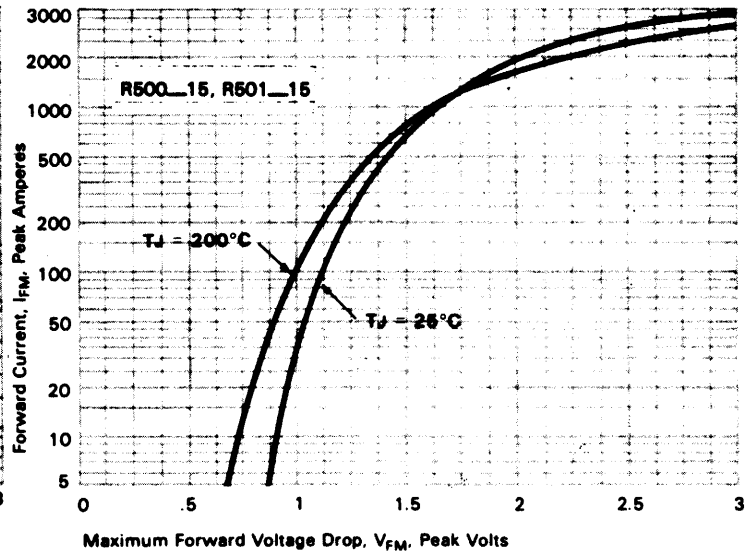
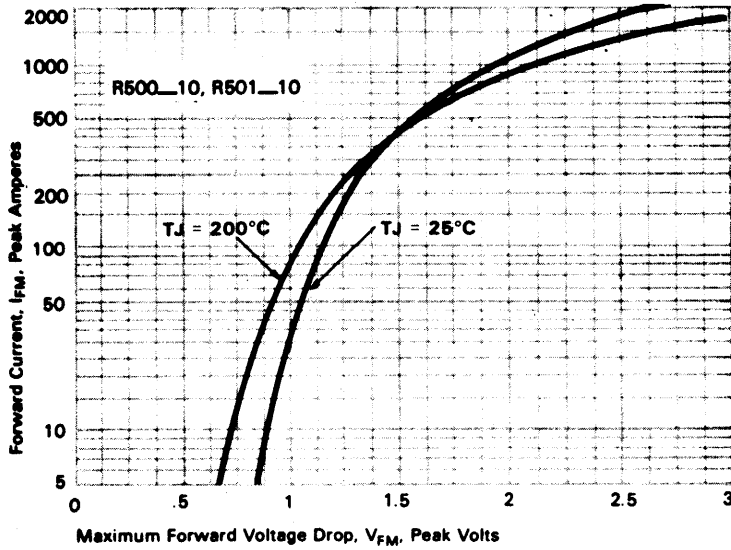
Characteristics	Symbol	Test Conditions	R500_10, R501_10	R500_15, R501_15	Units
Current - Conducting State Maximums					
Forward Voltage Drop	V_{FM}	$T_j = 25^\circ\text{C}$, $I_{FM} = 470\text{A}$	1.55	1.40	Volts
Voltage - Blocking State Maximums					
Repetitive Peak Reverse Voltage (Rated Limit)	V_{RRM}		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
Switching					
Typical Reverse Recovery Time	t_{rr}	$I_{FM} = 314\text{A}$, $t_p = 40\mu\text{sec}$, $di_F/dt = 25\text{A}/\mu\text{sec}$, $T_C = 25^\circ\text{C}$	7	7	μsec
Thermal					
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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R500/R501

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