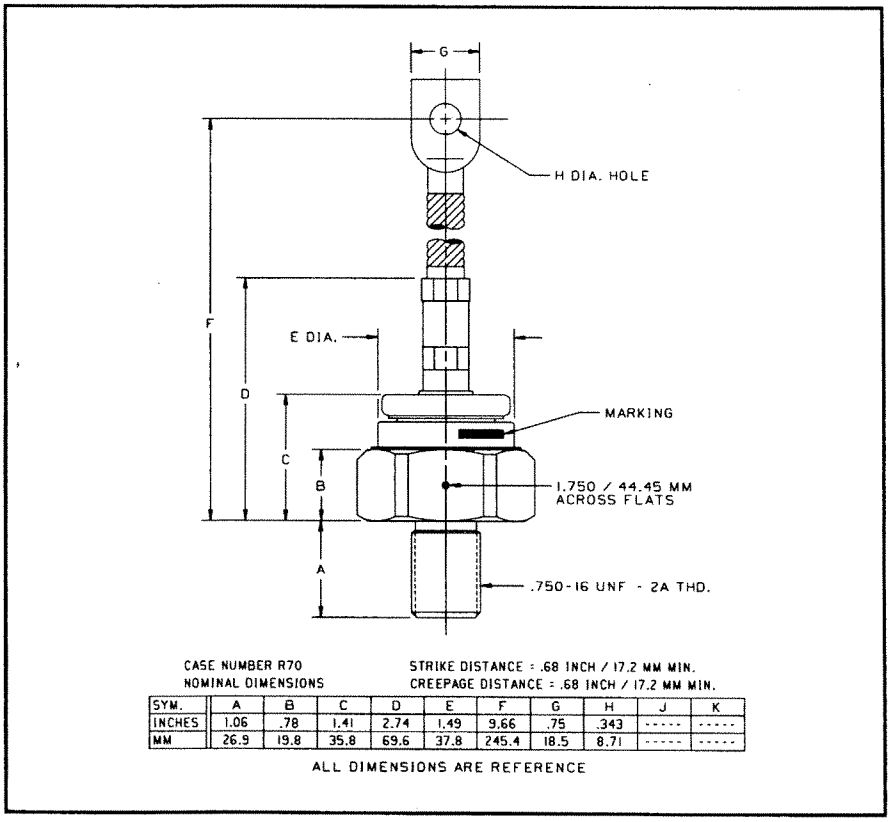
Powerex, Inc., 173 Pavilion Lane, Youngwood, PA 15697 (724) 925-7272 www.pwrx.com

General Purpose Rectifier

300-550 Amperes Average
4400 Volts



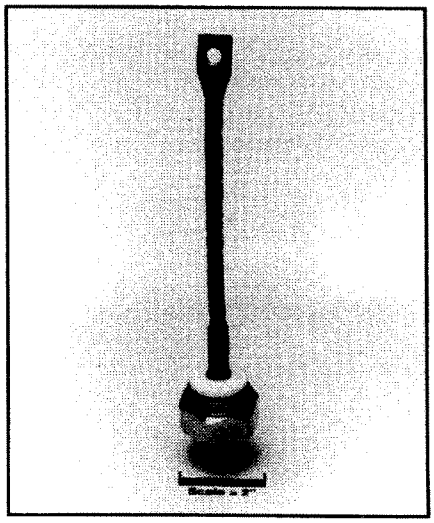
CASE NUMBER R70
NOMINAL DIMENSIONS

STRIKE DISTANCE = .68 INCH / 17.2 MM MIN.
CREEPAGE DISTANCE = .68 INCH / 17.2 MM MIN.

SYM.	A	B	C	D	E	F	G	H	J	K
INCHES	1.06	.78	1.41	2.74	1.49	9.66	.75	.343	-----	-----
MM	26.9	19.8	35.8	69.6	37.8	245.4	18.5	8.71	-----	-----

ALL DIMENSIONS ARE REFERENCE

R700/R701 (Outline Drawing)



R700/R701
General Purpose Rectifier
300-550 Amperes Average, 4400 Volts

Features:

- ☐ Standard and Reverse Polarities
- ☐ Stud Top Terminals Available
- ☐ Flat Base, Flange Mounted Design Available
- ☐ High Surge Current Ratings
- ☐ High Rated Blocking Voltages
- ☐ Electrical Selection for Parallel and Series Operation
- ☐ High Voltage Creepage and Strike Paths
- ☐ Compression Bonded Encapsulation

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 V_{RRM} (Volts)	Code	Current $I_{F(av)}$ (A)	Code	Recovery Time t_{rr} (μsec)	Code	Recovery Time Circuit	Code	Leads Case	Code
R700 Std. Polarity	100	01	300	03	15	X	JEDEC	X	R70	UA
	200	02								
	400	04	450	04	11	X				
	600	06								
R701 (Rev. Polarity)	800	08	550	05	9 (Typ.)	X				
	1000	10								
	1200	12								
	1400	14								
	1600	16								
	1800	18								
	2000	20								
	2200	22								
	2400	24								
	2600	26								
	2800	28								
	3000	30								
	3500	35								
	4000	40								
	4400	44								

Example: Type R700 rated at 300A average with V_{RRM} = 4400V, and standard flexible lead, order as:

Type				Voltage		Current		Time	Circuit	Leads	
R	7	0	0	4	4	0	3	X	X	U	A

Revision Date: 04/19/2006

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

R700/R701
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300-550 Amperes Average, 4400 Volts

Absolute Maximum Ratings

Characteristics	Symbol	R700_ _03, R701_ _03	R700_ _04, R701_ _04	R700_ _05, R701_ _05	Units
RMS Forward Current	$I_{F(rms)}$	470	700	865	Amperes
Average Forward Current	$I_{F(av)}$	300	450	550	Amperes
One-half Cycle Surge Current	I_{FSM}	7000	8500	10000	Amperes
3 Cycle Surge Current	I_{FSM}	5250	6400	7500	Amperes
10 Cycle Surge Current	I_{FSM}	4200	5100	6000	Amperes
I^2t (for Fusing), Times = 8.3 milliseconds	I^2t	204000	266000	416500	A^2sec
Storage Temperature	T_{stg}	-65 to +200	-65 to +200	-65 to +200	°C
Operating Temperature	T_j	Up to 1400V -65 to +200	1400V to 2200V -65 to +175	2200V to 4400V -65 to +150	°C
Mounting Torque		360	360	360	in-lb

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Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	R700_ _03, R701_ _03	R700_ _04, R701_ _04	R700_ _05, R701_ _05	Units
Current - Conducting State Maximums						
Forward Voltage Drop	V_{FM}	T_j = 25°C, I_{FM} = 1500A	2.15	1.60	1.20	Volts
Voltage - Blocking State Maximums						
Repetitive Peak Reverse Voltage (Rated Limit)	V_{RRM}		4400	2600	1600	Volts
Non-rep. Trans. Peak Rev. Voltage (Rated Limit)	V_{RSM}	t ≤ 5.0msec	4600	2800	1800	Volts
Reverse Leakage Current	I_{RRM}	T_j at max., V_{RRM} Rated	50	50	50	mA
Switching						
Typical Reverse Recovery Time	t_{rr}	I_{FM} = 1500A, t_p = 190µsec, di_R/dt = 25A/µsec, T_C = 25°C	9	11	15	µsec
Thermal						
Maximum Resistance, Junction to Case	$R_{\theta(j-c)}$		0.12	0.12	0.12	°C/Watt
Maximum Resistance, Case to Sink (Lubricated)	$R_{\theta(c-s)}$		0.04	0.04	0.04	°C/Watt

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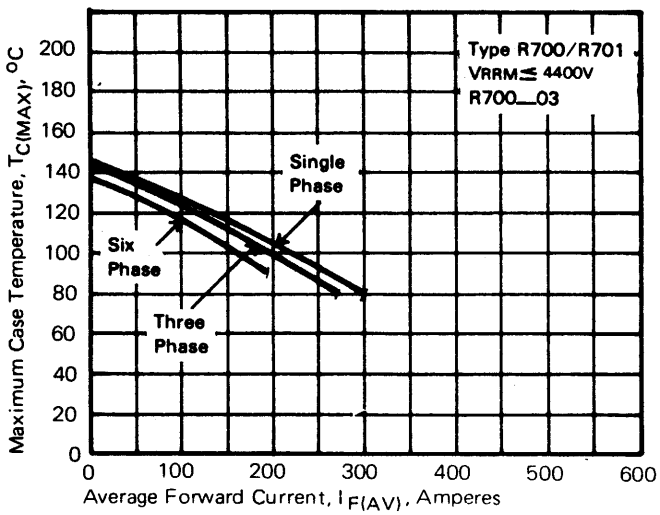

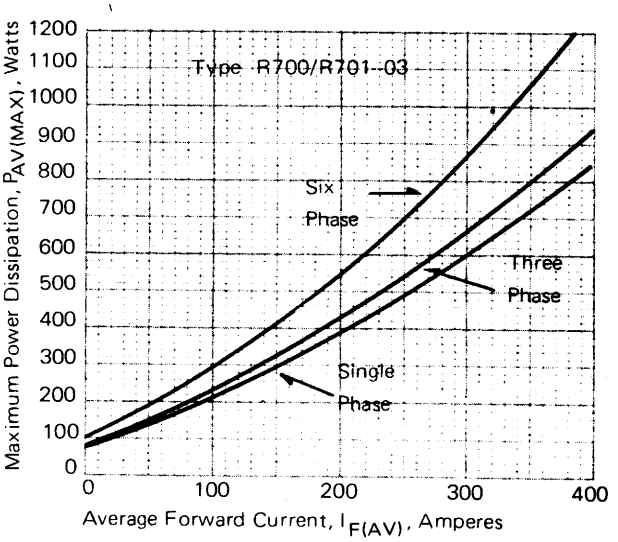

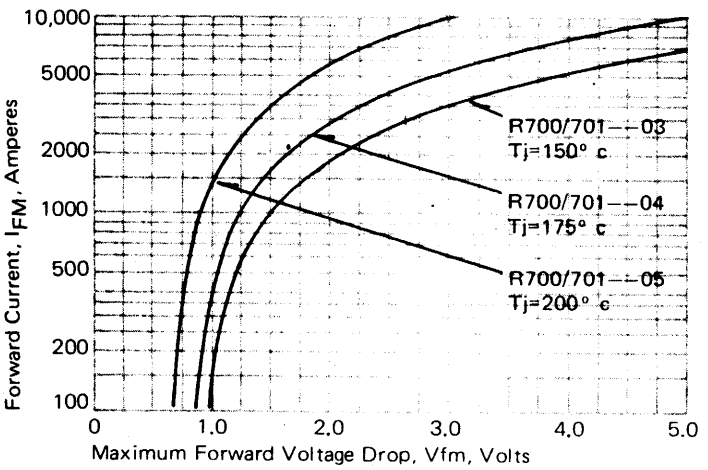

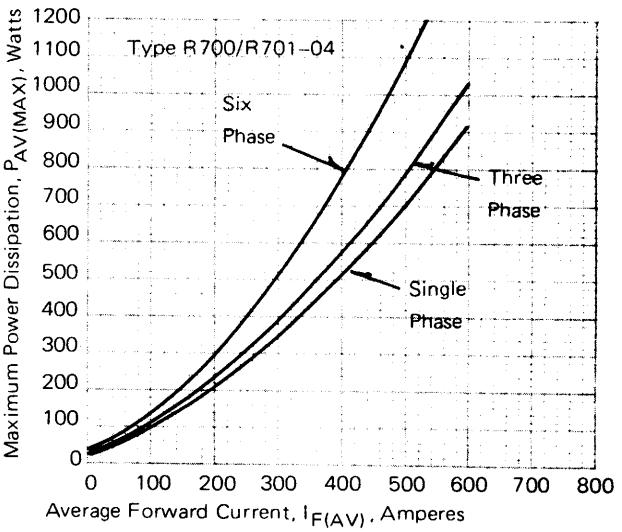

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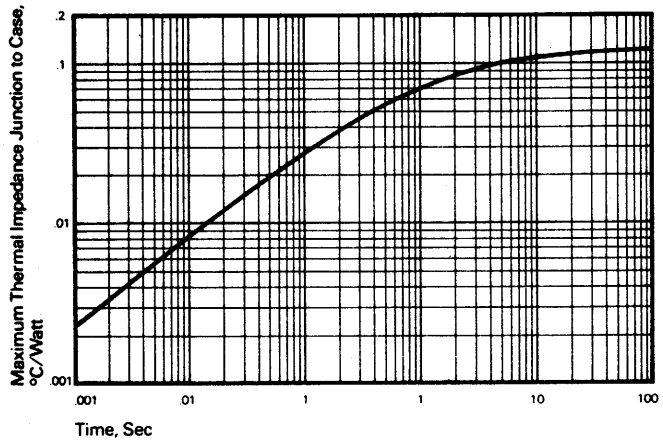

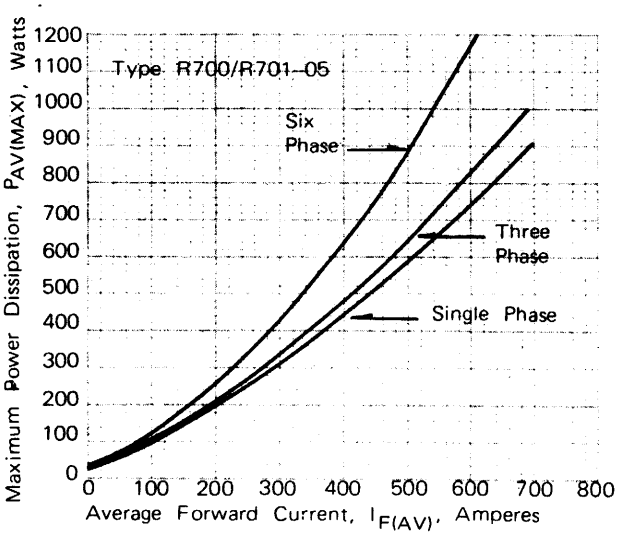

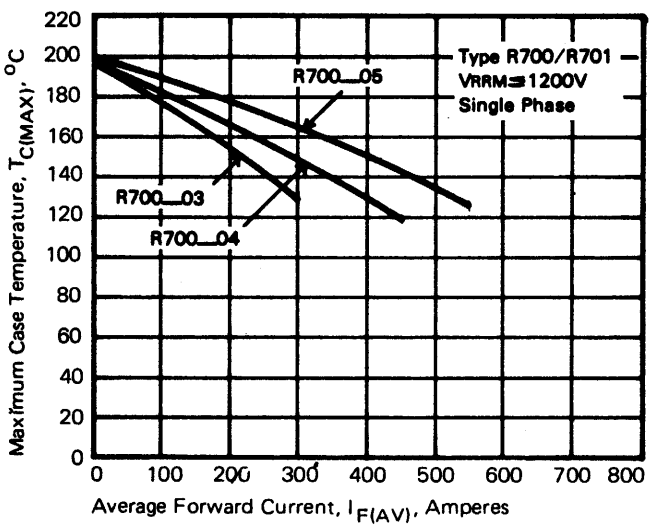

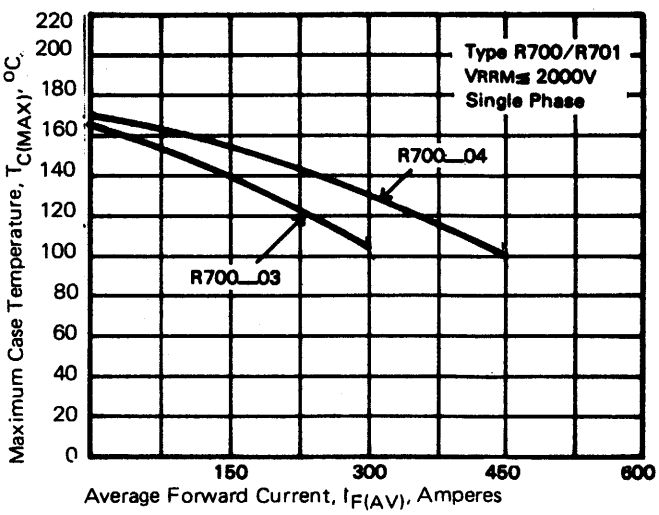

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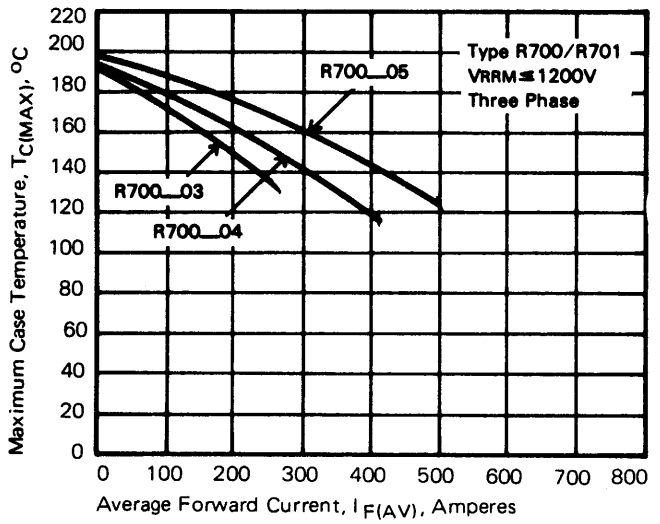

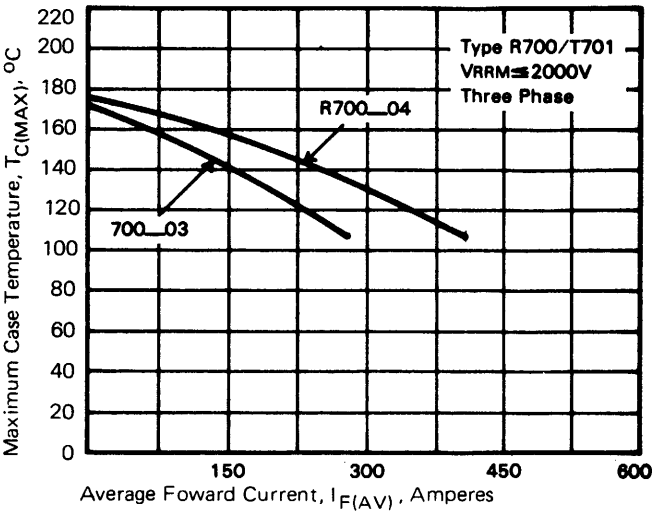

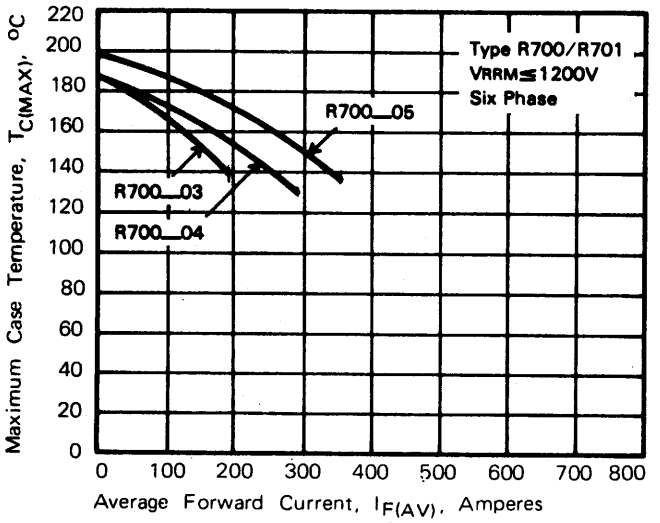

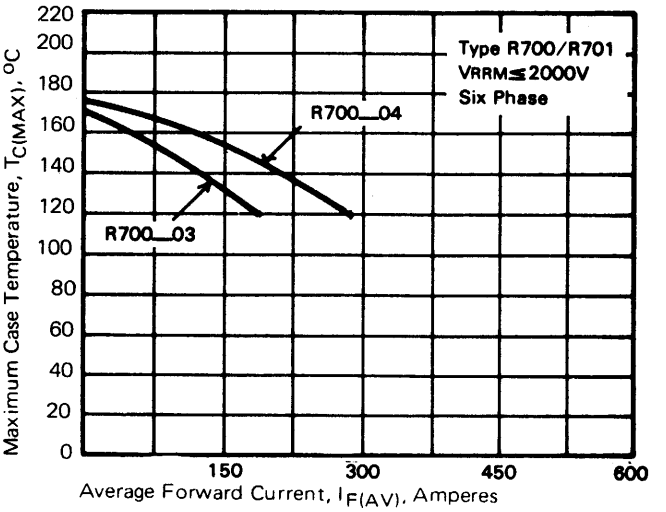

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