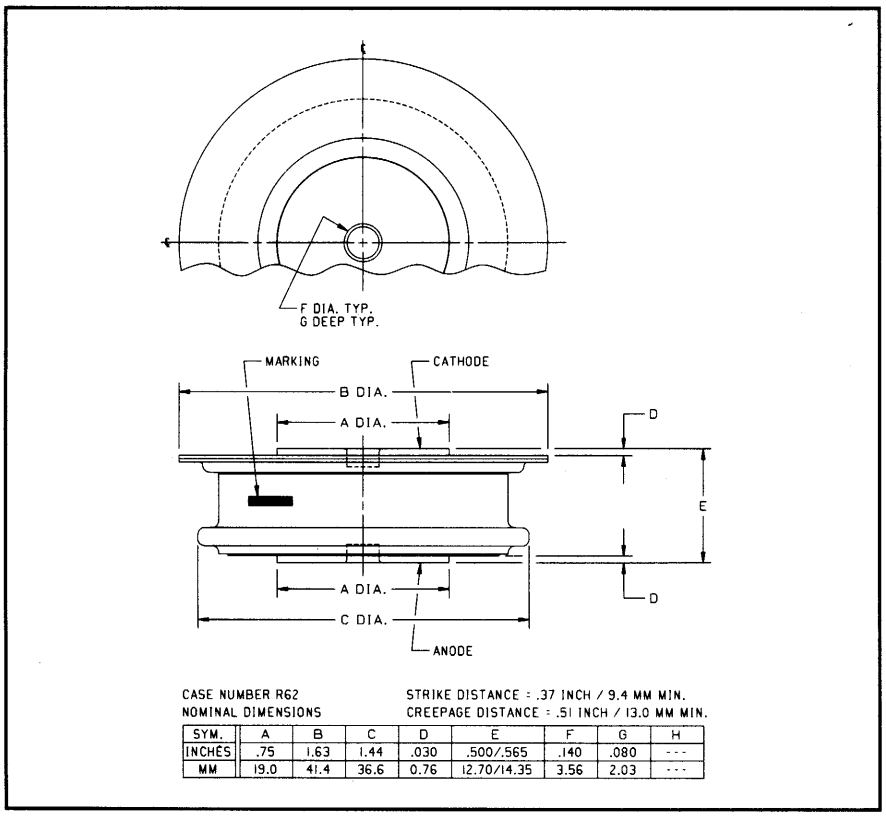
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

General Purpose Rectifier

300-500 Amperes
2400 Volts

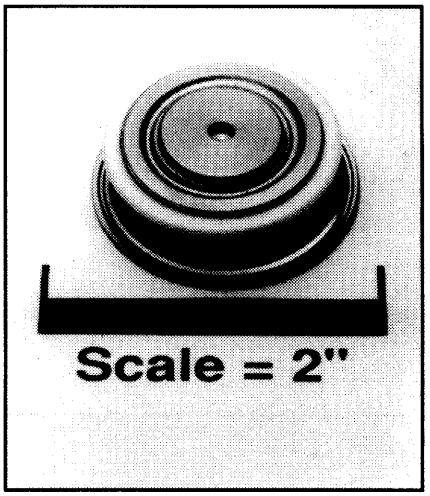


CASE NUMBER R62
NOMINAL DIMENSIONS

STRIKE DISTANCE = .37 INCH / 9.4 MM MIN.
CREEPAGE DISTANCE = .51 INCH / 13.0 MM MIN.

SYM.	A	B	C	D	E	F	G	H
INCHES	.75	1.63	1.44	.030	.500/.565	.140	.080	---
MM	19.0	41.4	36.6	0.76	12.70/14.35	3.56	2.03	---

R620 (Outline Drawing)



R620
General Purpose Rectifier
300-500 Amperes, 2400 Volts

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
R620	200	02	300	30	11	X	JEDEC	X	R62	OO
	400	04								
	600	06	400	40	9	X				
	800	08								
	1000	10	500	50	6	X				
	1200	12			(Typical)					
	1400	14								
	1600	16								
	1800	18								
	2000	20								
	2200	22								
	2400	24								

Example: Type R620 rated at 500A average with V_{RRM} = 2400V

Type				Voltage		Current		Time	Circuit	Leads	
R	6	2	0	2	4	5	0	X	X	O	O

Features:

- ☐ High Surge Current Ratings
- ☐ High Rated Blocking Voltages
- ☐ Special Electrical Selection for Parallel and Series Operation
- ☐ Single or Double-sided Cooling
- ☐ Long Creepage and Strike Paths
- ☐ Hermetic Seal

Applications:

- ☐ Rectification
- ☐ Free Wheeling Diode
- ☐ Battery Chargers
- ☐ Resistance Welding

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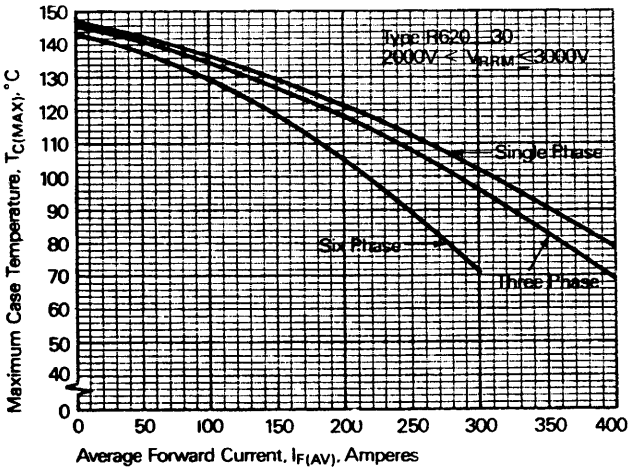
R620
General Purpose Rectifier
300-500 Amperes, 2400 Volts

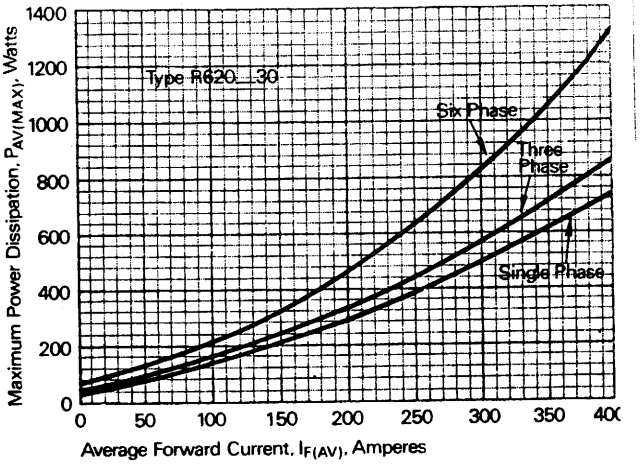
Absolute Maximum Ratings

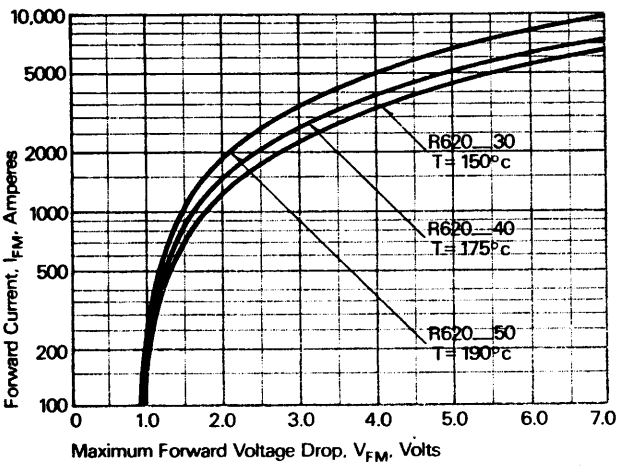
Characteristics	Symbol	R620_ _30	R620_ _40	R620_ _50	Units
RMS Forward Current	$I_{F(rms)}$	470	625	785	Amperes
Average Forward Current	$I_{F(av)}$	300	400	500	Amperes
One-half Cycle Surge Current	I_{FSM}	5500	6000	6500	Amperes
3 Cycle Surge Current	I_{FSM}	4300	4700	5050	Amperes
10 Cycle Surge Current	I_{FSM}	3300	3600	3900	Amperes
I^2t (for Fusing), Times = 8.3 milliseconds	I^2t	125000	150000	175000	A^2sec
Max. I^2t of Package (t = 8.3ms)	I^2t	20×10^6	20×10^6	20×10^6	A^2sec
Storage Temperature	T_{stg}	-65 to +190	-65 to +190	-65 to +190	°C
Operating Temperature	T_j	Up to 1400V	1400V to 2200V	2200V to 2600V	°C
		-65 to +190	-65 to +175	-65 to +150	
Mounting Force		1000 to 1400	1000 to 1400	1000 to 1400	lbs

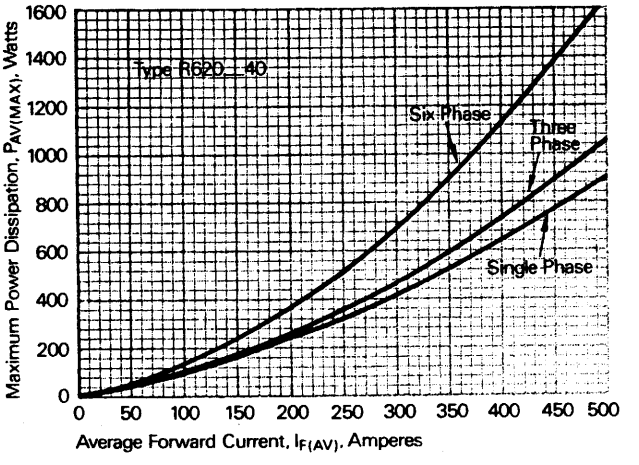
Electrical and Thermal Characteristics

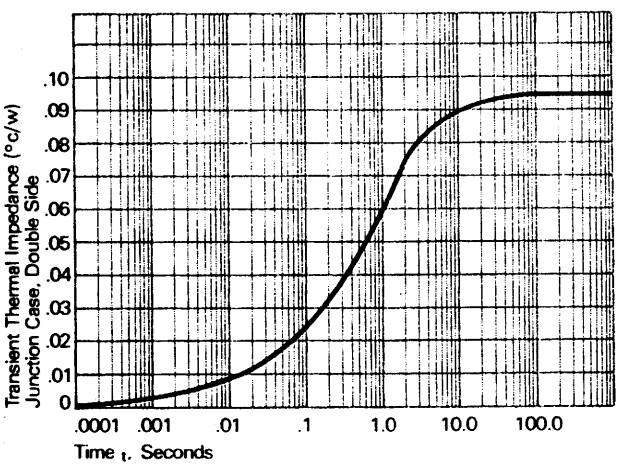
Characteristics	Symbol	Test Conditions	R620_ _30	R620_ _40	R620_ _50	Units
Current - Conducting State Maximums						
Forward Voltage Drop	V_{FM}	T_j = 25°C, I_{FM} = 800A	1.70	1.50	1.40	Volts
Voltage - Blocking State Maximums						
Repetitive Peak Reverse Voltage (Rated Limit)	V_{RRM}		2400	2400	2400	Volts
Non-rep. Trans. Peak Rev. Voltage (Rated Limit)	V_{RSM}	t ≤ 5.0µsec	2600	2600	2600	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} = 785A, t_p = 100µsec, di_R/dt = 25A/msec, T_C = 25°C	Up to 1400V 6	1400V to 2200V 9	2200V to 2600V 11	µsec
Thermal						
Maximum Resistance, Double-sided Cooling, Junction to Case	$R_{\theta(j-c)}$		0.095	0.095	0.095	°C/Watt
Maximum Resistance, Case to Sink (Lubricated)	$R_{\theta(c-s)}$		0.02	0.02	0.02	°C/Watt

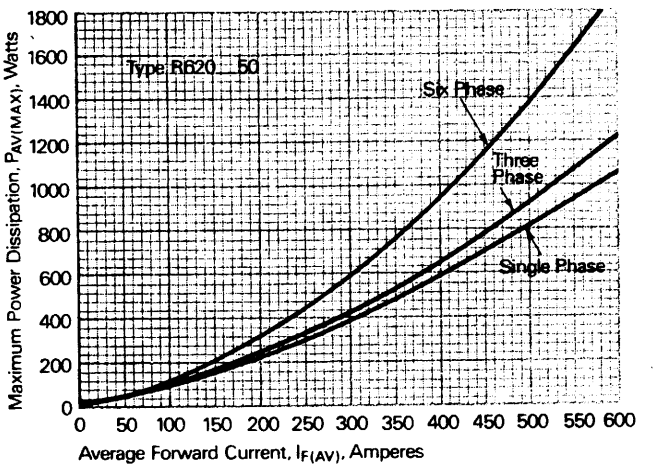

Type R620__30
2000V ≤ VRRM ≤ 3000V
Single Phase
Six Phase
Three Phase
Maximum Case Temperature, TC(MAX), °C
Average Forward Current, IF(AV), Amperes

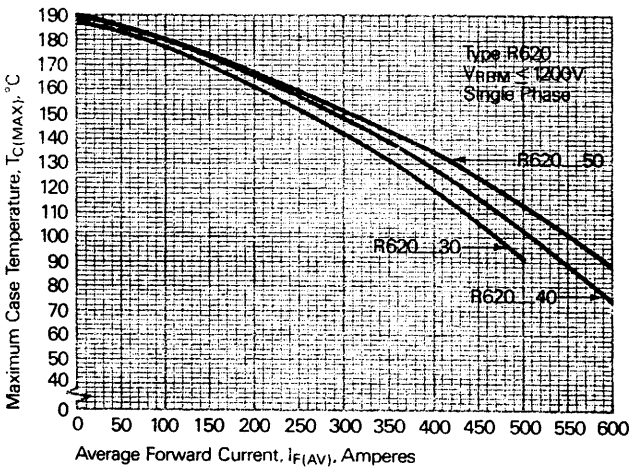

Type R620__30
Six Phase
Three Phase
Single Phase
Maximum Power Dissipation, PAV(MAX), Watts
Average Forward Current, IF(AV), Amperes

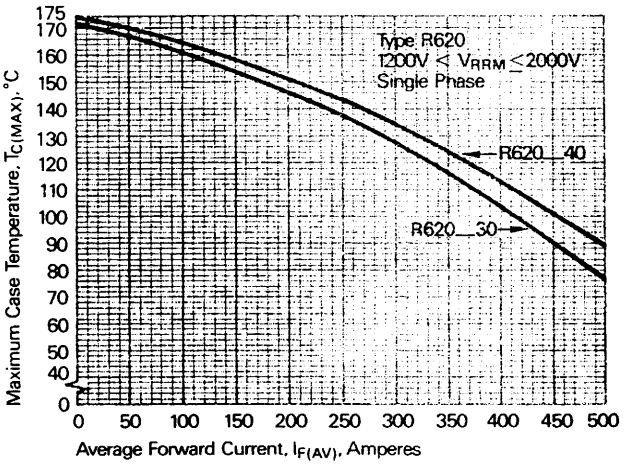

R620__30
T= 150°C
R620__40
T= 175°C
R620__50
T= 190°C
Forward Current, IFM, Amperes
Maximum Forward Voltage Drop, VFM, Volts

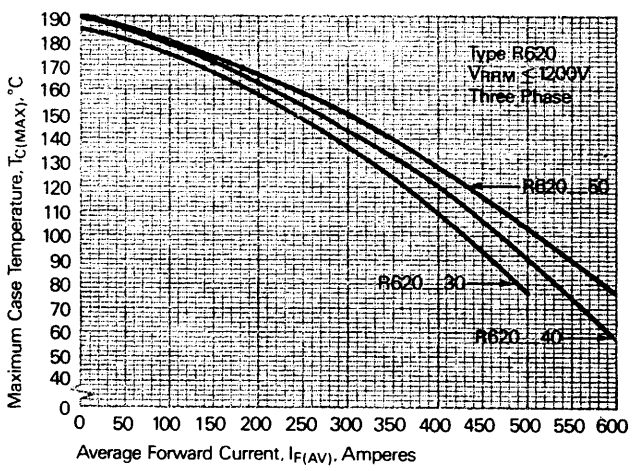

Type R620__40
Six Phase
Three Phase
Single Phase
Maximum Power Dissipation, PAV(MAX), Watts
Average Forward Current, IF(AV), Amperes

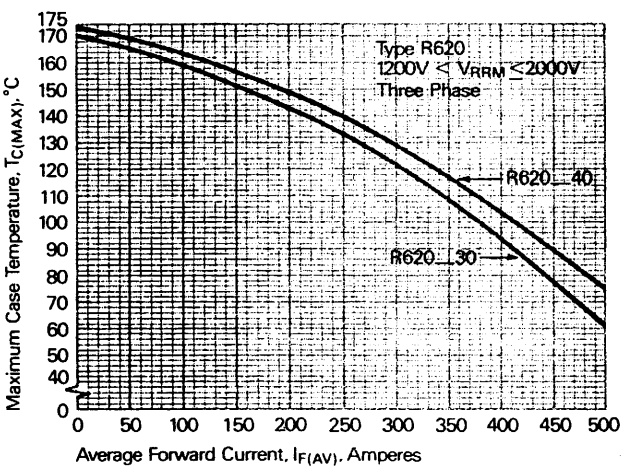

Transient Thermal Impedance (°c/w)
Junction Case, Double Side
Time t, Seconds

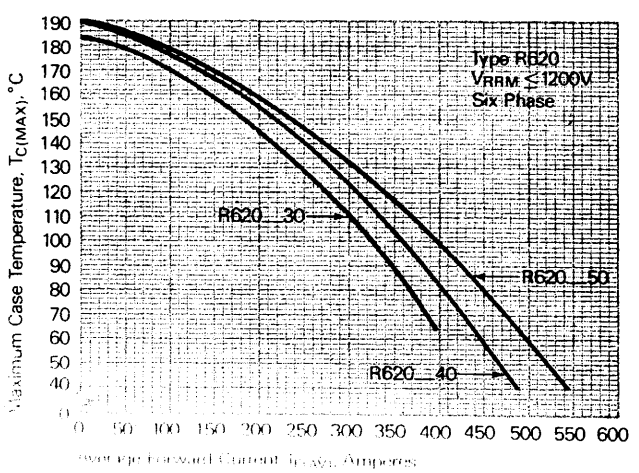

Type R620__50
Six Phase
Three Phase
Single Phase
Maximum Power Dissipation, PAV(MAX), Watts
Average Forward Current, IF(AV), Amperes

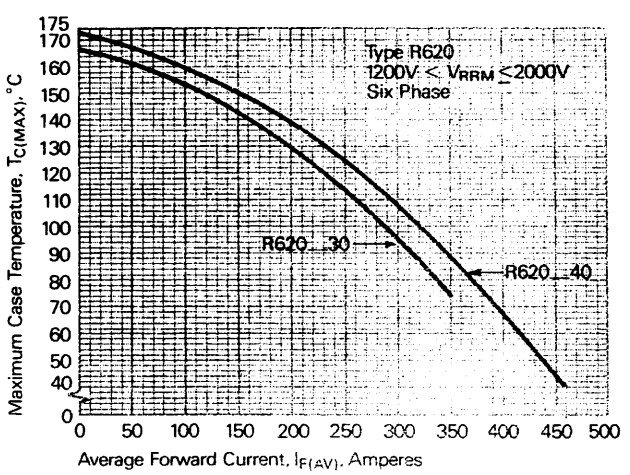

Type R620
VRRM ≤ 1200V
Single Phase
R620_50
R620_30
R620_40
Maximum Case Temperature, TC(MAX), °C
Average Forward Current, IF(AV), Amperes


Type R620
1200V < VRRM ≤ 2000V
Single Phase
R620_40
R620_30
Maximum Case Temperature, TC(MAX), °C
Average Forward Current, IF(AV), Amperes


Type R620
VRRM ≤ 1200V
Three Phase
R620_50
R620_30
R620_40
Maximum Case Temperature, TC(MAX), °C
Average Forward Current, IF(AV), Amperes


Type R620
1200V < VRRM ≤ 2000V
Three Phase
R620_40
R620_30
Maximum Case Temperature, TC(MAX), °C
Average Forward Current, IF(AV), Amperes


Type R620
VRRM ≤ 1200V
Six Phase
R620_30
R620_50
R620_40
Maximum Case Temperature, TC(MAX), °C
Average Forward Current, IF(AV), Amperes


Type R620
1200V < VRRM ≤ 2000V
Six Phase
R620_30
R620_40
Maximum Case Temperature, TC(MAX), °C
Average Forward Current, IF(AV), Amperes