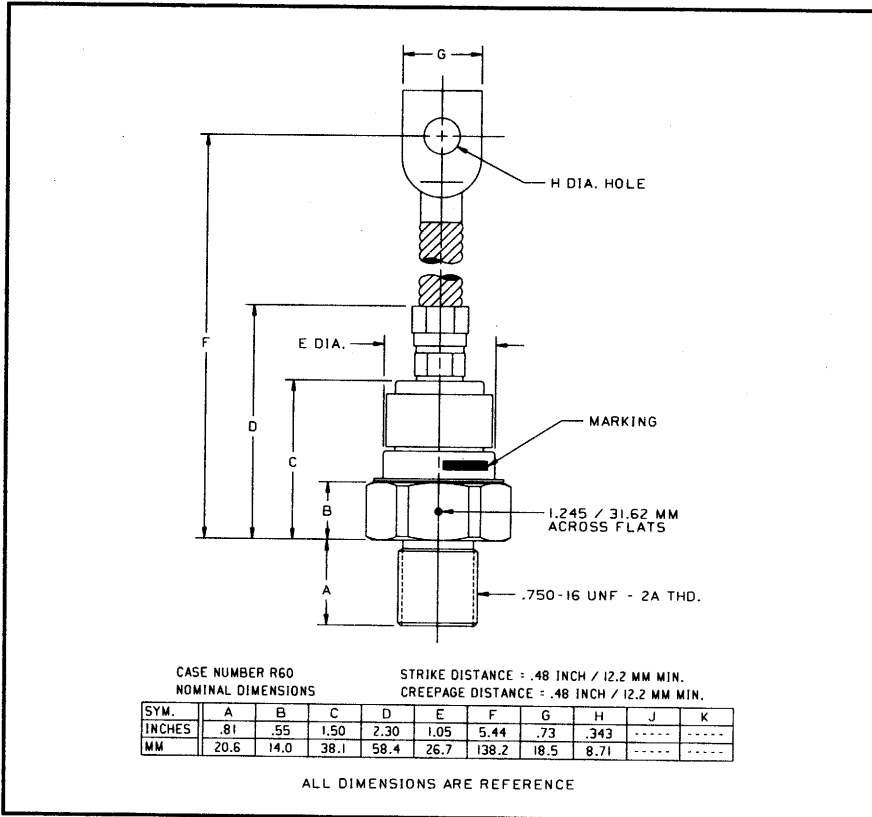


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

Fast Recovery Rectifier
 220 Amperes Average
 1600 Volts



R602__22/R603__22 (Outline Drawing)



R602__22/R603__22
 Fast Recovery Rectifier
 220 Amperes Average, 1600 Volts

Ordering Information:

Select the complete part number you desire from the following table:

Type	Voltage		Current		Recovery Time		Leads	
	V _{RRM} (Volts)	Code	I _{F(av)} (A)	Code	t _{rr} (nsec)	Code	Case	Code
R602 (Standard Polarity)	400	04	220	22	500	PS	DO-9	YA
	600	06						
	800	08						
	1000	10						
R603 (Reverse Polarity)	1200	12						
	1400	14						
	1600	16						

Example: Type R602 rated at 220A average with V_{RRM} = 1600V,
 Recovery Time = 500nsec, order as:

Type	Voltage	Current	Time	Leads
R 6 0 2	1 6	2 2	PS	Y A

Features:

- Fast Recovery Times
- Soft Recovery Characteristics
- Standard and Reverse Polarities
- Flag Lead and Stud Top Terminals Available
- High Surge Current Ratings
- High Rated Blocking Voltages
- Special Electrical Selection for Parallel and Series Operation
- Glazed Ceramic Seal Gives High Voltage Creepage and Strike Paths
- Special Selection of Recovery Characteristics Available

Applications:

- Inverters
- Choppers
- Transmitters
- Free Wheeling Diode

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

R602_22/R603_22
Fast Recovery Rectifier
 220 Amperes Average, 1600 Volts

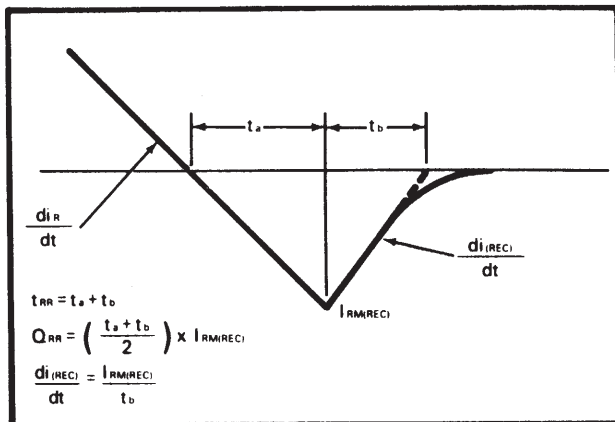
Absolute Maximum Ratings

Characteristics	Symbol	R602_22/R603_22	Units
RMS Forward Current	$I_F(\text{rms})$	345	Amperes
Average Forward Current	$I_F(\text{av})$	220	Amperes
One-half Cycle Surge Current	I_{FSM}	3500	Amperes
3 Cycle Surge Current	I_{FSM}	2700	Amperes
10 Cycle Surge Current	I_{FSM}	2100	Amperes
I^2t (for Fusing), Times ≥ 8.3 milliseconds	I^2t	51000	A^2sec
Storage Temperature	T_{stg}	-40 to +190	$^{\circ}\text{C}$
Operating Temperature	T_j	-40 to +150	$^{\circ}\text{C}$
Mounting Torque		360	in-lb

Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	R602_22/R603_22	Units
Current - Conducting State Maximums				
Forward Voltage Drop	V_{FM}	$T_j = 25^{\circ}\text{C}$, $I_{\text{FM}} = 800\text{A}$	2.75	Volts
Voltage - Blocking State Maximums				
Repetitive Peak Reverse Voltage (Rated Limit)	V_{RRM}		1600	Volts
Non-rep. Trans. Peak Rev. Voltage (Rated Limit)	V_{RSM}	$t \leq 5.0\text{msec}$	1800	Volts
Reverse Leakage Current, mA peak	I_{RRM}	T_j at max., $V_{\text{RRM}} = \text{Rated}$	50	mA
Switching				
Maximum Reverse Recovery Time	t_{rr}	$I_{\text{FM}} = 785\text{A}$, $t_p = 100\mu\text{sec}$, $di_{\text{F}}/dt = 25\text{A}/\mu\text{sec}$, $T_C = 25^{\circ}\text{C}$	500	nsec
Maximum Reverse Recovery Time	t_{rr}	$I_{\text{FM}} = 785\text{A}$, $t_p = 100\mu\text{sec}$, $di_{\text{F}}/dt = 25\text{A}/\mu\text{sec}$, $T_C = 150^{\circ}\text{C}$	1.1	μsec
Thermal				
Maximum Resistance, Junction to Case	$R_{\theta(j-c)}$		0.17	$^{\circ}\text{C}/\text{Watt}$
Maximum Resistance, Case to Sink (Lubricated)	$R_{\theta(c-s)}$		0.10	$^{\circ}\text{C}/\text{Watt}$

Reverse Recovery Wave Form



Transient Thermal Impedance Vs. Time

