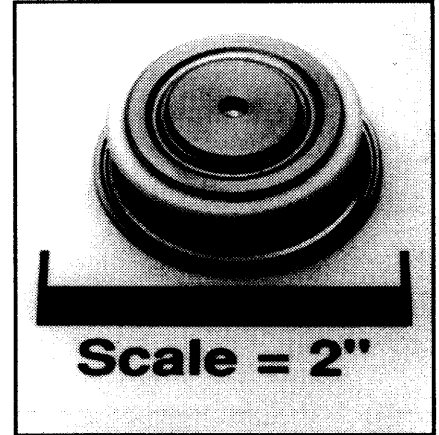
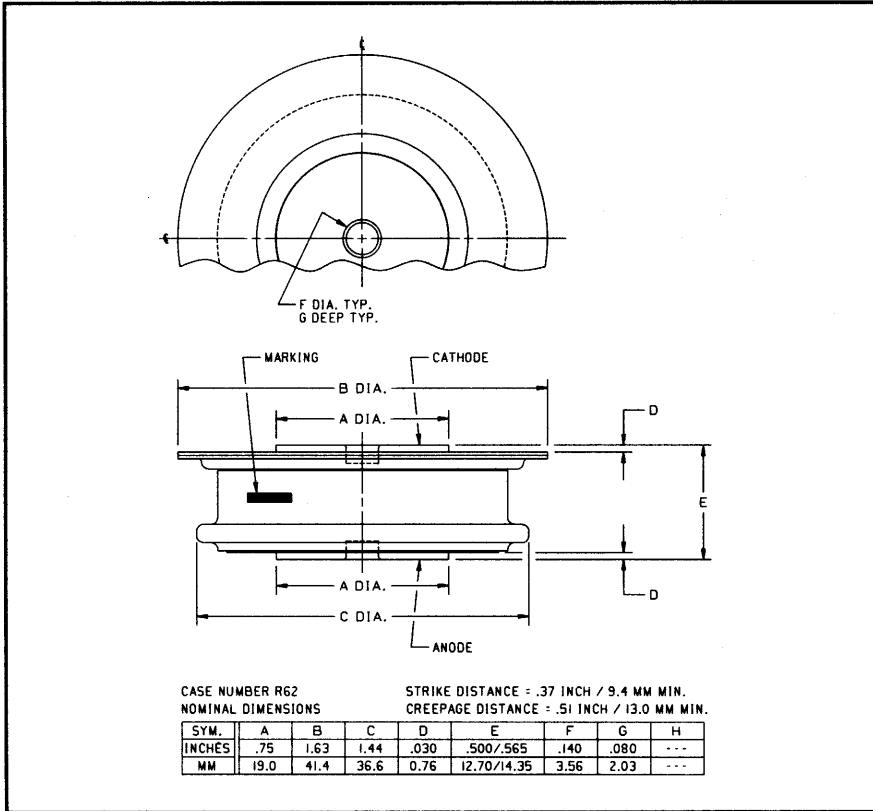


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 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**Silicon Rectifier**  
**400 Amperes Average**  
**1600 Volts**



**A390**  
**Silicon Rectifier**  
 400 Amperes Average, 1600 Volts

A390 (Outline Drawing)

**Features:**

- Soft Reverse Recovery
- High Reverse Blocking Voltage Capability
- Pressure Contacts
- Package Reversibility
- Rugged Glazed Ceramic Hermetic Package

**Applications:**

- Auction Diode
- DC Power Supplies

**Ordering Information:**

Select the complete five or six digit part number you desire from the table, i.e. A390PM is a 1600 Volt, 400 Ampere Silicon Rectifier.

Type	Voltage		Current
	V <sub>RRM</sub>	Code	I <sub>T(av)</sub>
A390	200	B	400
	400	D	
	600	M	
	800	N	
	1000	P	
	1200	PB	
	1400	PD	
1600	PM		



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**A390**  
**Silicon Rectifier**  
 400 Amperes Average, 1600 Volts

### Absolute Maximum Ratings

Characteristics	Symbol	A390	Units
RMS Forward Current	$I_{F(rms)}$	628	Amperes
Average Forward Current	$I_{F(av)}$	400	Amperes
One Cycle Surge Current	$I_{FSM}$	7000	Amperes
$i^2t$ (for Fusing), Times $\geq 1.0$ milliseconds	$i^2t$	80000	$A^2sec$
Storage Temperature	$T_{stg}$	-40 to +200	$^{\circ}C$
Operating Temperature	$T_j$	-40 to +200	$^{\circ}C$
Mounting Force		800 $\pm$ 10%	lbs
		3.56 $\pm$ 10%	KN

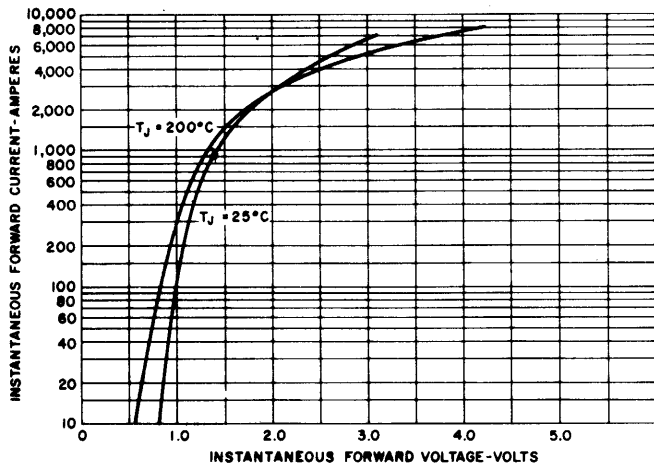
### Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	A390	Units
<b>Current - Conducting State Maximums</b>				
Forward Voltage Drop	$V_{FM}$	$T_C = 144^{\circ}C$ , $I_{F(av)} = 400A, 1260A$ Peak	1.4	Volts
<b>Voltage - Blocking State Maximums</b>				
Repetitive Peak Reverse Voltage (Rated Limit)	$V_{RRM}$		1600	Volts
Non-rep. Trans. Peak Rev. Voltage (Rated Limit)	$V_{RSM}$	$V \leq 5.0msec$	1800	Volts
Reverse Leakage Current, mA peak	$I_{RRM}$	$T_j$ at max., $V_{RRM} =$ Rated	25	mA
<b>Thermal</b>				
Maximum Resistance, Junction to Case	$R_{\theta(j-c)}$		0.095	$^{\circ}C/Watt$

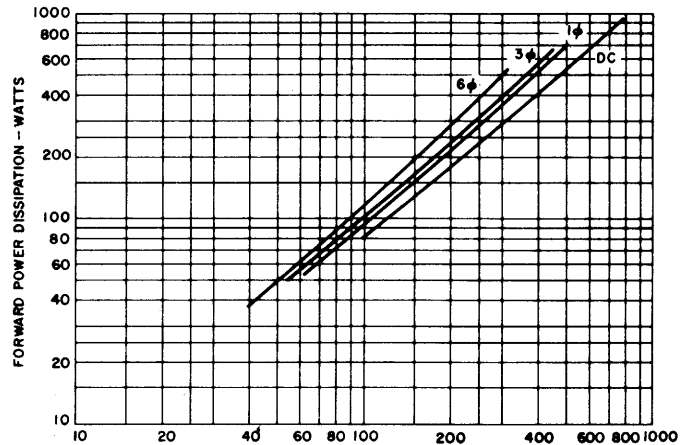


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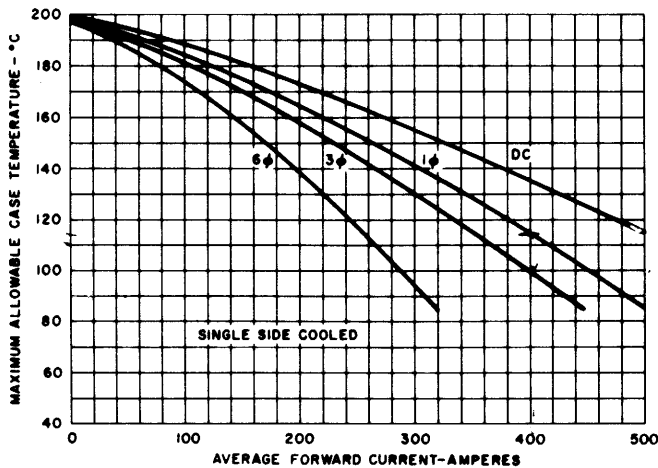
**A390**  
**Silicon Rectifier**  
 400 Amperes Average, 1600 Volts



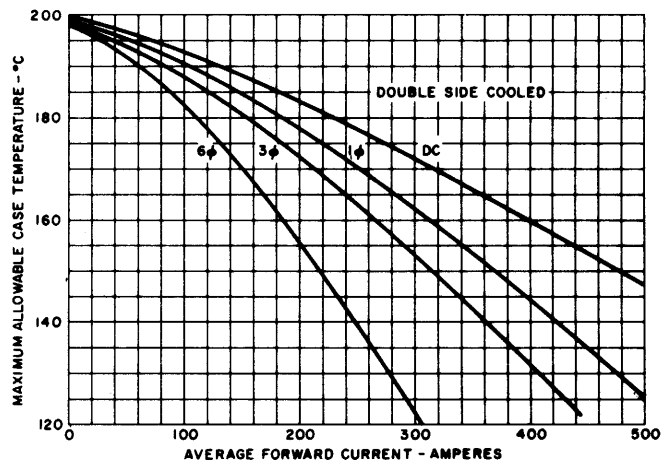
**MAXIMUM FORWARD CHARACTERISTICS**



**AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT**



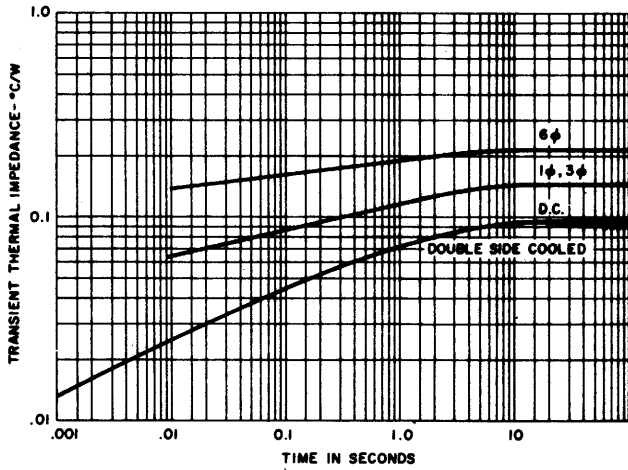
**MAXIMUM CASE TEMPERATURE VS. AVERAGE FORWARD CURRENT FOR SINGLE-SIDE COOLING**



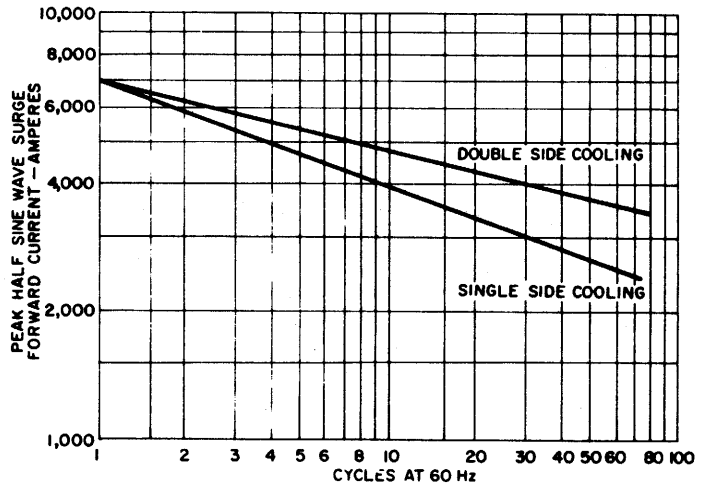
**MAXIMUM CASE TEMPERATURE VS. AVERAGE FORWARD CURRENT FOR DOUBLE-SIDE COOLING**

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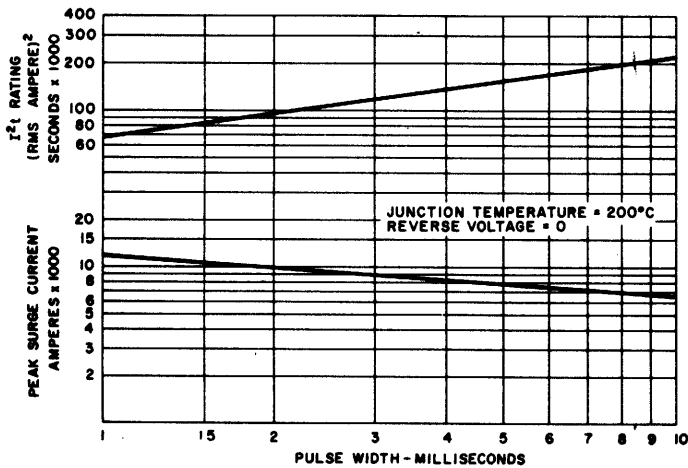
**A390**  
**Silicon Rectifier**  
 400 Amperes Average, 1600 Volts



**TRANSIENT THERMAL IMPEDANCE —  
 JUNCTION-TO-CASE**



**MAXIMUM SURGE CURRENT FOLLOWING  
 RATED LOAD CONDITIONS**



**SUB-CYCLE SURGE FORWARD CURRENT  
 AND  $I^2t$  RATING VS. PULSE TIME  
 FOLLOWING RATED LOAD CONDITIONS**