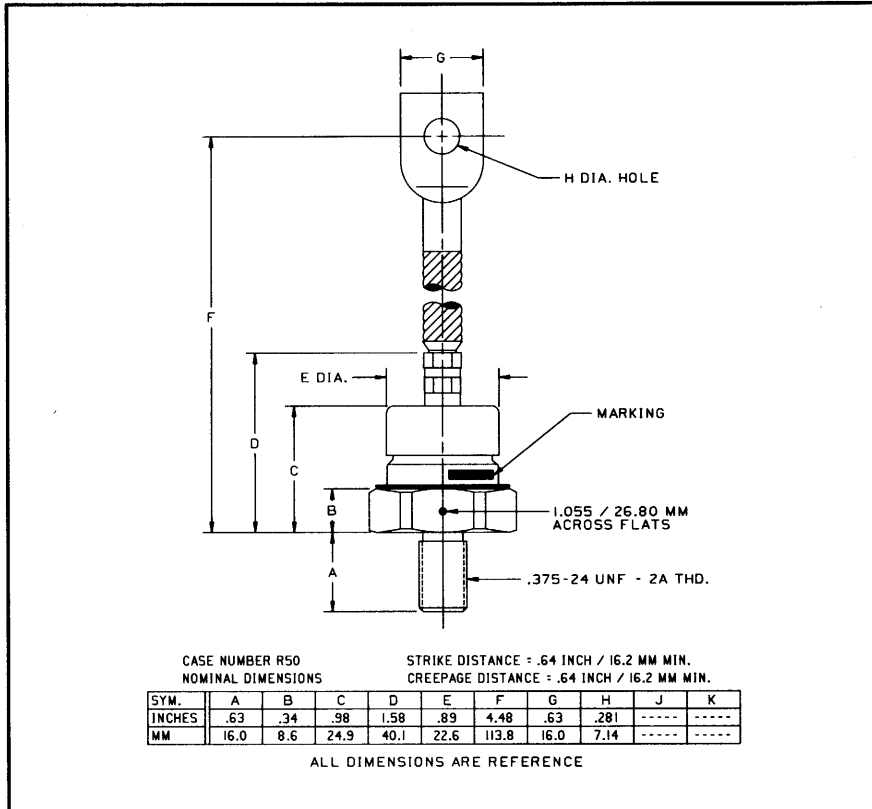


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**Silicon Rectifier**  
 100 Amperes Average  
 1600 Volts



**A170 (R)**  
**Silicon Rectifier**  
 100 Amperes Average, 1600 Volts

**A170 (R)** (Outline Drawing)

### Ordering Information:

Select the complete five or six digit part number you desire from the table, i.e. A170PM is a 1600 Volt, 100 Ampere Silicon Rectifier.

Type	Voltage		Current
	$V_{RRM}$	Code	$I_{T(av)}$
A170	200	B	100
	400	D	
	600	M	
	800	N	
	1000	P	
	1200	PB	
	1400	PD	
	1600	PM	

### Features:

- 1600V  $V_{RRM}$
- Hermetic Seal

### Applications:

- Transportation Equipment
- DC Motor Control
- DC Power Supplies



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

**A170 (R)**  
**Silicon Rectifier**  
 100 Amperes Average, 1600 Volts

### Absolute Maximum Ratings

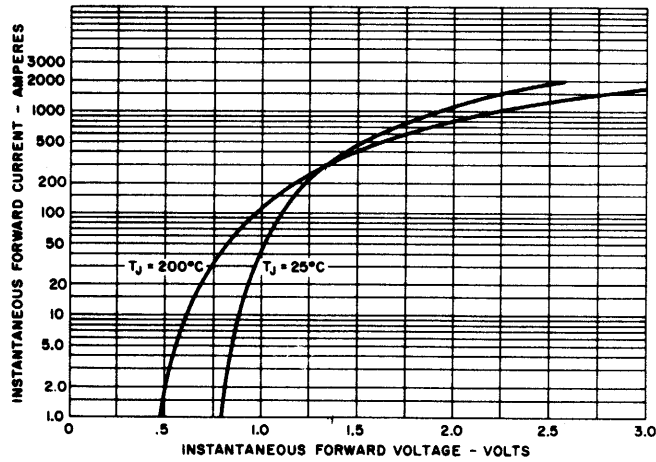
Characteristics	Symbol	A170 (R)	Units
RMS Forward Current	$I_{F(rms)}$	157	Amperes
Average Forward Current	$I_{F(av)}$	100	Amperes
One Cycle Surge Current	$I_{FSM}$	2500	Amperes
$I^2t$ (for Fusing), Times $\geq 1.0$ milliseconds	$I^2t$	15500	A <sup>2</sup> sec
Storage Temperature	$T_{stg}$	-40 to +200	°C
Operating Temperature	$T_j$	-40 to +200	°C
Mounting Torque (Lubricated)		90 to 100	in-lb
		10.1 to 11.3	N-m

### Electrical and Thermal Characteristics

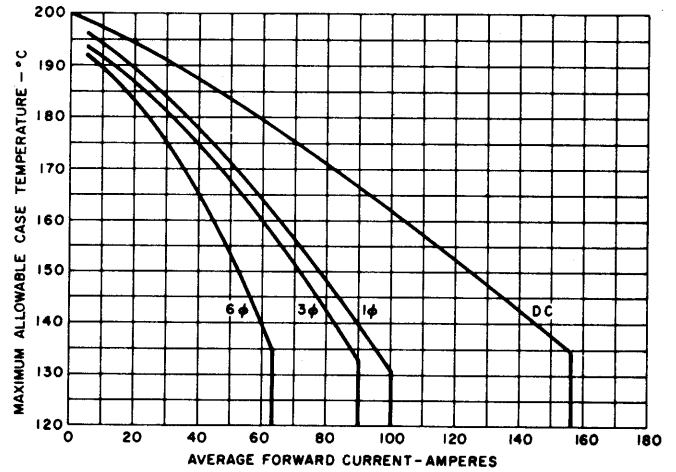
Characteristics	Symbol	Test Conditions	A170 (R)	Units
<b>Current - Conducting State Maximums</b>				
Forward Voltage Drop	$V_{FM}$	$T_C = 130^\circ\text{C}$ , $I_{F(av)} = 100\text{A}, 314\text{A Peak}$	1.3	Volts
<b>Voltage - Blocking State Maximums</b>				
Repetitive Peak Reverse Voltage (Rated Limit)	$V_{RRM}$		1600	Volts
Non-rep. Trans. Peak Rev. Voltage (Rated Limit)	$V_{RSM}$	$V \leq 5.0\text{msec}$	1800	Volts
Reverse Leakage Current, mA peak	$I_{RRM}$	$T_j$ at max., $V_{RRM} = \text{Rated}$	20	mA
<b>Thermal</b>				
Maximum Resistance, Junction to Case	$R_{\theta(j-c)}$		0.4	°C/Watt
1 $\phi$ and 3 $\phi$ (50 to 400 Hz)			0.55	°C/Watt
6 $\phi$ (50 to 400 Hz)			0.72	°C/Watt

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

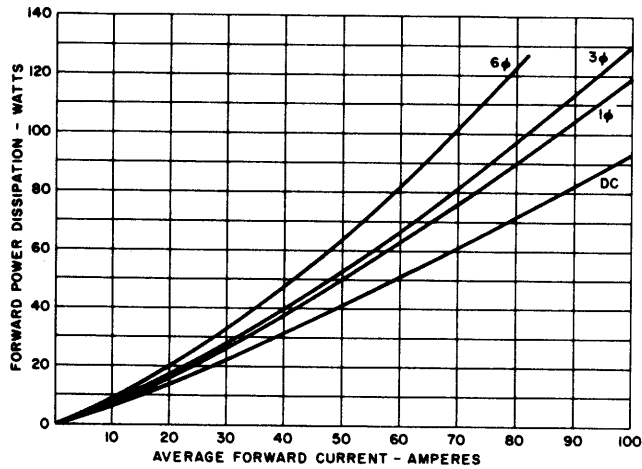
**A170 (R)**  
**Silicon Rectifier**  
 100 Amperes Average, 1600 Volts



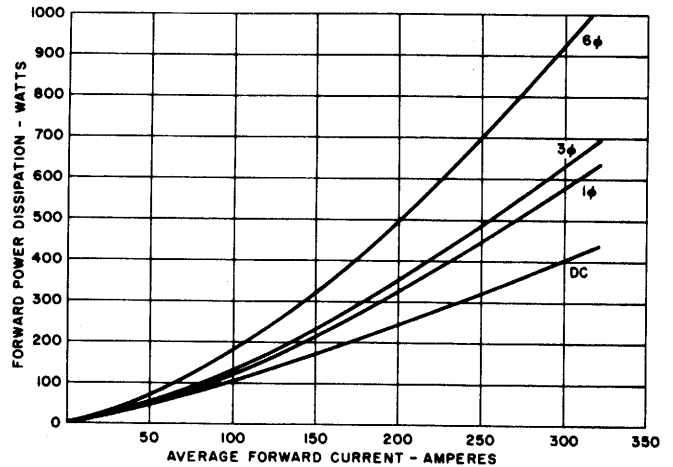
**MAXIMUM FORWARD CHARACTERISTICS**



**MAXIMUM CASE TEMPERATURE VS. AVERAGE FORWARD CURRENT**



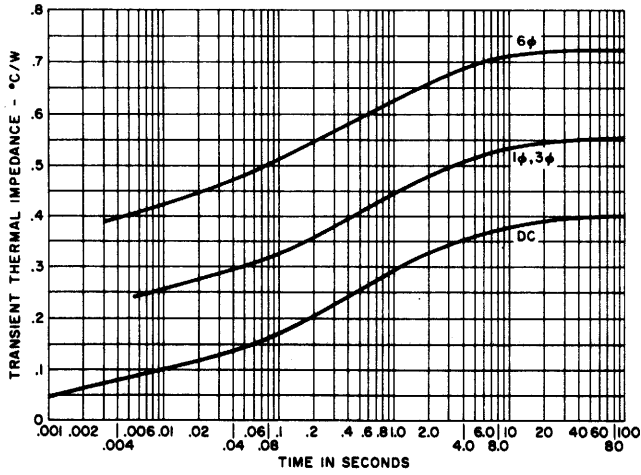
**AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT**



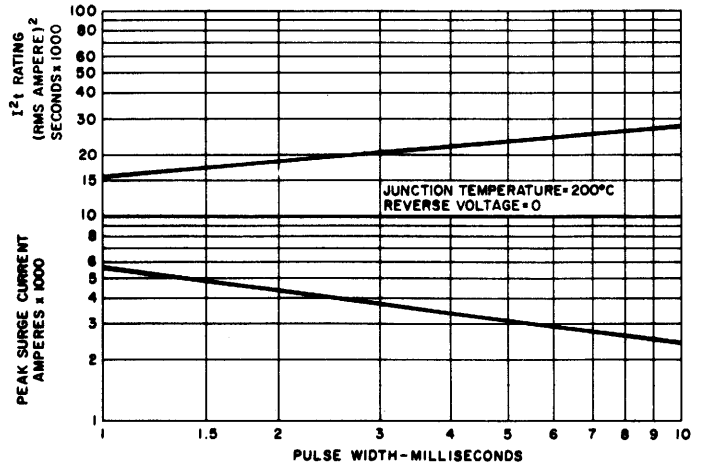
**AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT, HIGH LEVEL**

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

A170 (R)  
 Silicon Rectifier  
 100 Amperes Average, 1600 Volts



TRANSIENT THERMAL IMPEDANCE —  
 JUNCTION-TO-CASE



SUB-CYCLE SURGE FORWARD CURRENT  
 AND I<sup>2</sup>t RATING VS. PULSE TIME  
 FOLLOWING RATED LOAD CONDITIONS