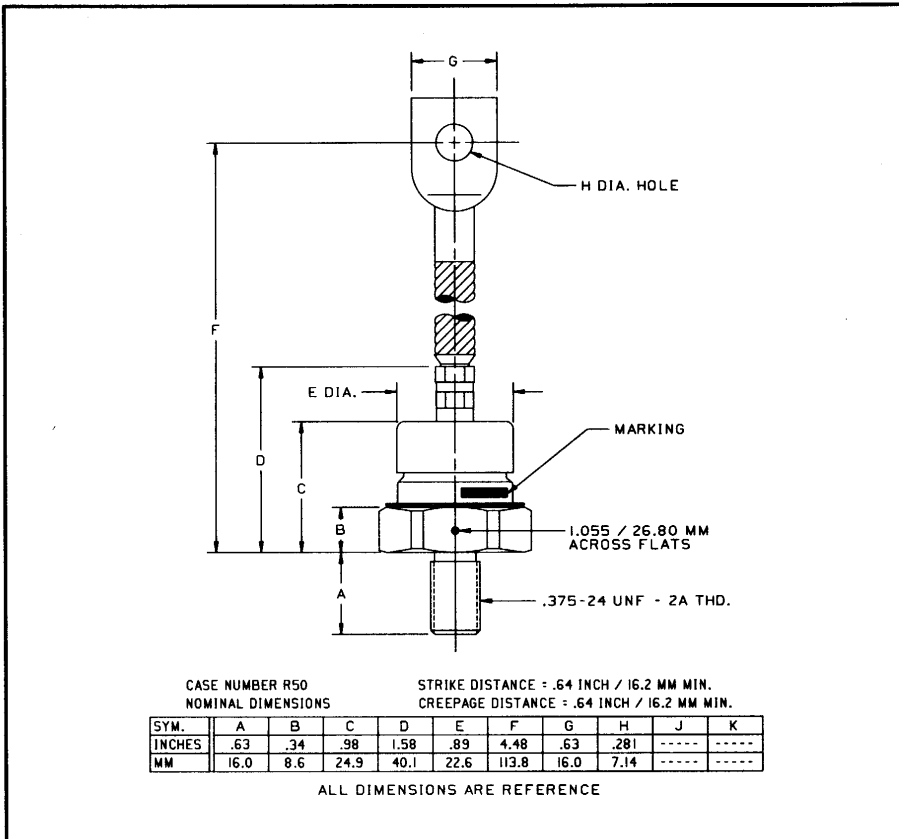


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**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 <sub>RRM</sub>	Code	I <sub>T(av)</sub>
A170	200	B	100
	400	D	
	600	M	
	800	N	
	1000	P	
	1200	PB	
	1400	PD	
	1600	PM	

### Features:

- 1600V V<sub>RRM</sub>
- 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

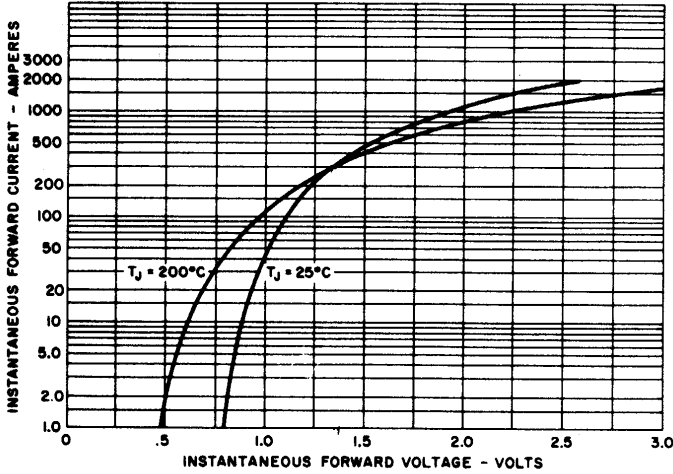
**Electrical and Thermal Characteristics**

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

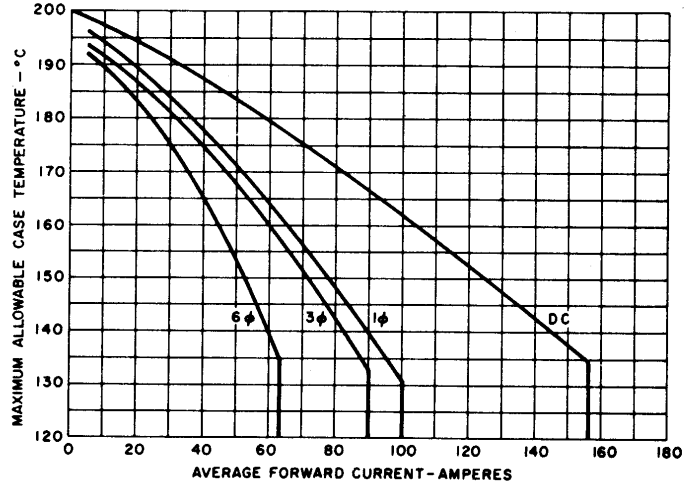


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

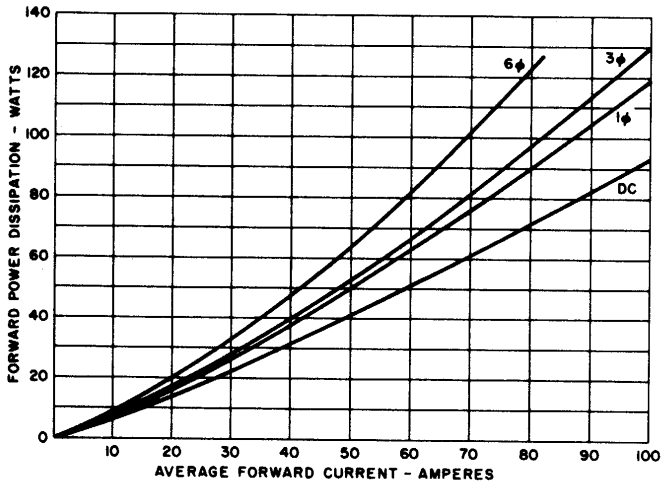
A170 (R)  
 Silicon Rectifier  
 100 Amperes Average, 1600 Volts



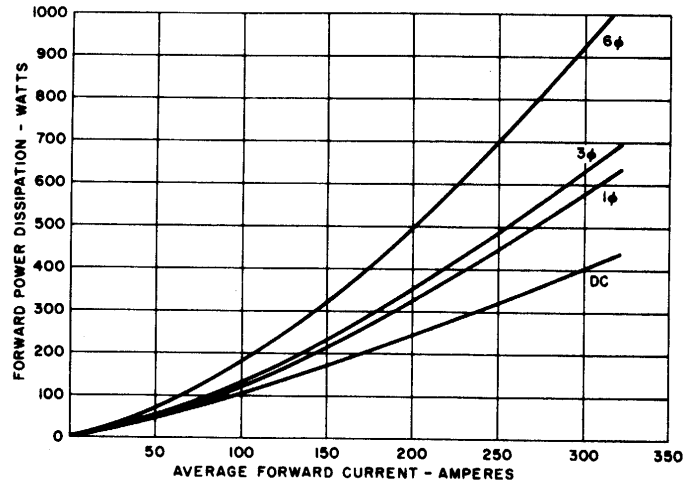
MAXIMUM FORWARD CHARACTERISTICS



MAXIMUM CASE TEMPERATURE VS. AVERAGE FORWARD CURRENT



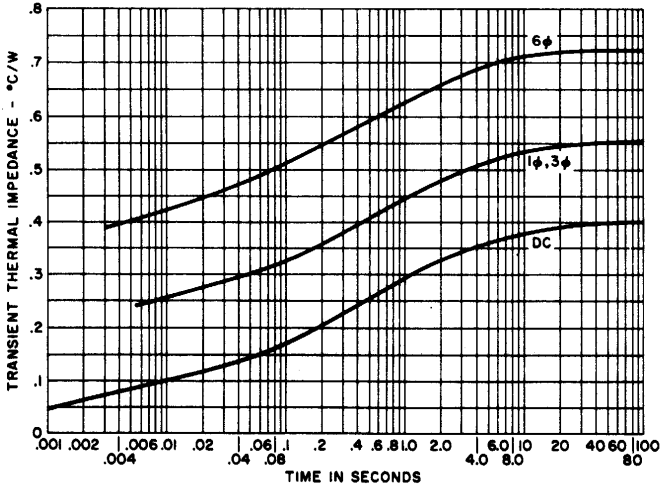
AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT



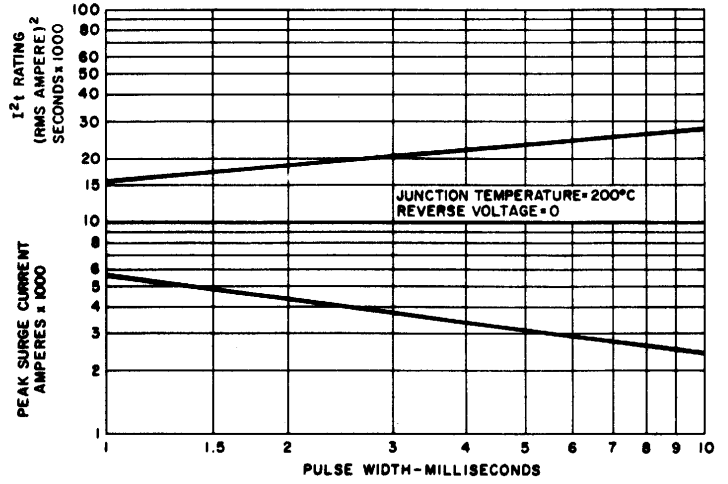
AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT, HIGH LEVEL

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 I²t RATING VS. PULSE TIME  
 FOLLOWING RATED LOAD CONDITIONS**