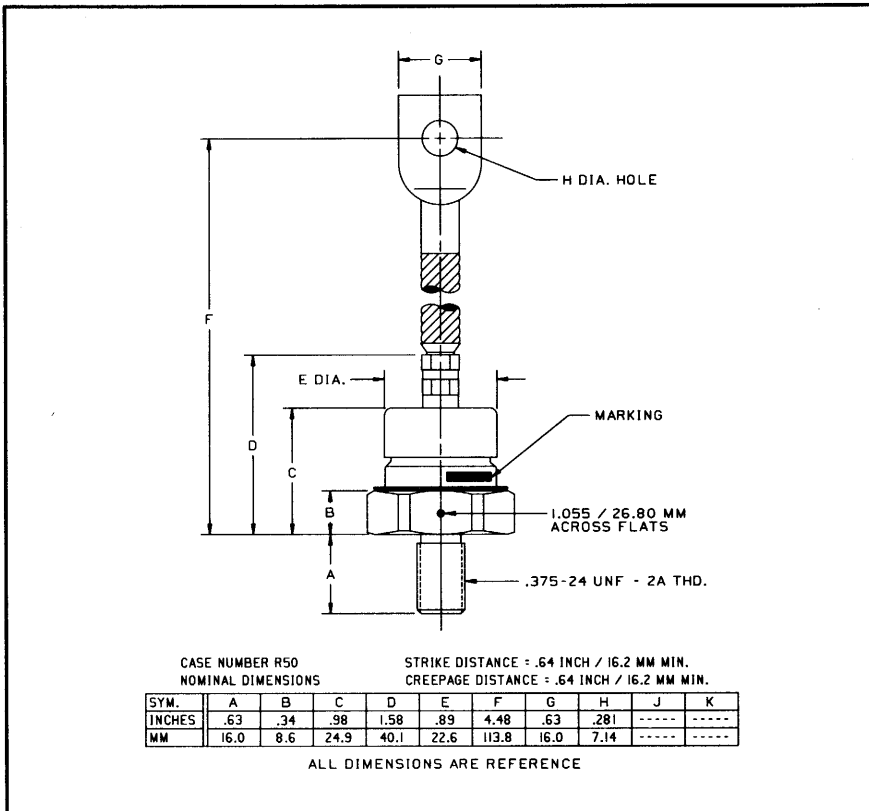


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

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 $I_T(av)$
	V_{RRM}	Code	
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



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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 ≥ 1.0 milliseconds	I^2t	15500	A^2sec
Storage Temperature	T_{stg}	-40 to +200	$^{\circ}C$
Operating Temperature	T_j	-40 to +200	$^{\circ}C$
Mounting Torque (Lubricated)		90 to 100	in-lb
		10.1 to 11.3	N-m

Electrical and Thermal Characteristics

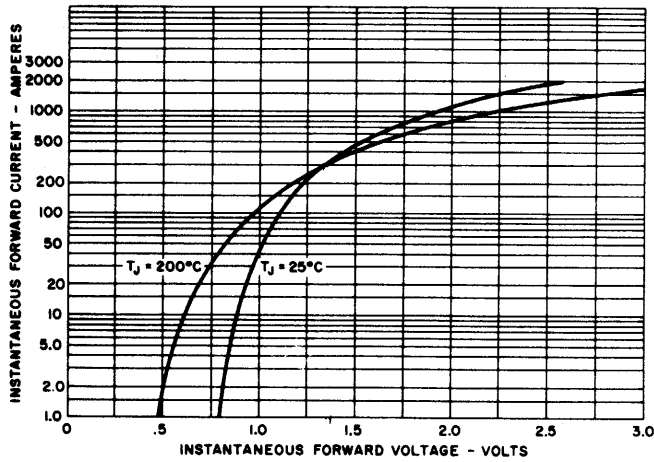
Characteristics	Symbol	Test Conditions	A170 (R)	Units
Current - Conducting State Maximums				
Forward Voltage Drop	V_{FM}	$T_C = 130^{\circ}C$, $I_{F(av)} = 100A$, 314A Peak	1.3	Volts
Voltage - Blocking State Maximums				
Repetitive Peak Reverse Voltage (Rated Limit)	V_{RRM}		1600	Volts
Non-rep. Trans.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

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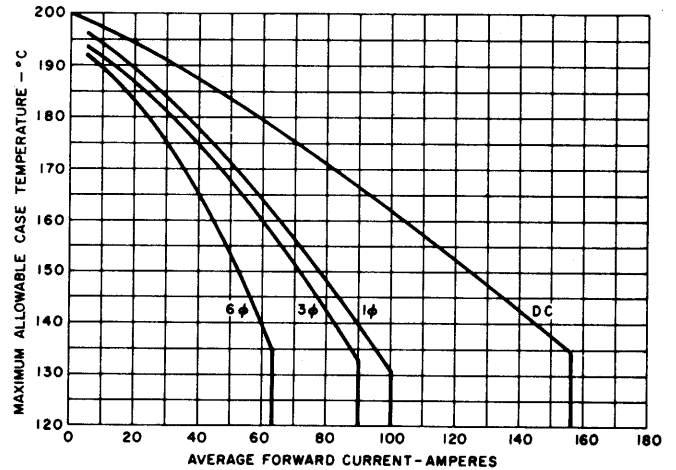
A170 (R)

Silicon Rectifier

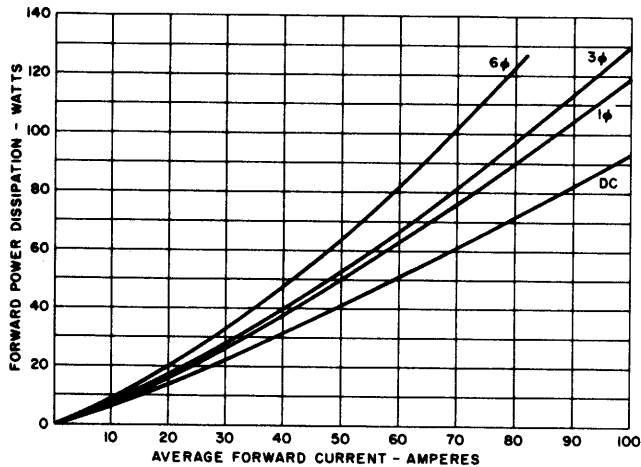
100 Amperes Average, 1600 Volts



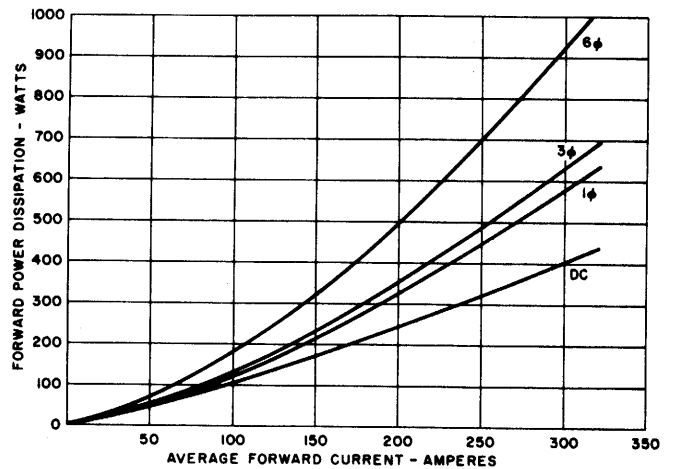
MAXIMUM FORWARD CHARACTERISTICS



MAXIMUM CASE TEMPERATURE VS. AVERAGE FORWARD CURRENT



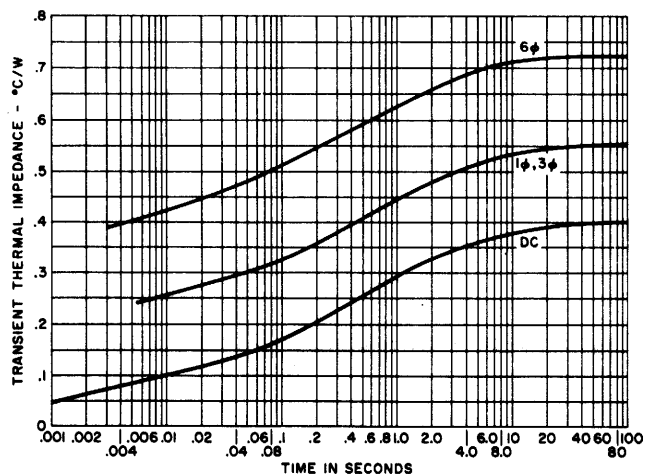
AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT



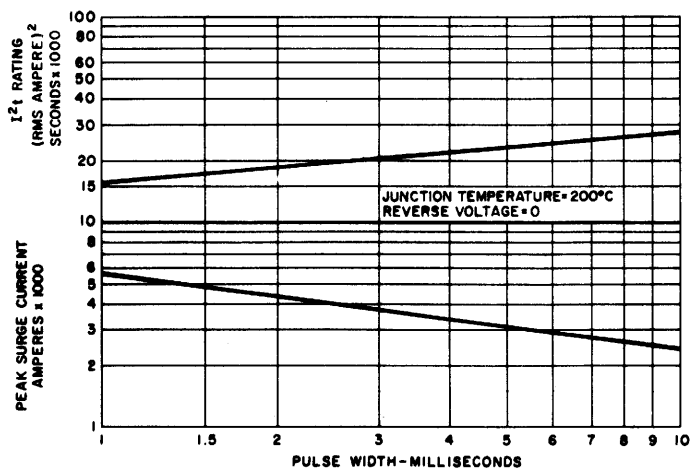
AVERAGE FORWARD POWER DISSIPATION VS. AVERAGE FORWARD CURRENT, HIGH LEVEL

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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