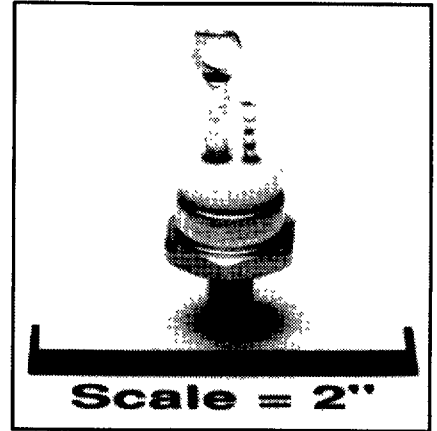
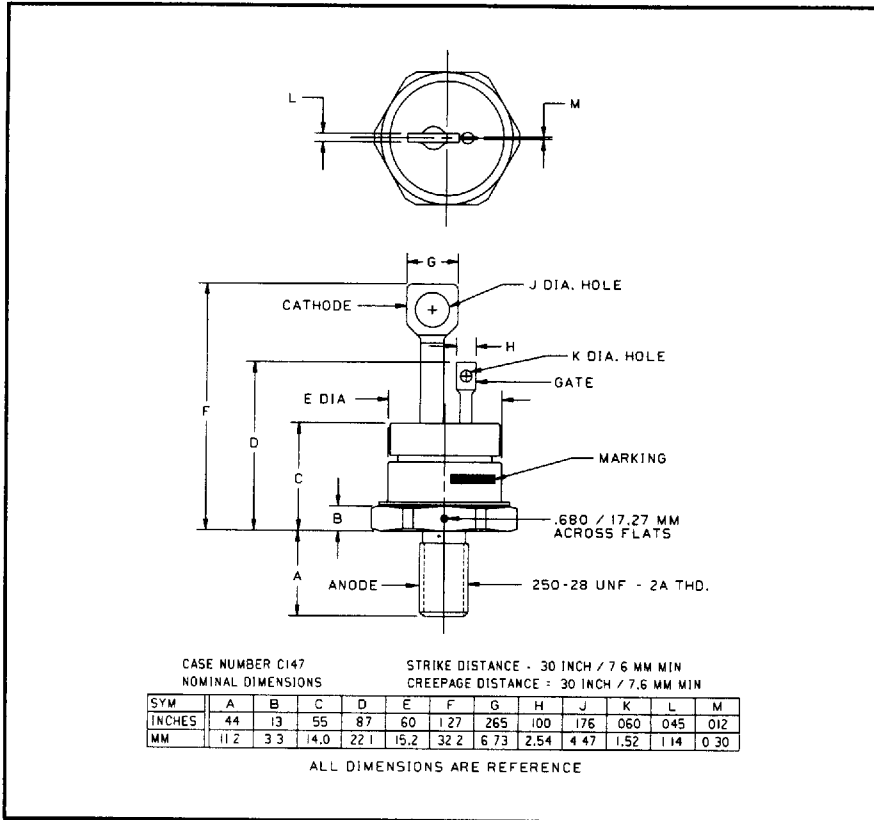


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

Phase Control SCR
 63 Amperes Average
 1200 Volts

POWEREX INC



C147
Phase Control SCR
 63 Amperes Average, 1200 Volts

C147 (Outline Drawing)

Ordering Information:

Select the complete five or six digit part number you desire from the table, i.e. C147PB is a 1200 Volt, 63 Ampere Phase Control SCR.

Type	Voltage		Current $I_T(av)$
	V_{RRM}	Code	
C147	100	A	63
	200	B	
	300	C	
	400	D	
	500	E	
	600	M	
	700	S	
	800	N	
	900	T	
	1000	P	
	1100	PA	
	1200	PB	

Features:

- 0.175" Diameter Cathode Post Hole for No. 8 Wire
- Hermetic Seal
- High Surge and I^2t Capability
- Minimum dv/dt Rating of 200 V/ μ sec
- High-voltage, High-current and Excellent Dynamic Characteristics

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C147
Phase Control SCR

63 Amperes Average, 1200 Volts

Absolute Maximum Ratings

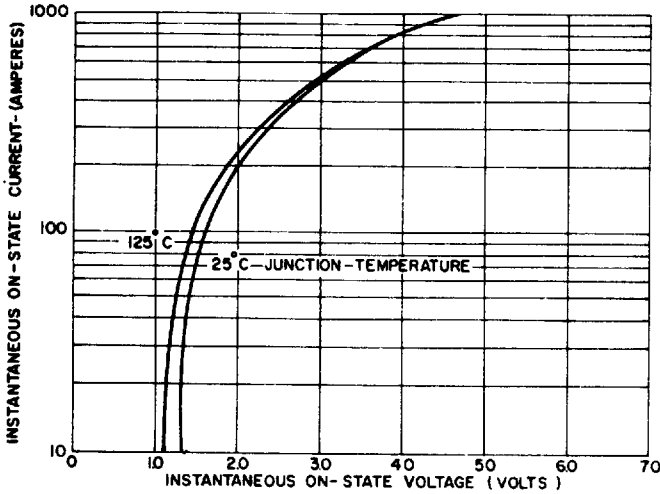
Characteristics	Symbol	C147	Units
RMS Forward Current	$I_{T(rms)}$	63	Amperes
Average Forward Current	$I_{T(av)}$	—	Amperes
One Cycle Surge Current	I_{TSM}	1000	Amperes
Minimum Rate of Rise of On-State Current (Non-repetitive)	di/dt	100	Amperes/ μ s
I^2t (for Fusing), Time \geq 1.5 milliseconds	I^2t	2850	A^2 sec
I^2t (for Fusing), Time \geq 8.3 milliseconds	I^2t	4150	A^2 sec
Peak Gate Power Dissipation	P_{GM}	100	Watts
Average Gate Power Dissipation	$P_{G(av)}$	2.0	Watts
Storage Temperature	T_{stg}	-40 to +150	$^{\circ}$ C
Operating Temperature	T_j	-40 to +125	$^{\circ}$ C
Mounting Torque		30	in-lb
		35	cm-Kg

Electrical and Thermal Characteristics

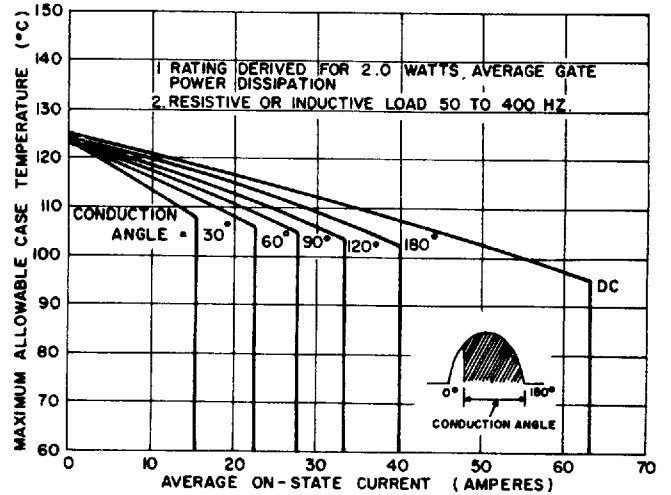
Characteristics	Symbol	Test Conditions	C147	Units
Current - Conducting State Maximums				
Peak On-state Voltage	V_{TM}	$T_C = 25^{\circ}$ C, $I_{TM} = 500$ A, 1msec Wide Pulse, Duty Cycle \leq 1%	3.0	Volts
Voltage - Blocking State Maximums				
Rep. Peak Forward Blocking Voltage (Rated Limit)	V_{DRM}		1200	Volts
Repetitive Peak Reverse Voltage (Rated Limit)	V_{RRM}		1200	Volts
Non-Rep. Trans. Peak Rev. Voltage (Rated Limit)	V_{RSM}		1440	Volts
Forward Leakage Current	I_{DRM}	$T_C = 125^{\circ}$ C, $V_{DRM} =$ Rated	6.0	mA
Reverse Leakage Current	I_{RRM}	$T_C = 125^{\circ}$ C, $V_{RRM} =$ Rated	6.0	mA
Switching				
Typical Turn-off Time	t_q	$I_{TM} = 10$ A, $di/dt = 5$ A/ μ sec, $T_C = 125^{\circ}$ C	125	μ sec
Minimum Critical dv/dt Exponential to V_{DRM}	dv/dt	$T_C = 125^{\circ}$ C, Rated V_{DRM}	200	V/ μ sec
Thermal				
Maximum Resistance, Junction to Case	$R_{\theta(j-c)}$		0.35	$^{\circ}$ C/Watt
Gate - Maximum Parameters				
Gate Current to Trigger	I_{GT}	$T_C = 25^{\circ}$ C, $V_D = 12V_{dc}$, $R_L = 12$ ohms	150	mA
Gate Voltage to Trigger	V_{GT}	$T_C = 25^{\circ}$ C, $V_D = 12V_{dc}$, $R_L = 12$ ohms	3.0	Volts
Peak Negative Gate Voltage	V_{GM}		10	Volts
Holding Current	I_H	Anode Supply = $24V_{dc}$, $T_C = 25^{\circ}$ C, Gate Supply = 10V, 20 ohms, Forward Current Pulse = 2.0A, 0.1 to 10 msec Wide	250	mA

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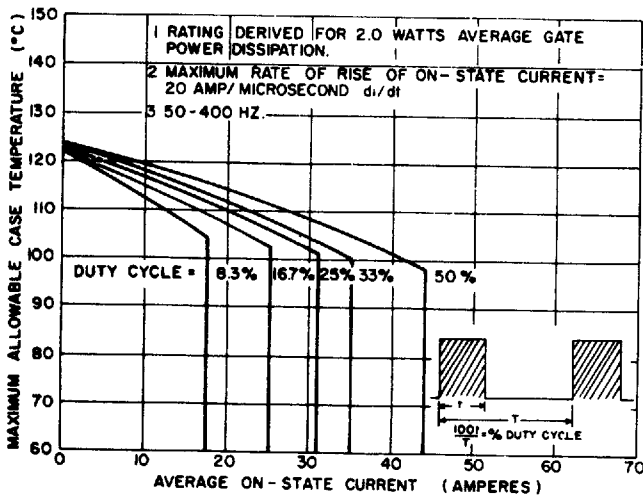
C147 (R)
Phase Control SCR
 63 Amperes Average, 1200 Volts



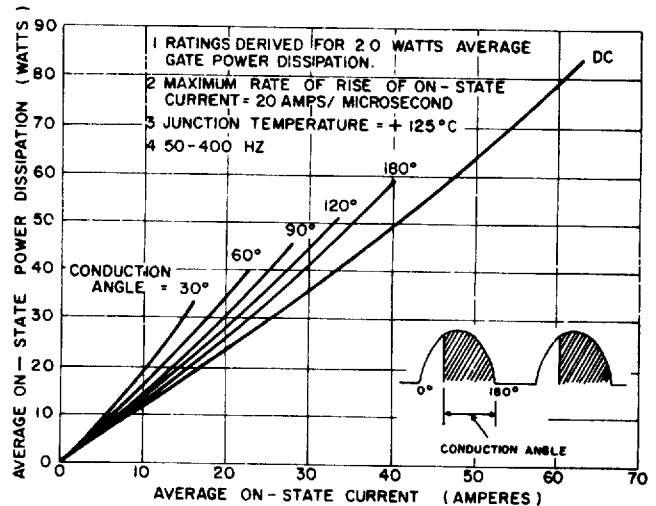
MAXIMUM ON-STATE CHARACTERISTICS



MAXIMUM ALLOWABLE CASE TEMPERATURE FOR SINUSOIDAL CURRENT WAVEFORM



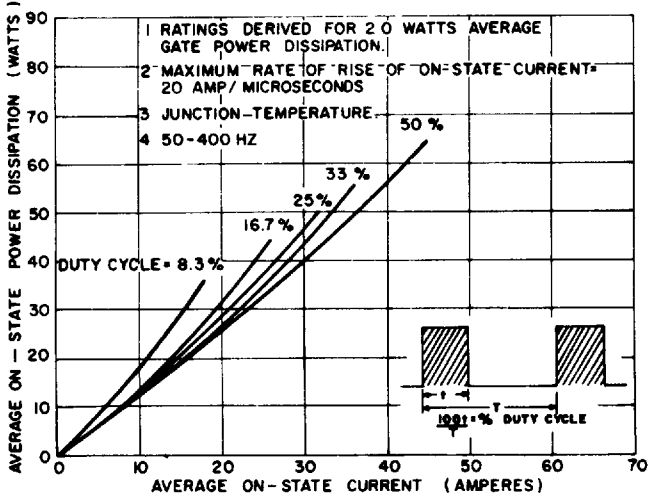
MAXIMUM ALLOWABLE CASE TEMPERATURE FOR RECTANGULAR CURRENT WAVEFORM



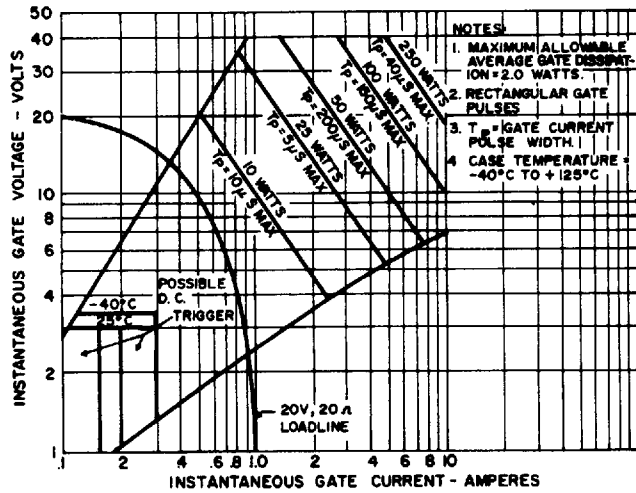
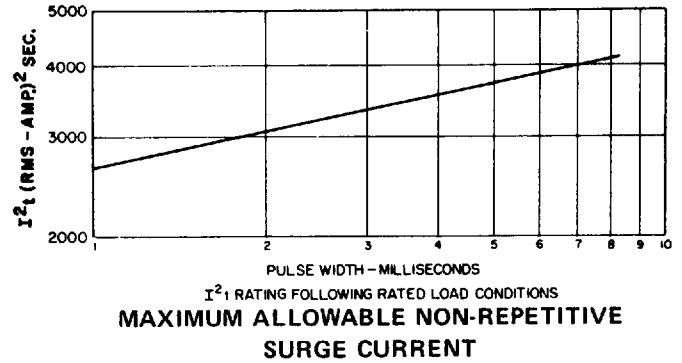
MAXIMUM ON-STATE POWER DISSIPATION FOR SINUSOIDAL CURRENT WAVEFORM

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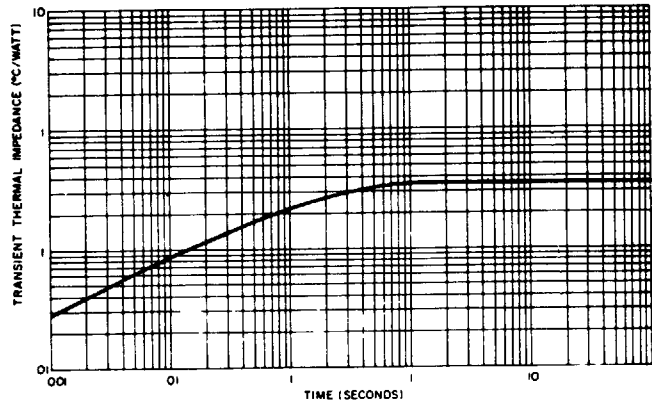
C147 (R)
Phase Control SCR
 63 Amperes Average, 1200 Volts



MAXIMUM ON-STATE POWER DISSIPATION FOR RECTANGULAR CURRENT WAVEFORM



GATE TRIGGER CHARACTERISTICS AND POWER RATINGS



TRANSIENT THERMAL IMPEDANCE - JUNCTION-TO-CASE