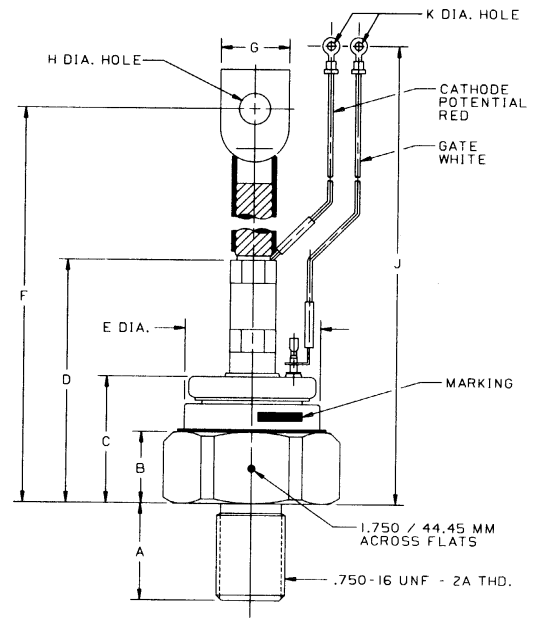
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

Phase Control SCR
300-350 Amperes
2400 Volts



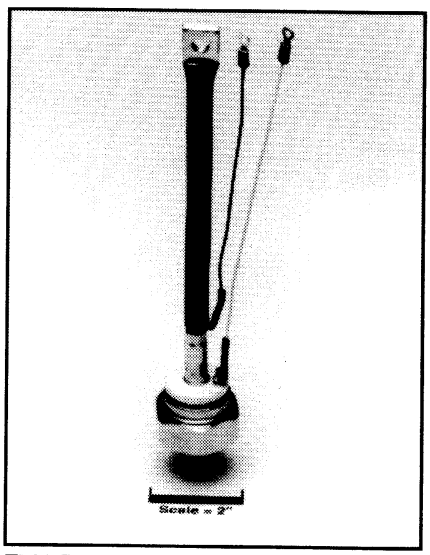
CASE NUMBER T70
NOMINAL DIMENSIONS

STRIKE DISTANCE = .43 INCH / 10.9 MM MIN.
CREEPAGE DISTANCE = .43 INCH / 10.9 MM MIN.

SYM.	A	B	C	D	E	F	G	H	J	K
INCHES	1.06	.78	1.41	2.74	1.49	9.66	.73	.343	10.06	.146
MM	26.9	19.8	35.8	69.6	37.8	245.4	18.5	8.71	255.5	3.71

ALL DIMENSIONS ARE REFERENCE

T700 (Outline Drawing)



T700 Phase Control SCR
300-350 Amperes, 2400 Volts

Ordering Information:
Select the complete eight digit part number you desire from the table, i.e. T7002435 is a 2400 Volt, 350 Ampere Phase Control SCR.

Type	Voltage		Current	
	V_{DRM} V_{RRM}	Code	$I_{T(av)}$	Code
T700	200	02	300	30
	400	04	350	35
	600	06		
	800	08		
	1000	10		
	1200	12		
	1400	14		
	1600	16		
	1800	18		
	2000	20		
	2200	22		
	2400	24		

Description:
Powerex Silicon Controlled Rectifiers (SCR) are designed for phase control applications. These are all-diffused, compression bonded encapsulated (CBE) devices employing the field-proven amplifying (di/namic) gate.

Features:
- ☐ Low On-State Voltage
- ☐ High di/dt
- ☐ High dv/dt
- ☐ Hermetic Packaging
- ☐ Excellent Surge and I^2t Ratings

Applications:
- ☐ Power Supplies
- ☐ Battery Chargers
- ☐ Motor Control

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T700
Phase Control SCR
300-350 Amperes, 2400 Volts

Absolute Maximum Ratings

	Symbol	T700 _ _ 30	T700 _ _ 35	Units
RMS On-State Current	$I_{T(RMS)}$	470	550	Amperes
Average On-State Current	$I_{T(av)}$	300	350	Amperes
Peak One-Cycle Surge (Non Repetitive) On-State Current (60Hz)	I_{TSM}	8400	10,000	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	I_{TSM}	7700	9100	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	di/dt	800	800	Amperes/μs
Critical Rate-of-Rise of On-State Current (Repetitive)	di/dt	150	150	Amperes/μs
I^2t (for Fusing), 8.3 milliseconds	I^2t	295,000	416,000	A^2sec
Peak Gate Power Dissipation	P_{GM}	16	16	Watts
Average Gate Power Dissipation	$P_{G(av)}$	3	3	Watts
Storage Temperature	T_{STG}	−40 to 150	−40 to 150	°C
Operating Temperature	T_J	−40 to 125	−40 to 125	°C
Mounting Torque		360	360	in.-lb.
Mounting Torque (Lubricated)		400	400	kg-cm

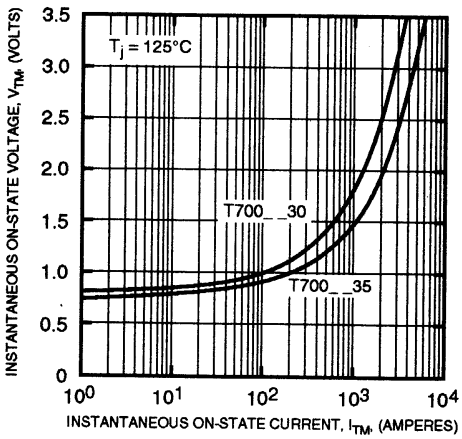
Electrical and Thermal Characteristics

	Symbol	Test Conditions	T700 _ _ 30	T700 _ _ 35	Units
Current—Conducting State Maximums					
Peak On-State Voltage	V_{TM}	T_J = 25°C, I_{TM} = 625A	1.60	1.40	Volts
			T700		
Voltage—Blocking State Maximums					
Forward Leakage, Peak	I_{DRM}	T_J = 125°C, V_{DRM} = rated	30		mA
Reverse Leakage, Peak	I_{RRM}	T_J = 125°C, V_{RRM} = rated	30		mA
Switching					
Typical Turn-Off Time	t_q	I_T = 250 A, di_R/dt = 25 A/μsec, reapplied dv/dt = 20V/μsec linear to 0.8 V_{DRM}, T_J = 125°C	150		μsec
Typical Turn-On Time	t_{on}	I_T = 100A, V_D = 100V	7		μsec
Min. Critical dv/dt exponential to V_{DRM}	dv/dt	T_J = 125°C	300		V/μsec
Thermal					
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$		0.10		°C/Watt
Case to Sink, Lubricated	$R_{\theta CS}$		0.05		°C/Watt
Gate—Maximum Parameters					
Gate Current to Trigger	I_{GT}	T_J = 25°C, V_D = 12V	150		mA
Gate Voltage to Trigger	V_{GT}	T_J = 25°C, V_D = 12V	3		Volts
Non-Triggering Gate Voltage	V_{GDM}	T_J = 125°C, V_{DRM} = rated	0.15		Volts
Peak Forward Gate Current	I_{GTM}		4		Amperes
Peak Reverse Gate Voltage	V_{GRM}		5		Volts

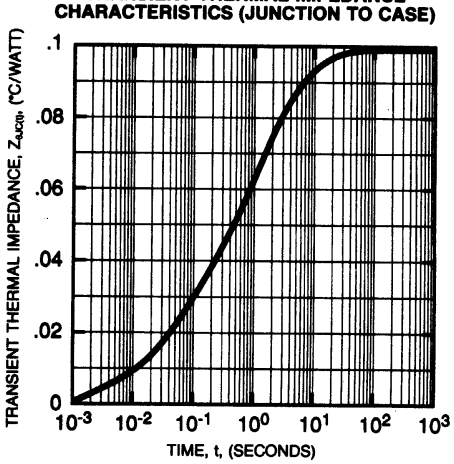
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T700
Phase Control SCR
300-350 Amperes, 2400 Volts

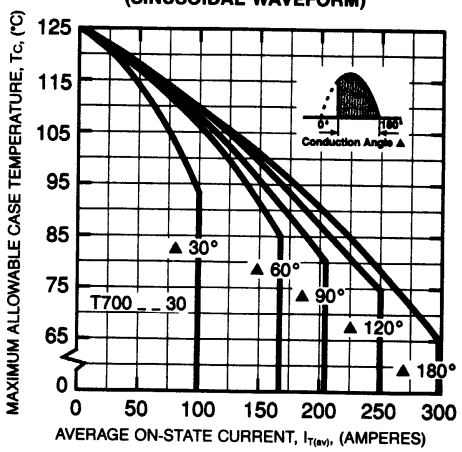
MAXIMUM ON-STATE CHARACTERISTICS



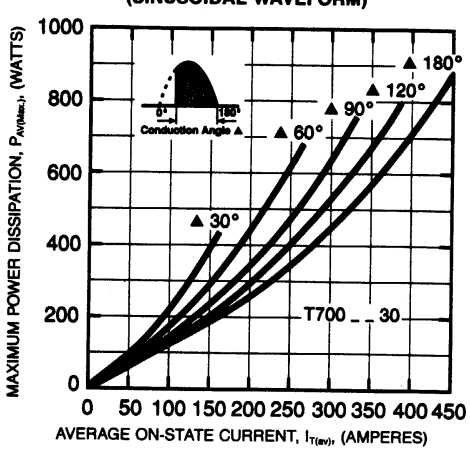
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO CASE)



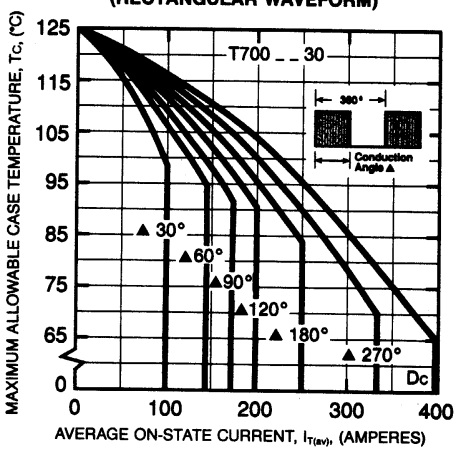
MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



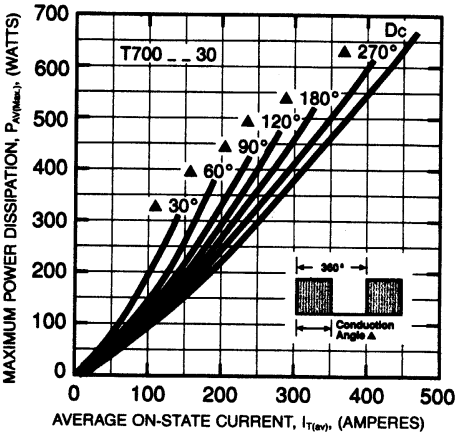
MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)



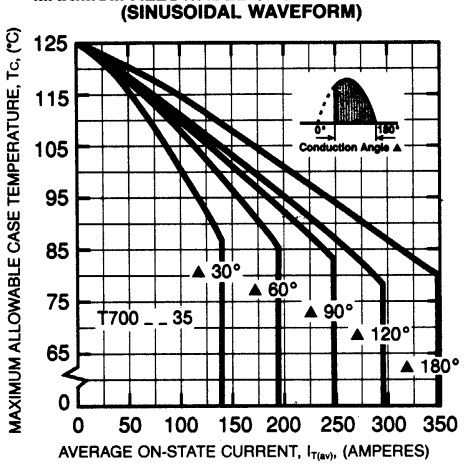
MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)



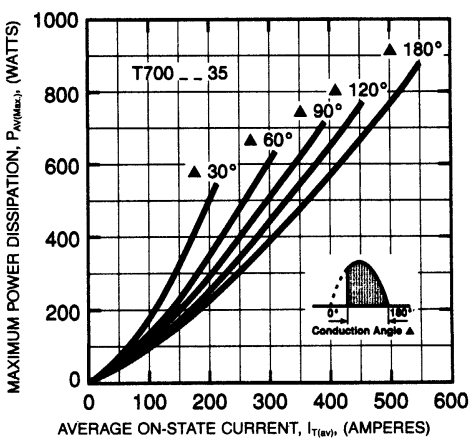
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T700
Phase Control SCR
300-350 Amperes, 2400 Volts

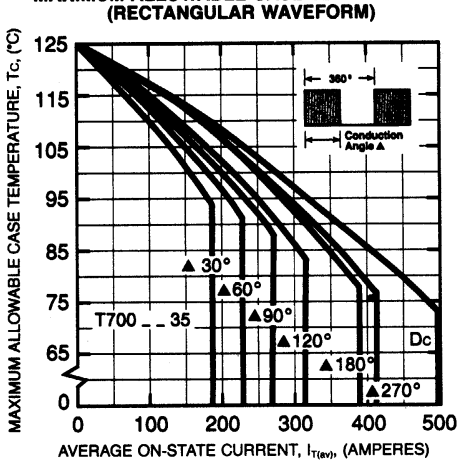
MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)

