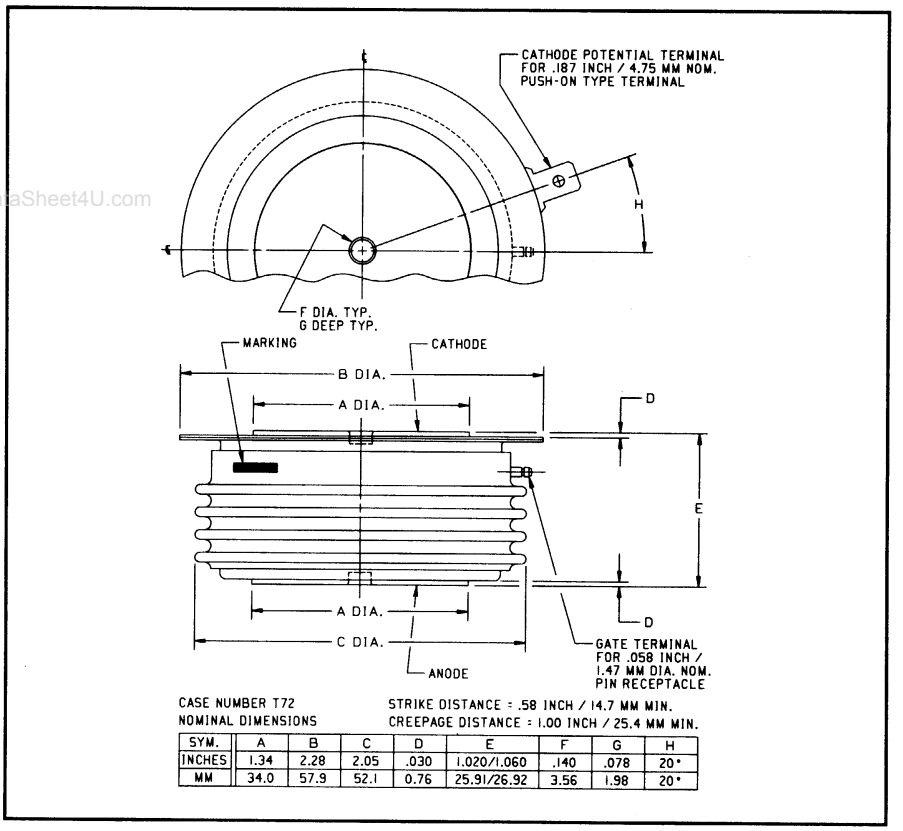
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

Phase Control SCR
450-550 Amperes
2400 Volts



CASE NUMBER T72
NOMINAL DIMENSIONS

STRIKE DISTANCE = .58 INCH / 14.7 MM MIN.
CREEPAGE DISTANCE = 1.00 INCH / 25.4 MM MIN.

SYM.	A	B	C	D	E	F	G	H
INCHES	1.34	2.28	2.05	.030	1.020/1.060	.140	.078	20°
MM	34.0	57.9	52.1	0.76	25.91/26.92	3.56	1.98	20°

T720 (Outline Drawing)

T720 Phase Control SCR
450-550 Amperes, 2400 Volts

Ordering Information:
Select the complete eight digit part number you desire from the table, i.e. T7202455 is a 2400 Volt, 550 Ampere Phase Control SCR.

Type	Voltage V_{DRM} V_{RRM}	Code	Current $I_{T(av)}$	Code
T720	200	02	450	45
	600	06	550	55
	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, Press-Pak (Pow-R-Disc) 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
- ☐ VAR Generators

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T720
Phase Control SCR
450-550 Amperes, 2400 Volts

Absolute Maximum Ratings

	Symbol	T720 _ _ 45	T720 _ _ 55	Units
Maximum Blocking Voltage	V_{DRM}, V_{RRM}	2400	2400	Volts
RMS On-State Current	$I_{T(RMS)}$	700	850	Amperes
Average On-State Current	$I_{T(av)}$	450	550	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}	7650	9125	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	di/dt	600	600	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 Force		2000 to 2400	2000 to 2400	lb.
Mounting Force		900 to 1090	900 to 1090	kg

Electrical and Thermal Characteristics

	Symbol	Test Conditions	T720 _ _ 45	T720 _ _ 55	Units
Current—Conducting State Maximums					
Peak On-State Voltage	V_{TM}	I_{TM} = 625A, T_J = 25°C	1.60	1.40	Volts
			T720		
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 = 250A, T_J = 125°C, di_R/dt = 25A/μsec, reapplied dv/dt = 20V/μsec linear to 0.8V_{DRM}	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, double sided cooling					
Junction to Case	$R_{\theta JC}$		0.06		°C/Watt
Case to Sink, Lubricated	$R_{\theta CS}$		0.02		°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, rated V_{DRM}	0.15		Volts
Peak Forward Gate Current	I_{GTM}		4		Amperes
Peak Reverse Gate Voltage	V_{GRM}		5		Volts

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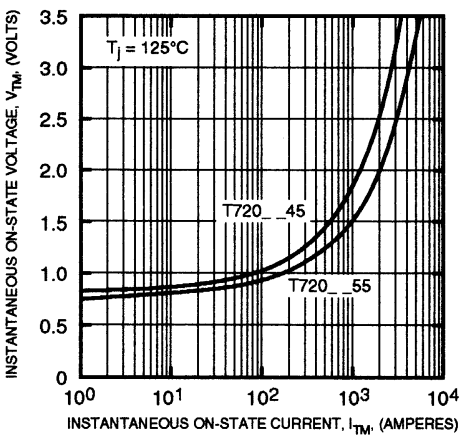
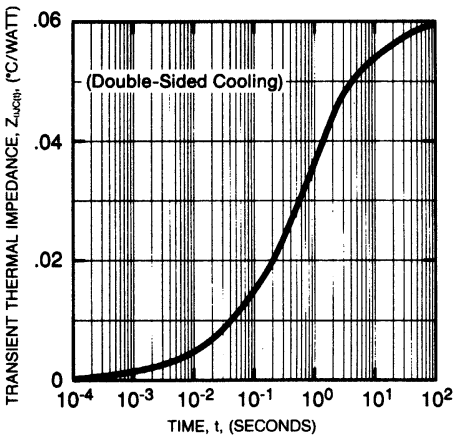
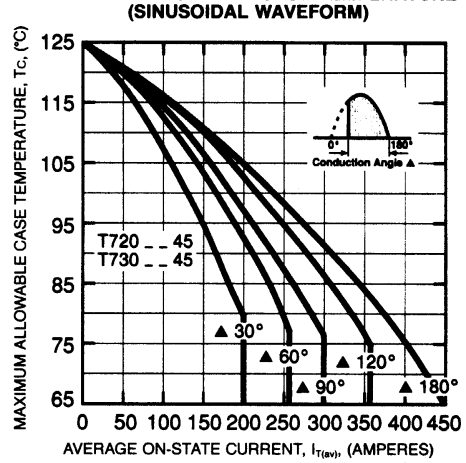
MAXIMUM ON-STATE CHARACTERISTICS



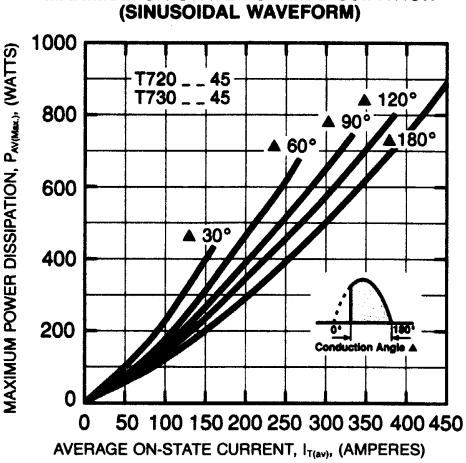
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO CASE)



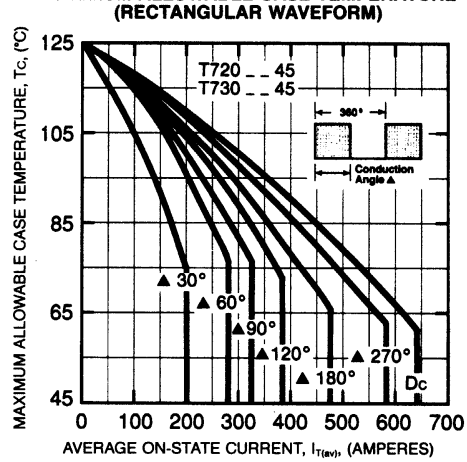
MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



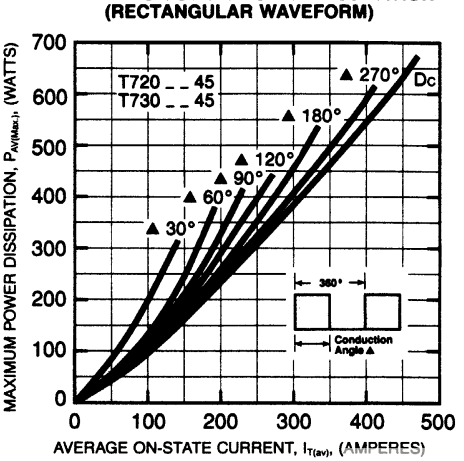
MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)



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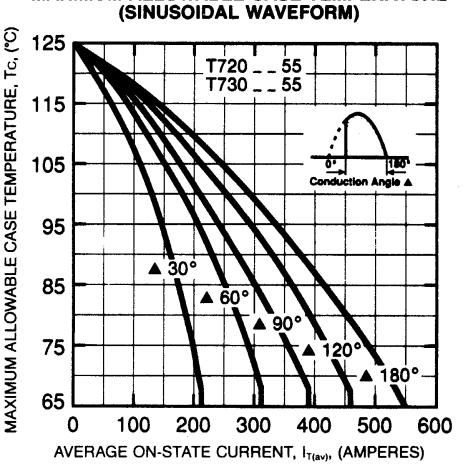
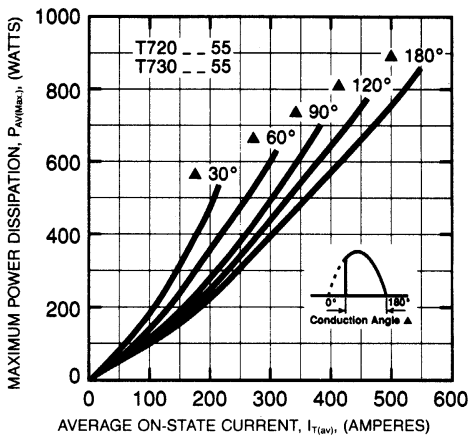
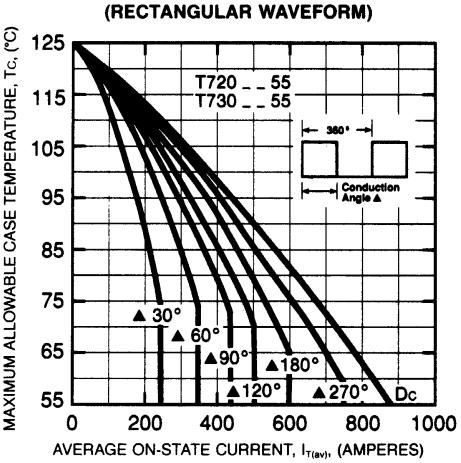
MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)