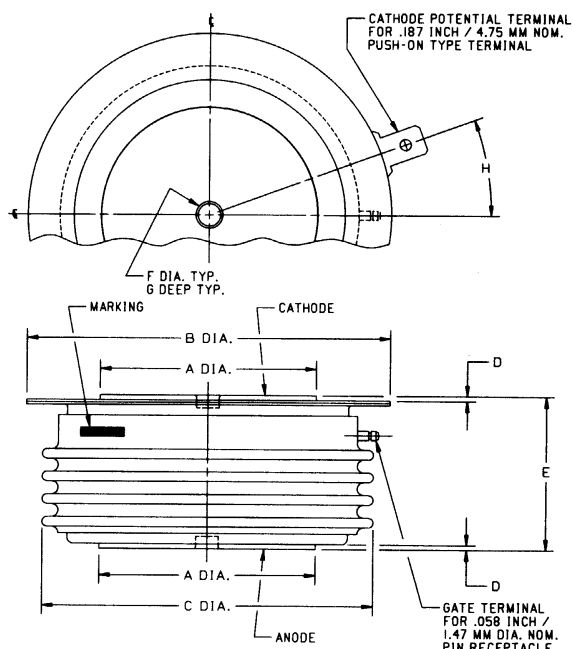


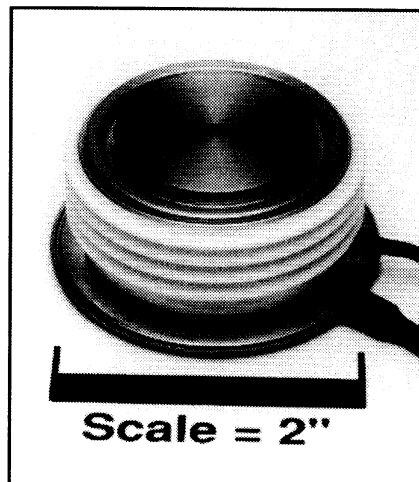
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

### 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 Phase Control SCR  
450-550 Amperes, 2400 Volts

#### T720 (Outline Drawing)

#### 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		Current	
	V <sub>DRM</sub> V <sub>RRM</sub>	Code	I <sub>T(av)</sub>	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<sup>2</sup>t 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

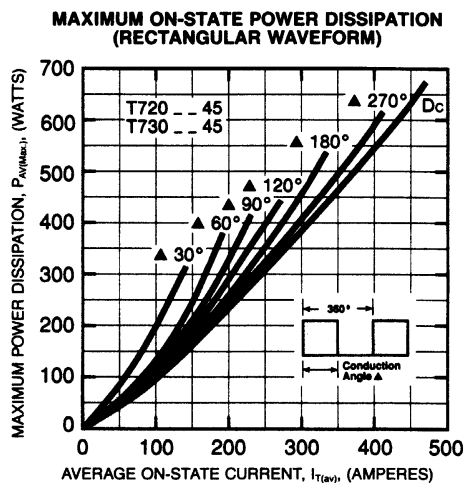
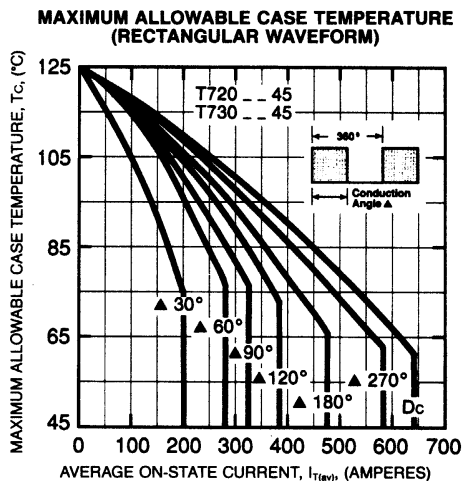
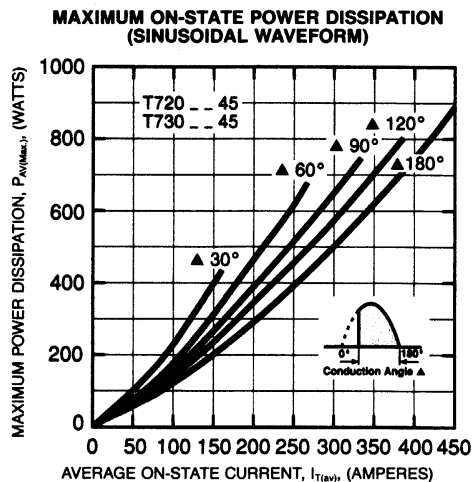
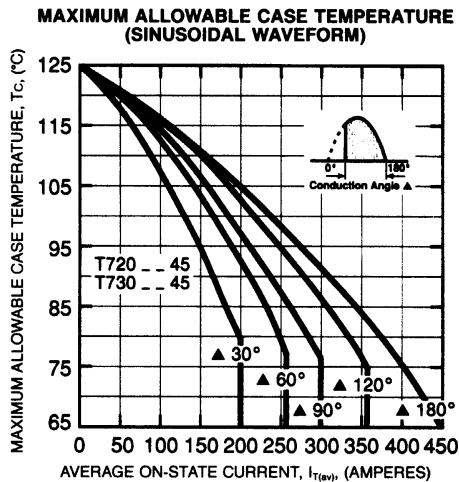
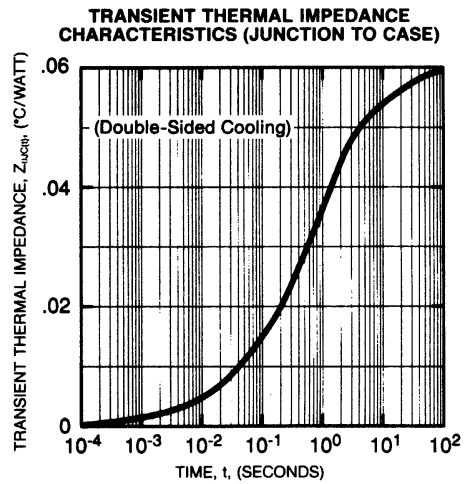
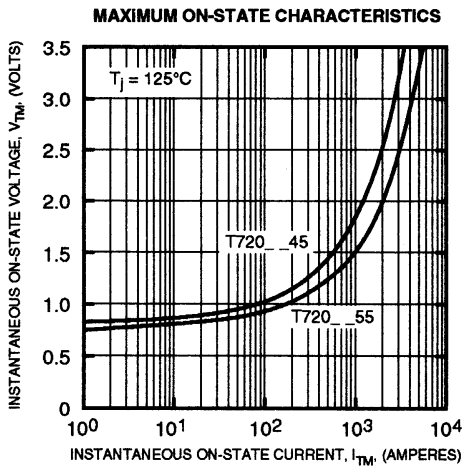
	Symbol	T720 _ _ 45	T720 _ _ 55	Units
Maximum Blocking Voltage	$V_{DRM}, V_{RRM}$	2400	2400	Volts
RMS On-State Current	$I_{T(RMS)}$	700	850	Amperes
Average On-State Current	$I_{T(av)}$	450	550	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	$I_{TSM}$	8400	10,000	Amperes
Peak One-Cycle 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/ $\mu$ s
Critical Rate-of-Rise of On-State Current (Repetitive)	$di/dt$	150	150	Amperes/ $\mu$ s
$I^2t$ (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	$^{\circ}C$
Operating Temperature	$T_J$	-40 to 125	-40 to 125	$^{\circ}C$
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
<b>Current—Conducting State Maximums</b>					
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 625A, T_J = 25^{\circ}C$	1.60	1.40	Volts
<b>Voltage—Blocking State Maximums</b>					
Forward Leakage, Peak	$I_{DRM}$	$T_J = 125^{\circ}C, V_{DRM} = \text{rated}$	30		mA
Reverse Leakage, Peak	$I_{RRM}$	$T_J = 125^{\circ}C, V_{RRM} = \text{rated}$	30		mA
<b>Switching</b>					
Typical Turn-Off Time	$t_q$	$I_T = 250A, T_J = 125^{\circ}C,$ $di_a/dt = 25A/\mu\text{sec},$ reapplied $dv/dt = 20V/\mu\text{sec}$ linear to $0.8V_{DRM}$	150		$\mu\text{sec}$
Typical Turn-On Time	$t_{on}$	$I_T = 100A, V_D = 100V$	7		$\mu\text{sec}$
Min. Critical $dv/dt$ exponential to $V_{DRM}$	$dv/dt$	$T_J = 125^{\circ}C$	300		$V/\mu\text{sec}$
<b>Thermal</b>					
Maximum Thermal Resistance, double sided cooling Junction to Case	$R_{\theta JC}$		0.06		$^{\circ}C/\text{Watt}$
Case to Sink, Lubricated	$R_{\theta CS}$		0.02		$^{\circ}C/\text{Watt}$
<b>Gate—Maximum Parameters</b>					
Gate Current to Trigger	$I_{GT}$	$T_J = 25^{\circ}C, V_D = 12V$	150		mA
Gate Voltage to Trigger	$V_{GT}$	$T_J = 25^{\circ}C, V_D = 12V$	3		Volts
Non-Triggering Gate Voltage	$V_{GDM}$	$T_J = 125^{\circ}C, \text{rated } V_{DRM}$	0.15		Volts
Peak Forward Gate Current	$I_{GTM}$		4		Amperes
Peak Reverse Gate Voltage	$V_{GRM}$		5		Volts

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