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 Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

### Phase Control SCR 300 Amperes Average 2000 Volts

Inches	Inches		Millimeters	
	Min.	Max.	Min.	Max.
9.00	10.00	228.60	254.00	
.063	.172	1.60	4.37	
2.980	3.020	75.69	76.71	
—	1.490	—	37.85	
3.750	—	95.25	—	
.272	.292	6.91	7.42	
.530	.755	13.46	19.18	
2.030	2.150	51.56	54.61	
.500	—	12.70	—	
—	2.670	—	67.81	
3.937	4.063	100.00	103.20	
4.937	5.063	125.40	128.60	
.330	.350	8.38	8.89	
.970	1.030	24.64	26.16	
.470	.530	11.94	13.46	
.440	—	11.18	—	

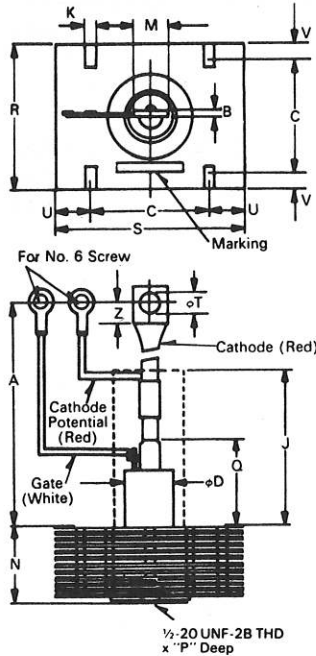
lar orientation of terminals are undefined.  
 diameter of 1/2-20 UNF-2A (coated) threads  
 B1.1-1960).  
 nsion "J" denotes seated height with leads bent at  
 angles.

ne Drawing)

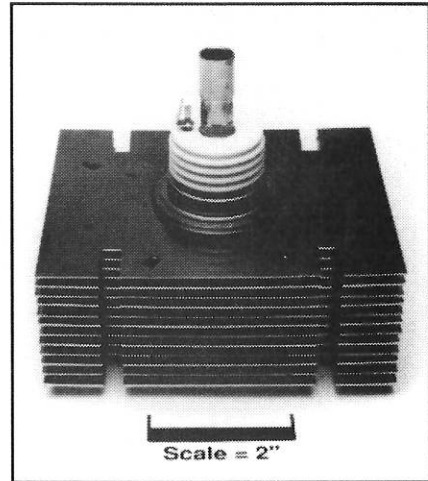
#### g Information:

e complete eight digit part  
 ou desire from the table,  
 2030 is a 2000 Volt,  
 ere Phase Control SCR.

Voltage		Current	
V <sub>DRM</sub>	V <sub>RRM</sub> Code	I <sub>T(av)</sub>	Code
200	02	300	30
400	04		
600	06		
800	08		
1000	10		
1200	12		
1400	14		
1600	16		



Creep Distance—1.76 in. min. (44.91 mm)  
 Strike Distance—.81 in. min. (20.70 mm).  
 (In accordance with NEMA standards.)  
 Finish—Nickel Plate.  
 Approx. Weight—5 lb. (2.3 kg.).



**T760 Phase Control SCR**  
 300 Amperes Average, 2000 Volts  
 (Flex Lead Not Shown)

#### 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<sup>2</sup>t Ratings
- Integral Heat Sink

#### Applications:

- Power Supplies
- Battery Chargers

T760  
 Phase Control SCR  
 300 Amperes, 2000 Volts

### Absolute Maximum Ratings

	Symbol	T760	Units
RMS On-State Current	$I_{T(RMS)}$	470	Amperes
Average On-State Current	$I_{T(av)}$	300	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	$I_{TSM}$	8400	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	$I_{TSM}$	7650	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	$di/dt$	600	Amperes/ $\mu$ s
Critical Rate-of-Rise of On-State Current (Repetitive)	$di/dt$	150	Amperes/ $\mu$ s
$I^2t$ (for Fusing), 8.3 milliseconds	$I^2t$	295,000	A <sup>2</sup> sec
Peak Gate Power Dissipation	$P_{GM}$	16	Watts
Average Gate Power Dissipation	$P_{G(av)}$	3	Watts
Storage Temperature	$T_{STG}$	-40 to 150	°C
Operating Temperature	$T_J$	-40 to 125	°C

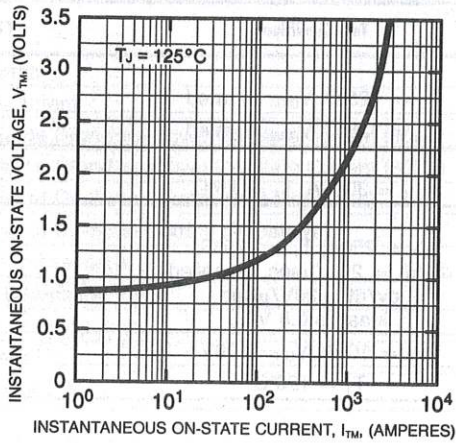
T760  
 Phase Control SCR  
 300 Amperes, 2000 Volts

### Electrical and Thermal Characteristics

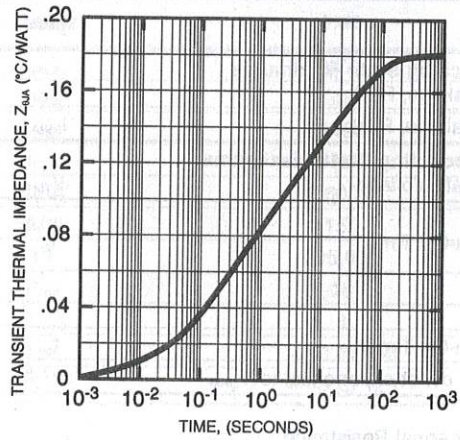
Characteristics	Symbol	Test Conditions	T760	Units
<b>Voltage—Blocking State Maximums</b>				
Forward Leakage, Peak	$I_{DRM}$	$T_J = 125^\circ\text{C}$ , $V_{DRM} = \text{rated}$	30	mA
Reverse Leakage, Peak	$I_{RRM}$	$T_J = 125^\circ\text{C}$ , $V_{RRM} = \text{rated}$	30	mA
<b>Current—Conducting State Maximums</b>				
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 3000\text{A}$ , $T_J = 25^\circ\text{C}$	3.30	Volts
<b>Switching</b>				
Typical Turn-Off Time	$t_q$	$I_T = 250\text{A}$ , $T_J = 125^\circ\text{C}$ , $di_R/dt = 25\text{A}/\mu\text{sec}$ , reappplied $dv/dt = 20\text{V}/\mu\text{sec}$ linear to $0.8 V_{DRM}$	150	$\mu\text{sec}$
Typical Turn-On Time	$t_{on}$	$I_T = 100\text{A}$ , $V_D = 100\text{V}$	7	$\mu\text{sec}$
Min. Critical $dv/dt$ exponential to $V_{DRM}$	$dv/dt$	$T_J = 125^\circ\text{C}$	300	$\text{V}/\mu\text{sec}$
<b>Thermal</b>				
Maximum Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	1500 LFM Airflow	0.18	°C/Watt
<b>Gate—Maximum Parameters</b>				
Gate Current to Trigger	$I_{GT}$	$T_J = 25^\circ\text{C}$ , $V_D = 12\text{V}$	150	mA
Gate Voltage to Trigger	$V_{GT}$	$T_J = 25^\circ\text{C}$ , $V_D = 12\text{V}$	3	Volts
Non-Triggering Gate Voltage	$V_{GDM}$	$T_J = 125^\circ\text{C}$ , rated $V_{DRM}$	0.15	Volts
Peak Forward Gate Current	$I_{GTM}$		4	Amperes
Peak Reverse Gate Voltage	$V_{GRM}$		5	Volts

**T760**  
**Phase Control SCR**  
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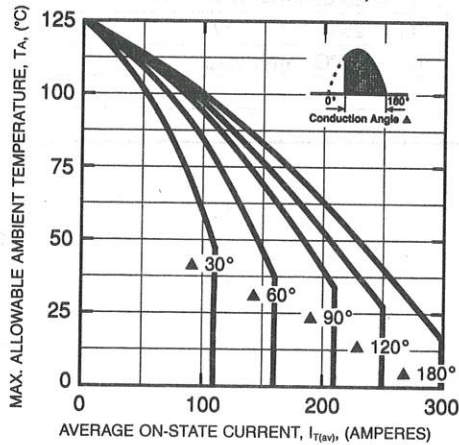
**MAXIMUM ON-STATE CHARACTERISTICS**



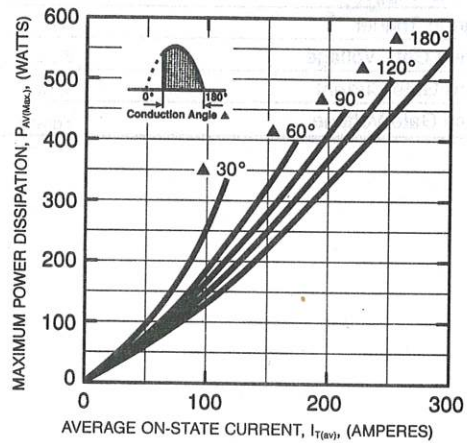
**TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO AMBIENT)**



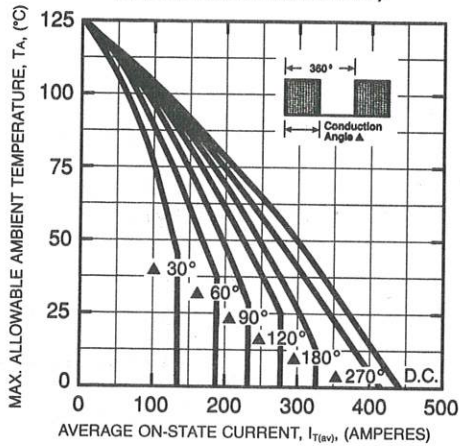
**MAXIMUM ALLOWABLE AMBIENT TEMPERATURE (SINUSOIDAL WAVEFORM)**



**MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)**



**MAXIMUM ALLOWABLE AMBIENT TEMPERATURE (RECTANGULAR WAVEFORM)**



**MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)**

