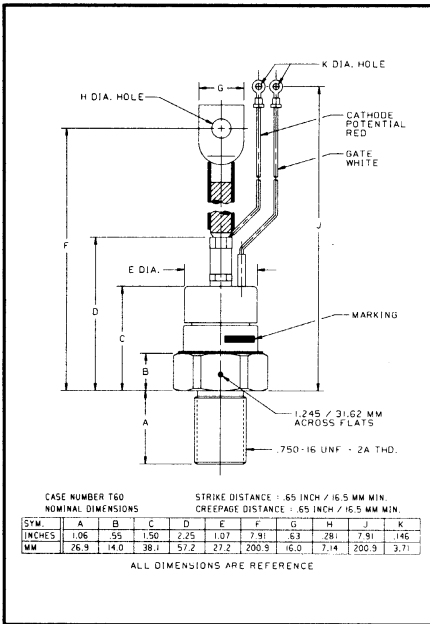
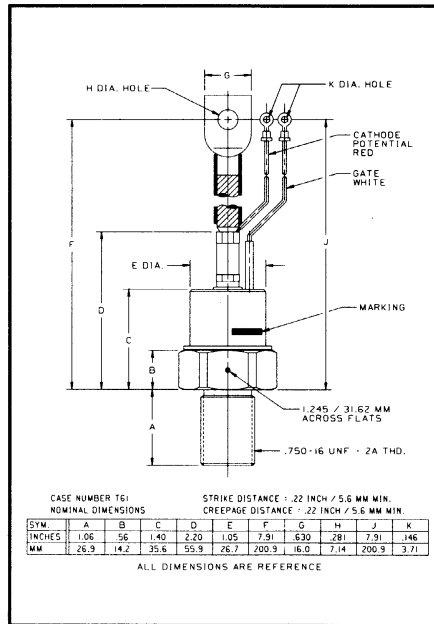


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

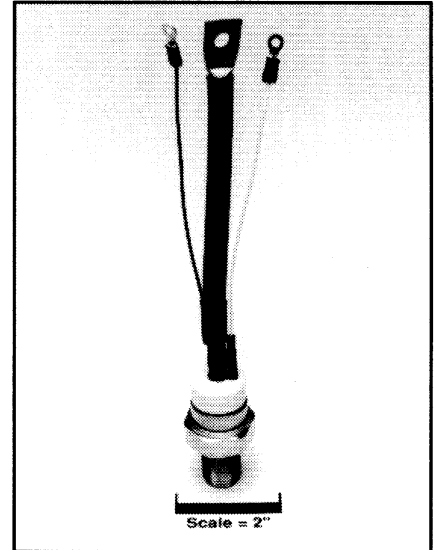
**Phase Control SCR**  
 150-175 Amperes  
 1600 Volts



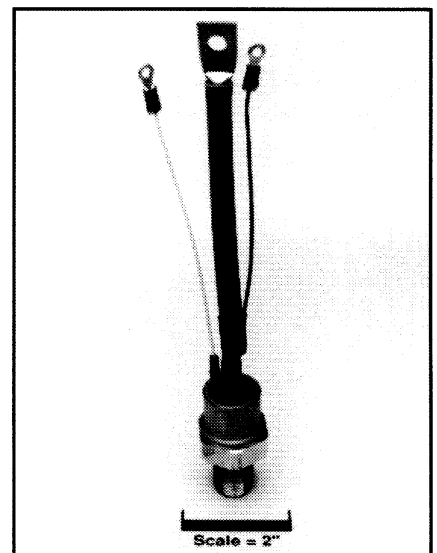
T600 (Outline Drawing)



T610 (Outline Drawing)



**T600 Phase Control SCR**  
 150-175 Amperes, 1300-1600 Volts



**T610 Phase Control SCR**  
 150-175 Amperes, 100-1200 Volts

### Ordering Information:

Select the complete eight digit part number you desire from the table, i.e. T6101215 is a 1200 Volt, 150 Ampere Phase Control SCR.

Type	Voltage		Current	
	V <sub>DRM</sub>	V <sub>RRM</sub> Code	I <sub>T(av)</sub>	Code
T610	100	01	150	15
	200	02		
	300	03		
	400	04		
	500	05		
	600	06		
	700	07		
	800	08		
	900	09		
	1000	10		
	1100	11		
	1200	12		
T600	1300	13		
	1400	14		
	1500	15		
	1600	16		

### 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
- Welders

### 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.



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

T600/T610  
 Phase Control SCR  
 150-175 Amperes, 1600 Volts

### Absolute Maximum Ratings

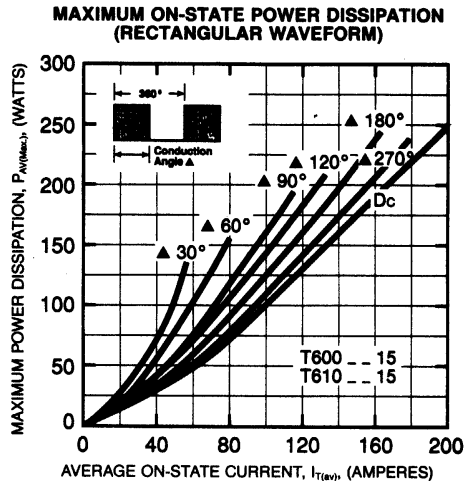
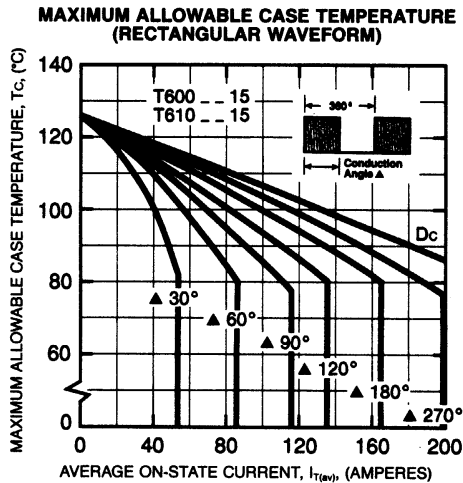
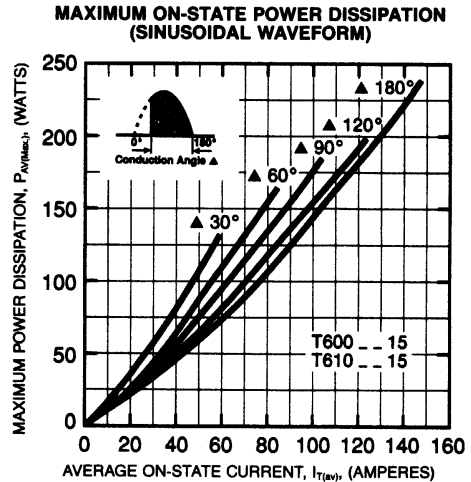
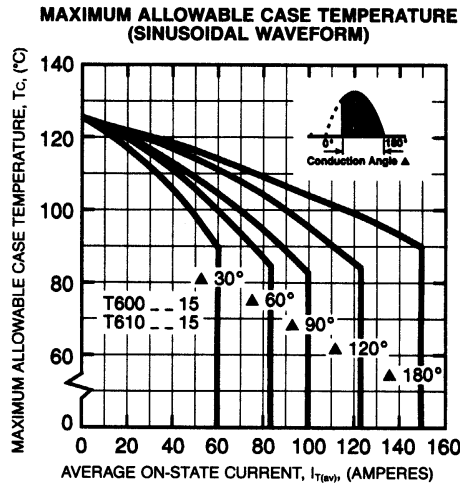
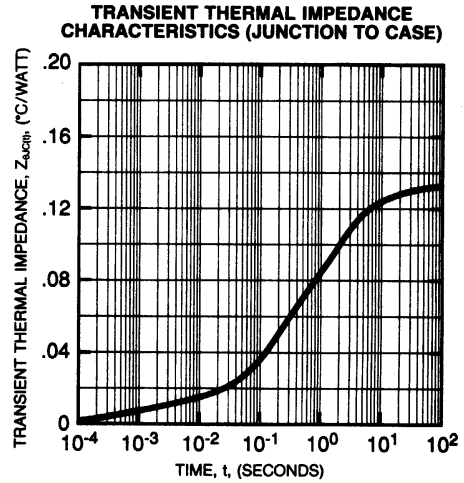
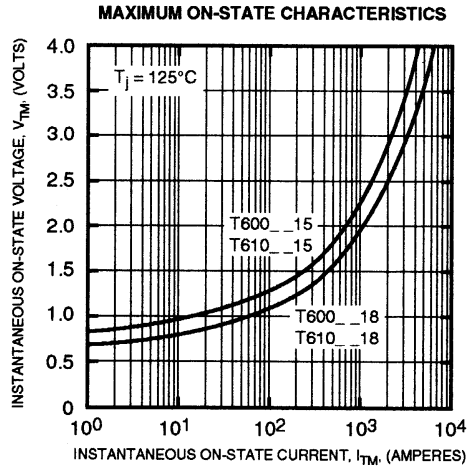
	Symbol	T600 -- 15 T610 -- 15	T600 -- 18 T610 -- 18	Units
RMS On-State Current	$I_{T(RMS)}$	235	275	Amperes
Average On-State Current	$I_{T(av)}$	150	175	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	$I_{TSM}$	4000	5500	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	$I_{TSM}$	3650	5000	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	$di/dt$	800	800	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	$I^2t$	66,000	120,000	A <sup>2</sup> sec
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		300	300	in.-lb.
Mounting Torque (Lubricated)		340	340	kg-cm

### Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	T600 -- 15	T600 -- 18	Units
			T610 -- 15	T610 -- 18	
<b>Current—Conducting State Maximums</b>					
Peak On-State Voltage	$V_{TM}$	$T_J = 25^\circ\text{C}, I_T = 625\text{A}$	1.8	1.55	Volts
			<b>T600/T610</b>		
<b>Voltage—Blocking State Maximums</b>					
Forward Leakage, Peak	$I_{DRM}$	$T_J = 125^\circ\text{C}, V_{DRM} = \text{rated}$	25		mA
Reverse Leakage, Peak	$I_{RRM}$	$T_J = 125^\circ\text{C}, V_{RRM} = \text{rated}$	25		mA
<b>Switching</b>					
Typical Turn-Off Time	$t_q$		100		$\mu$ sec
Typical Turn-On Time	$t_{on}$	$I_T = 100\text{A}, V_D = 100\text{V}$	5		$\mu$ sec
Min. Critical $dv/dt$ exponential to $V_{DRM}$	$dv/dt$	$T_J = 125^\circ\text{C}$	300		V/ $\mu$ sec
<b>Thermal</b>					
Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$		0.13		°C/Watt
Case to Sink, Lubricated	$R_{\theta CS}$		0.75		°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	$V_{GDM}$	$T_J = 125^\circ\text{C}, V_{DRM} = \text{rated}$	0.15		Volts
Peak Forward Gate Current	$I_{GTM}$		4		Amperes
Peak Reverse Gate Voltage	$V_{GRM}$		5		Volts

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

**T600/T610**  
**Phase Control SCR**  
 150-175 Amperes, 1600 Volts



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

**T600/T610**  
**Phase Control SCR**  
 150-175 Amperes, 1600 Volts

