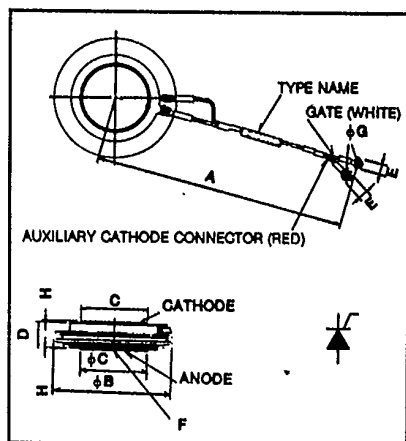


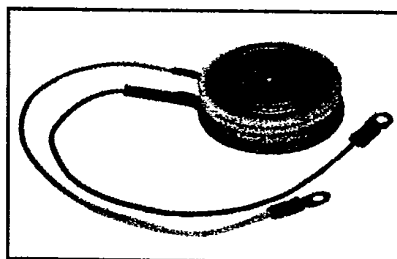
**POWEREX**

Powerex, Inc. Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

Powerex Europe, S.A., 428 Ave. G. Durand, BP107, 72003 LeMans, France (43) 72.75.15

**FT1000A****Phase Control SCR****1000 Amperes Avg****800-2500 Volts****FT1000A**  
**Outline Drawing**

Dimensions	Inches	Metric
A	11.62 ± .40	295 ± 10
φB	3.622	92
φC	1.968	50
D	.83 ± .02	21 ± 0.5
E	.30	7.5
F	M5	M5 × 0.8
φG	.169	4.3
H	.015 Min	0.4 Min

**FT1000A**  
**Phase Control SCR**  
1000 Amperes/800-2500 Volts**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
- ☐ Light Dimmers
- ☐ VAR Generators

**Ordering Information**

Example: Select the complete nine digit part number you desire from the table - i.e. FT1000A-20 is a 1000 Volt, 1000 Ampere Phase Control SCR.

Type	Voltage*		Current
	V <sub>ORM</sub> V <sub>RRM</sub>	Code	
FT1000A	800	-16	1000
	1000	-20	
	1200	-24	
	1400	-28	
	1600	-32	
	1800	-36	
	2000	-40	
	2500	-50	

\*Voltage classes 32, 40, and 50 are standard products.



Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

Powerex Europe, S.A., 428 Ave. G. Durand, BP107, 72003 LeMans, France (43) 72.75.15

FT1000A

Phase Control SCR

1000 Amperes Avg/800-2500 Volts

### Absolute Maximum Ratings

	Symbol	FT1000A	Units
RMS On-State Current	$I_{T(RMS)}$	1550	Amperes
Average On-State Current	$I_{T(av)}$	1000	Amperes
Peak One-Cycle Surge (Non Repetitive) On-State Current (60Hz)	$I_{TSM}$	18,000	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	$I_{TSM}$	16,450	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	$di/dt$	500	Amperes/ $\mu$ s
Critical Rate-of-Rise of On-State Current (Repetitive)	$di/dt$	200	Amperes/ $\mu$ s
$I^2t$ (for Fusing), one cycle at 60Hz	$I^2t$	$1.4 \times 10^6$	A <sup>2</sup> sec
Peak Gate Power Dissipation	$P_{GM}$	10	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
Mounting Force <sup>Ⓢ</sup>		5900 to 7300	lb.
Mounting Force <sup>Ⓢ</sup>		2700 to 3300	kg

Ⓢ Consult recommended mounting procedures.



Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

Powerex Europe, S.A., 428 Ave. G. Durand, BP107, 72003 LeMans, France (43) 72.75.15

FT1000A

Phase Control SCR

1000 Amperes Avg/800-2500 Volts

### Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	FT1000A	Units
<b>Voltage—Blocking State Maximums</b>				
Forward Leakage, Peak	$I_{DRM}$	$T_J = 125^\circ\text{C}$ , $V_{DRM}$ applied	80	mA
Reverse Leakage, Peak	$I_{RRM}$	$T_J = 125^\circ\text{C}$ , $V_{RRM}$ applied	80	mA
<b>Current—Conducting State Maximums</b>				
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 3200\text{A}$ , $T_J = 125^\circ\text{C}$	2.10	Volts
<b>Switching</b>				
Min. Critical dv/dt exponential to $V_{DRM}$	dv/dt	$T_J = 125^\circ\text{C}$ , $V_D = \frac{1}{2}V_{DRM}$	200	V/ $\mu\text{sec}$
<b>Thermal</b>				
Maximum Thermal Resistance, <sup>①</sup> double sided cooling Junction to Sink	$R_{\theta JS}$		.025	$^\circ\text{C}/\text{Watt}$
<b>Gate—Maximum Parameters</b>				
Gate Current to Trigger	$I_{GT}$	$V_D = 6\text{V}$ , $T_J = 25^\circ\text{C}$ , $R_L = 2\Omega$	250	mA
Gate Voltage to Trigger	$V_{GT}$	$V_D = 6\text{V}$ , $T_J = 25^\circ\text{C}$ , $R_L = 2\Omega$	2.5	Volts
Non-Triggering Gate Voltage	$V_{GDM}$	$T_J = 125^\circ\text{C}$ , $V_D = \frac{1}{2}V_{DRM}$	.20	Volts
Peak Forward Gate Current	$I_{GTM}$		4.0	Amperes
Peak Reverse Gate Voltage	$V_{GRM}$		10	Volts

① Consult recommended mounting procedures.



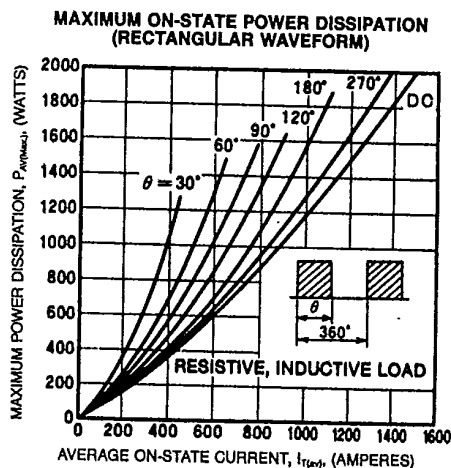
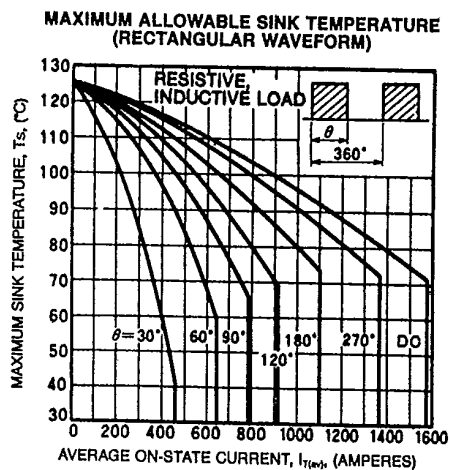
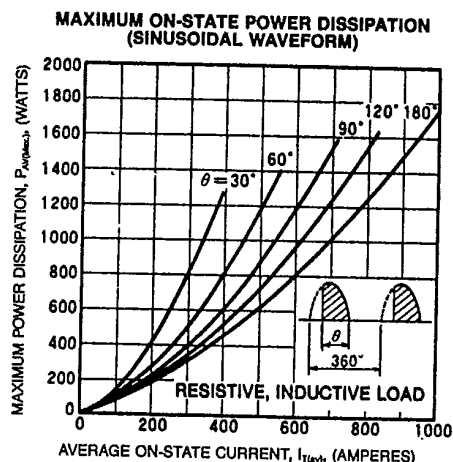
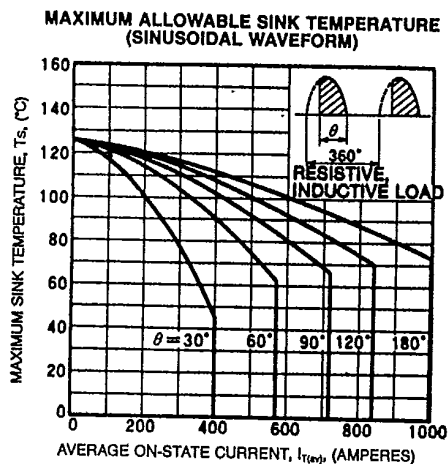
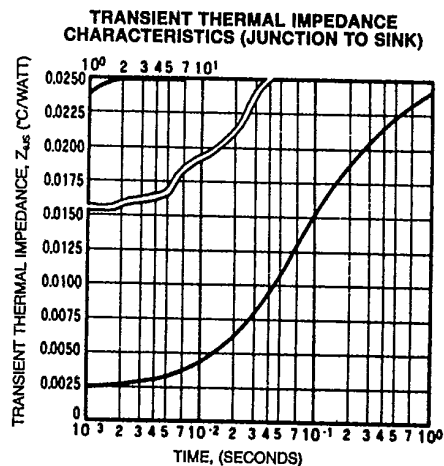
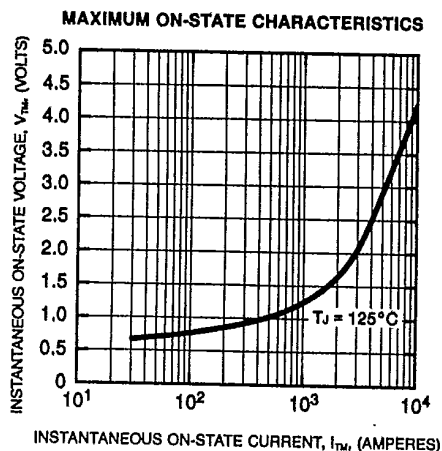
Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

Powerex Europe, S.A., 428 Ave. G. Durand, BP107, 72003 LeMans, France (43) 72.75.15

FT1000A

Phase Control SCR

1000 Amperes Avg/800-2500 Volts



# POWEREX

Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

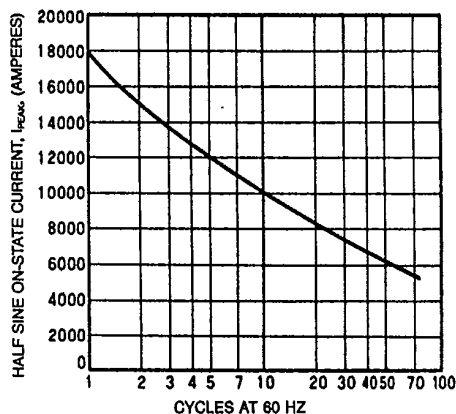
Powerex Europe, S.A., 428 Ave. G. Durand, BP107, 72003 LeMans, France (43) 72.75.15

FT1000A

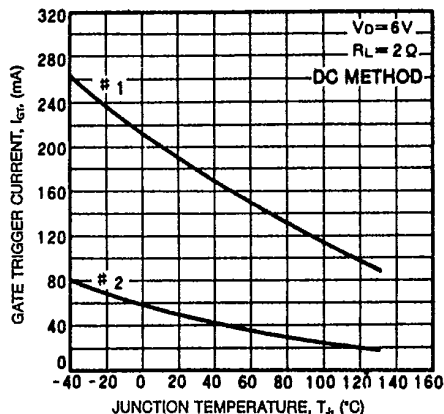
Phase Control SCR

1000 Amperes Avg/800-2500 Volts

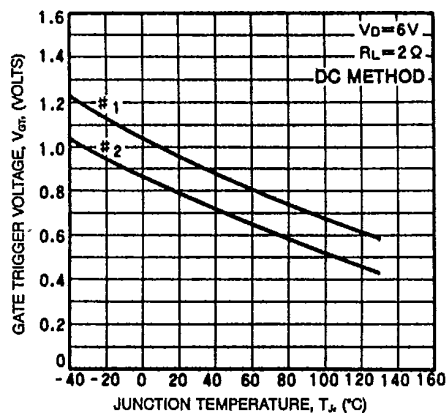
MAXIMUM ALLOWABLE SURGE ON-STATE  
CURRENT (NON-REPETITIVE)



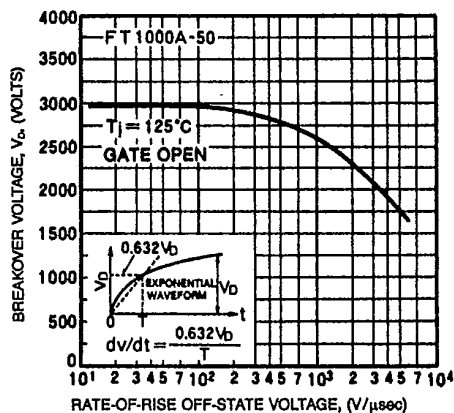
GATE TRIGGER CURRENT  
(TYPICAL)



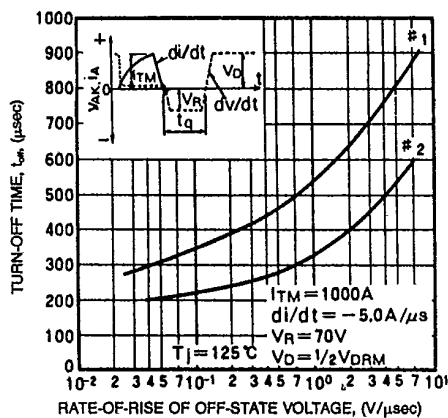
GATE TRIGGER VOLTAGE  
(TYPICAL)



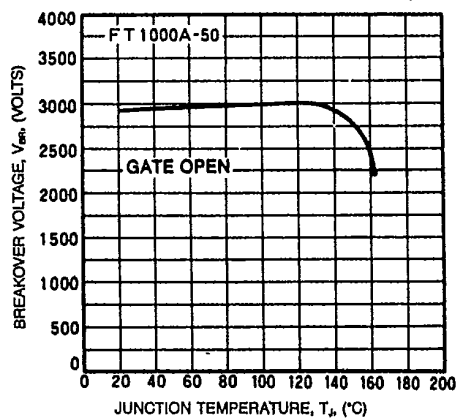
BREAKOVER VOLTAGE  
(TYPICAL)



TURN-OFF TIME VS. RATE-OF-RISE



BREAKOVER VOLTAGE  
vs. JUNCTION TEMPERATURE (TYPICAL)





Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

Powerex Europe, S.A., 428 Ave. G. Durand, BP107, 72003 LeMans, France (43) 72.75.15

FT1000A

Phase Control SCR

1000 Amperes Avg/800-2500 Volts

