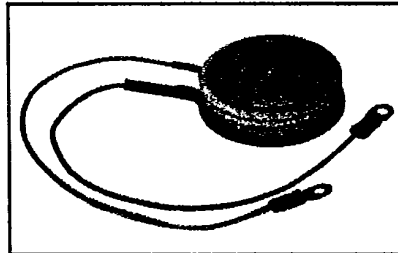
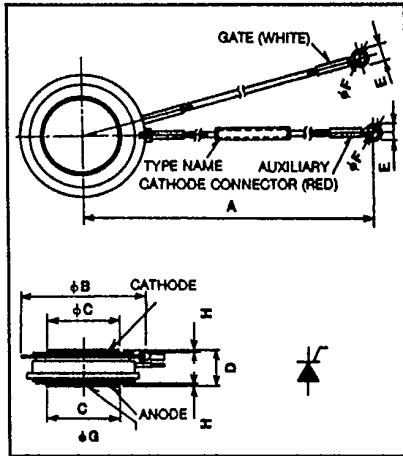




**FT500DL**

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

**Phase Control SCR**  
**500 Amperes Avg**  
**200-1400 Volts**



**FT500DL**  
**Phase Control SCR**  
 500 Amperes/200-1400 Volts

**FT500DL**  
**Outline Drawing**

Dimensions	Inches	Metric
A	16.93 ± .40	430 ± 10
φB	2.362 Max	60 Max
φC	1.260	32
D	.57 ± .02	14.5 ± 0.5
E	.30	7.5
φF	.169	4.3
φG	.165	4.2
H	.015 Min	0.4 Min

**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 eight or nine digit part number you desire from the table - i.e. FT500DL-12 is a 600 Volt, 500 Ampere Phase Control SCR.

Type	Voltage*		Current I <sub>T</sub> (avg)
	V <sub>ORM</sub> V <sub>RRM</sub>	Code	
FT500DL	200	-4	500
	300	-6	
	400	-8	
	500	-10	
	600	-12	
	800	-16	
	1000	-20	
	1200	-24	
	1400	-28	

\*Voltage classes 12, 16, 24, and 28 are standard products.



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**FT500DL**

Phase Control SCR

500 Amperes Avg/200-1400 Volts

**Absolute Maximum Ratings**

	Symbol	FT500DL	Units
RMS On-State Current	$I_{T(RMS)}$	790	Amperes
Average On-State Current	$I_{T(av)}$	500	Amperes
Peak One-Cycle Surge (Non Repetitive) On-State Current (60Hz)	$I_{TSM}$	10,000	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	$I_{TSM}$	9100	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	$I^2t$	$4.2 \times 10^5$	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>		3000 to 4000	lb.
Mounting Force <sup>Ⓞ</sup>		1350 to 1800	kg

Ⓞ Consult recommended mounting procedures.



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**FT500DL****Phase Control SCR**

500 Amperes Avg/200-1400 Volts

**Electrical and Thermal Characteristics**

Characteristics	Symbol	Test Conditions	FT500DL	Units
<b>Voltage—Blocking State Maximums</b>				
Forward Leakage, Peak	$I_{DRM}$	$T_J = 125^\circ\text{C}$ , $V_{DRM}$ applied	30	mA
Reverse Leakage, Peak	$I_{RRM}$	$T_J = 125^\circ\text{C}$ , $V_{RRM}$ applied	30	mA
<b>Current—Conducting State Maximums</b>				
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 1500\text{A}$ , $T_J = 125^\circ\text{C}$	1.75	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>ⓐ</sup> double sided cooling Junction to Sink	$R_{\theta JS}$		.05	$^\circ\text{C}/\text{Watt}$
<b>Gate—Maximum Parameters</b>				
Gate Current to Trigger	$I_{GT}$	$V_D = 6\text{V}$ , $R_L = 2\Omega$	250	mA
Gate Voltage to Trigger	$V_{GT}$	$T_J = 25^\circ\text{C}$ , $V_D = 6\text{V}$ , $R_L = 2\Omega$	2.5	Volts
Non-Triggering Gate Voltage	$V_{GDM}$	$T_J = 125^\circ\text{C}$ , $V_D = \frac{1}{2}V_{DRM}$ , rated	.20	Volts
Peak Forward Gate Current	$I_{GTM}$		4.0	Amperes
Peak Reverse Gate Voltage	$V_{GRM}$		5.0	Volts

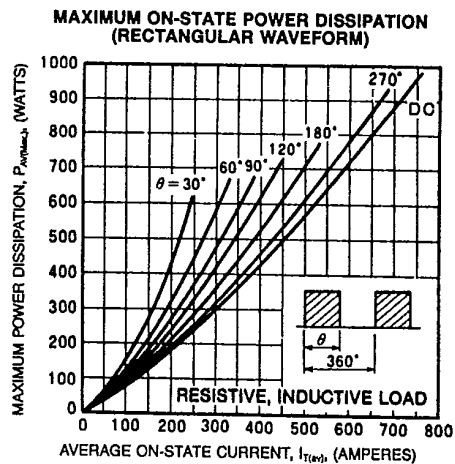
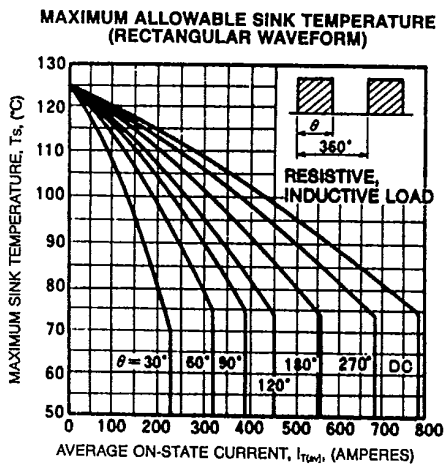
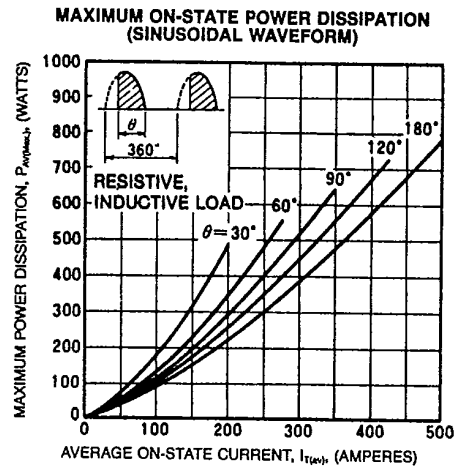
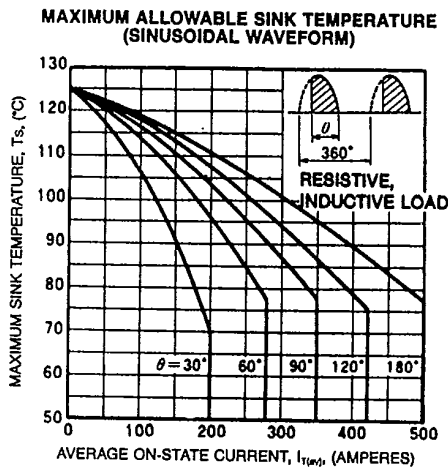
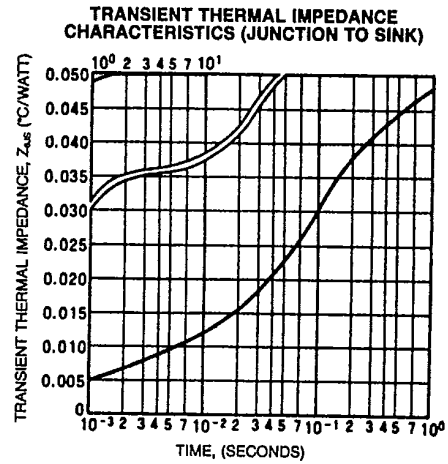
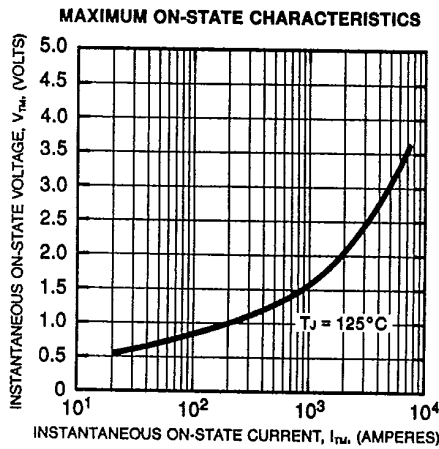
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