

POWEREX INC

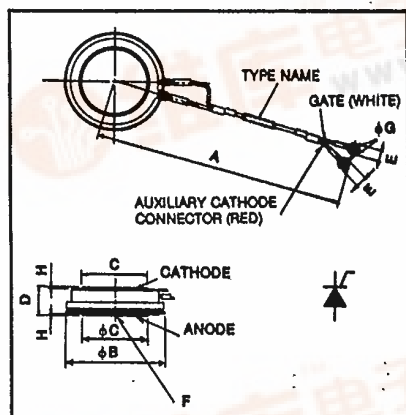
02 DE 7294621 0003102 0

T-25-21

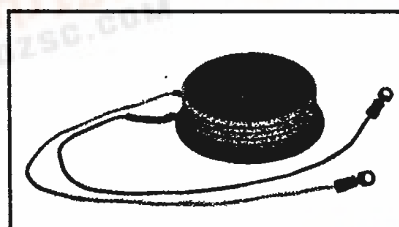
POWEREX**FT1500DL**

Powerex, Inc. Hillis Street, Youngwood, Pennsylvania 15897 (412) 925-7272

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

Phase Control SCR**1500 Amperes Avg****200-1200 Volts****FT1500DL
Outline Drawing**

Dimensions	Inches	Metric
A	11.62 ± .40	295 ± 10
φB	3.031	77
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

**FT1500DL
Phase Control SCR
1500 Amperes/200-1200 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 I²t Ratings

Applications:

- ☐ Power Supplies
- ☐ Battery Chargers
- ☐ Motor Control
- ☐ Light Dimmers
- ☐ VAR Generators

Ordering Information

Example: Select the complete nine or ten digit part number you desire from the table - i.e. FT1500DL-12 is a 600 Volt, 1500 Ampere Phase Control SCR.

Type	Voltage*		Current
	V _{ORM} V _{RRM}	Code	
FT1500DL	200	-4	1500
	300	-6	
	400	-8	
	600	-12	
	800	-16	
	1000	-20	
	1200	-24	

*Voltage classes 8, 12, 16, and 24 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

FT1500DL

Phase Control SCR

1500 Amperes Avg/200-1200 Volts

Absolute Maximum Ratings

	Symbol	FT1500DL	Units
RMS On-State Current	$I_{T(RMS)}$	2350	Amperes
Average On-State Current	$I_{T(av)}$	1500	Amperes
Peak One-Cycle Surge (Non Repetitive) On-State Current (60Hz)	I_{TSM}	25,000	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	I_{TSM}	22,800	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	di/dt	500	Amperes/ μ s
Critical Rate-of-Rise of On-State Current (Repetitive)	di/dt	200	Amperes/ μ s
I^2t (for Fusing), One Cycle at 60Hz	I^2t	2.6×10^6	A ² 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 ^①		5900 to 7300	lb.
Mounting Force ^①		2700 to 3300	kg

Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	FT1500DL	Units
Voltage—Blocking State Maximums				
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
Current—Conducting State Maximums				
Peak On-State Voltage	V_{TM}	$I_{TM} = 4700\text{A}$, $T_J = 125^\circ\text{C}$	1.75	Volts
Switching				
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/ μ sec
Thermal				
Maximum Thermal Resistance, ^① double sided cooling Junction to Sink	$R_{\theta JS}$		.025	°C/Watt
Gate—Maximum Parameters				
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}	$T_J = 125^\circ\text{C}$, $V_D = \frac{1}{2}V_{DRM}$	.25	Volts
Peak Forward Gate Current	I_{GTM}		4	Amperes
Peak Reverse Gate Voltage	V_{GRM}		10	Volts

① Consult recommended mounting procedures.

POWEREX

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

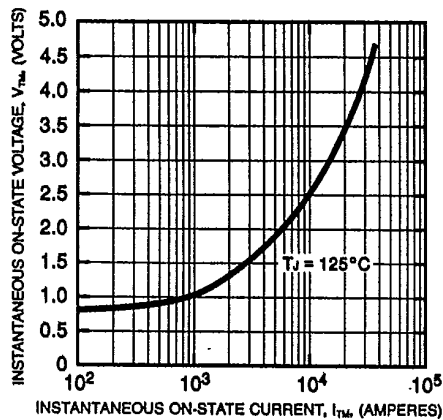
Powerex Europe, S.A., 428 Ave. G. Durand, BP107, 72003 LeMans, France (43) 72.75.15

FT1500DL

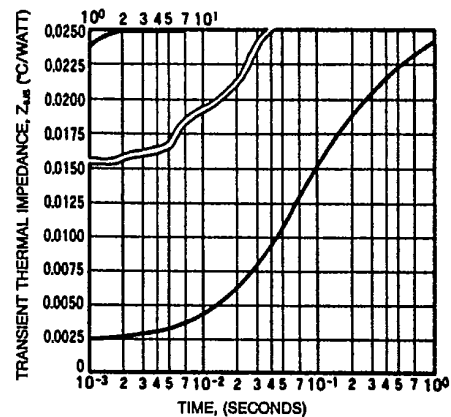
Phase Control SCR

1500 Amperes Avg/200-1200 Volts

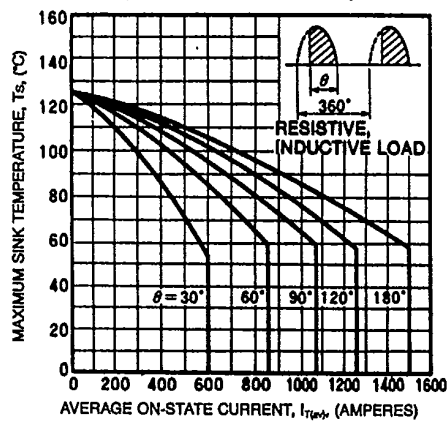
MAXIMUM ON-STATE CHARACTERISTICS



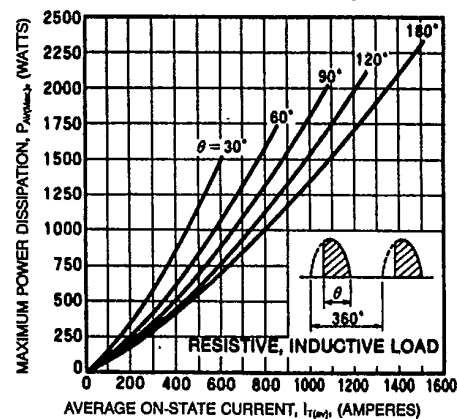
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO SINK)



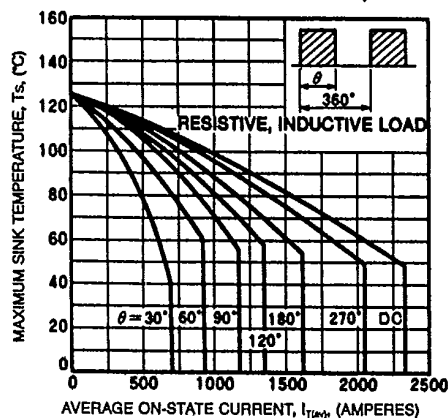
MAXIMUM ALLOWABLE SINK TEMPERATURE (SINUSOIDAL WAVEFORM)



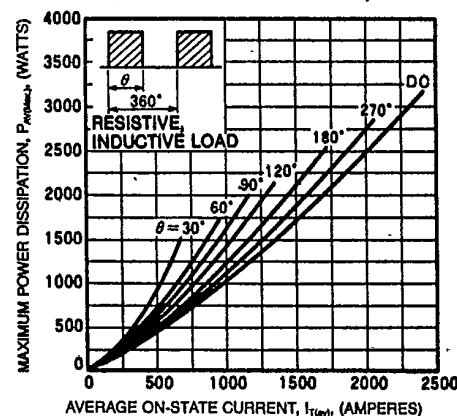
MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE SINK TEMPERATURE (RECTANGULAR WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)



POWEREX INC

02 DE 7294621 0003105 6

T-25-21

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

FT1500DL

Phase Control SCR

1500 Amperes Avg/200-1200 Volts

