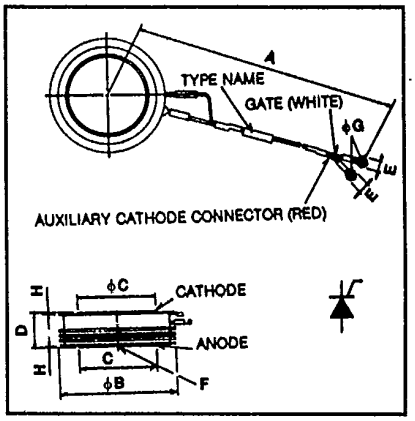
POWEREX

FT2500BH

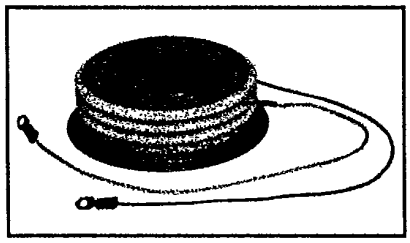
Powerex, Inc. Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272
Powerex Europe, S.A., 428 Ave. G. Durand, BP107, 72003 LeMans, France (43) 72.75.15

Phase Control SCR
2500 Amperes Avg
1600-2800 Volts



FT2500BH
Outline Drawing

Dimensions	Inches	Metric
A	17.13 ± 40	435 ± 10
ϕB	4.73 Max	120 Max
ϕC	3.15	80
D	1.38 ± .02	35 ± 0.5
E	.30	7.5
F	M5	M5 × 0.8
ϕG	.169	4.3
H	.015 Min	0.4 Min



FT2500BH
Phase Control SCR
2500 Amperes/1600-2800 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^2t Ratings

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

Ordering Information
Example: Select the complete ten digit part number you desire from the table – i.e. FT2500BH-40 is a 2000 Volt, 2500 Ampere Phase Control SCR.

Type	Voltage		Current
	V_{DRM} V_{RRM}	Code	I_T (avg)
FT2500BH	1600	-32	2500
	1800	-36	
	2000	-40	
	2500	-50	
	2800	-56	

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Absolute Maximum Ratings

	Symbol	FT2500BH	Units
RMS On-State Current	$I_{T(RMS)}$	3900	Amperes
Average On-State Current	$I_{T(av)}$	2500	Amperes
Peak One-Cycle Surge (Non Repetitive) On-State Current (60Hz)	I_{TSM}	50×10^3	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	I_{TSM}	45.6×10^3	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	di/dt	600	Amperes/μs
Critical Rate-of-Rise of On-State Current (Repetitive)	di/dt	250	Amperes/μs
I^2t (for Fusing), one cycle at 60Hz	I^2t	1.0×10^7	A^2sec
Peak Gate Power Dissipation	P_{GM}	30	Watts
Average Gate Power Dissipation	$P_{G(av)}$	8	Watts
Storage Temperature	T_{STG}	−40 to 150	°C
Operating Temperature	T_J	−40 to 125	°C
Mounting Force①		8800 to 11,400	lb.
Mounting Force①		4000 to 5200	kg

Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	FT2500BH	Units
Voltage—Blocking State Maximums				
Forward Leakage, Peak	I_{DRM}	$T_J = 125°C$, V_{DRM} applied	300	mA
Reverse Leakage, Peak	I_{RRM}	$T_J = 125°C$, V_{RRM} applied	300	mA
Current—Conducting State Maximums				
Peak On-State Voltage	V_{TM}	$I_{TM} = 8000A$, $T_J = 125°C$	2.20	Volts
Switching				
Min. Critical dv/dt exponential to V_{DRM}	dv/dt	$T_J = 125°C$, $V_D = ½V_{DRM}$	1000	V/μsec
Thermal				
Maximum Thermal Resistance,① double sided cooling Junction to Sink	$R_{\theta JS}$		.01	°C/Watt
Gate—Maximum Parameters				
Gate Current to Trigger	I_{GT}	$V_D = 6V$, $T_J = 25°C$, $R_L = 2Ω$	250	mA
Gate Voltage to Trigger	V_{GT}	$V_D = 6V$, $T_J = 25°C$, $R_L = 2Ω$	3.5	Volts
Non-Triggering Gate Voltage	V_{GDM}	$T_J = 125°C$, $V_D = ½V_{DRM}$	.20	Volts
Peak Forward Gate Current	I_{GTM}		6	Amperes
Peak Reverse Gate Voltage	V_{GRM}		10	Volts

① Consult recommended mounting procedures.

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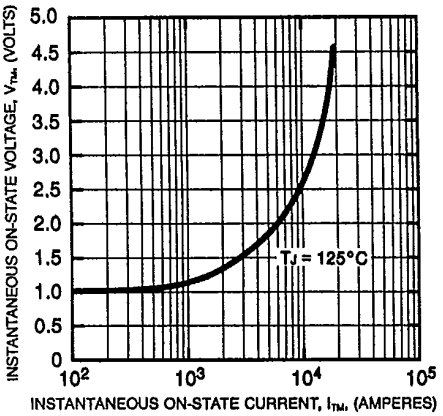
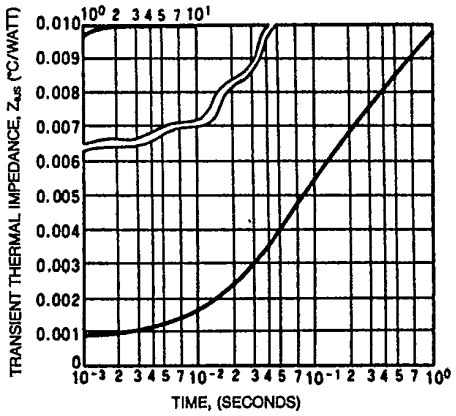
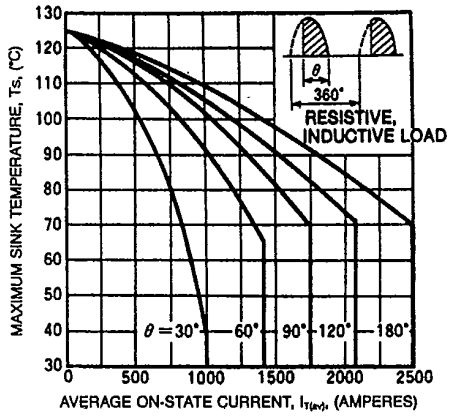
MAXIMUM ON-STATE CHARACTERISTICS



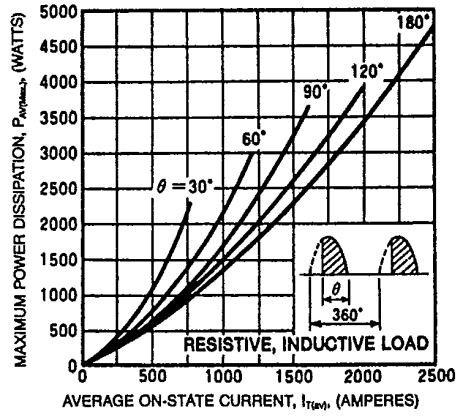
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO SINK)



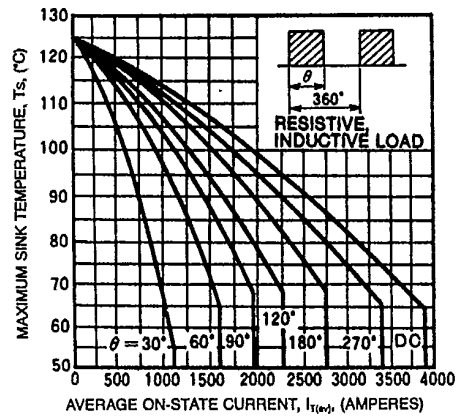
MAXIMUM ALLOWABLE SINK TEMPERATURE (SINUSOIDAL WAVEFORM)



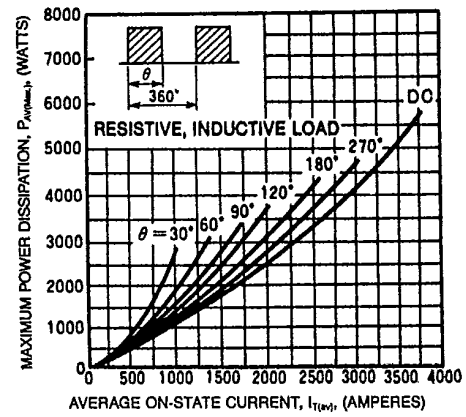
MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE SINK TEMPERATURE (RECTANGULAR WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)



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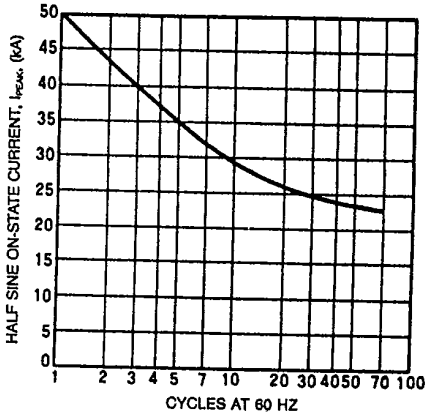
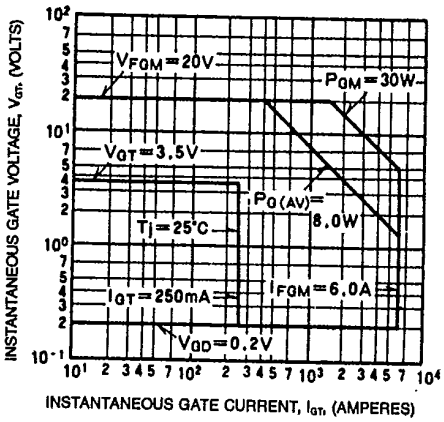
MAXIMUM ALLOWABLE SURGE ON-STATE CURRENT (NON-REPETITIVE)



GATE CHARACTERISTICS



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