

POWEREX INC

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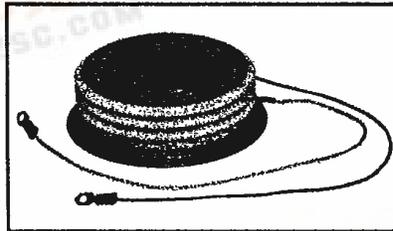
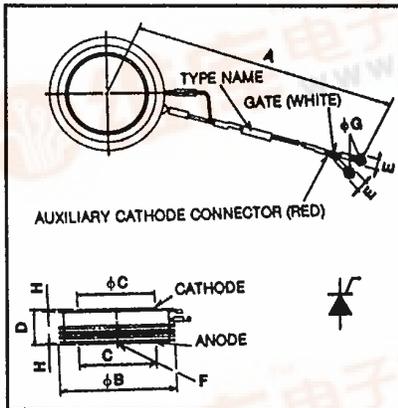
T-25-21

**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**  
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**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 ten digit part number you desire from the table - i.e. FT2500BH-40 is a 2000 Volt, 2500 Ampere Phase Control SCR.

**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

Type	Voltage		Current I <sub>r</sub> (avg)
	V <sub>ORM</sub> V <sub>RRM</sub>	Code	
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)	$I_{TSM}$	$50 \times 10^3$	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	$I_{TSM}$	$45.6 \times 10^3$	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	di/dt	600	Amperes/ $\mu$ s
Critical Rate-of-Rise of On-State Current (Repetitive)	di/dt	250	Amperes/ $\mu$ s
$I^2t$ (for Fusing), one cycle at 60Hz	$I^2t$	$1.0 \times 10^7$	A <sup>2</sup> sec
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 Force <sup>Ⓞ</sup>		8800 to 11,400	lb.
Mounting Force <sup>Ⓞ</sup>		4000 to 5200	kg

### Electrical and Thermal Characteristics

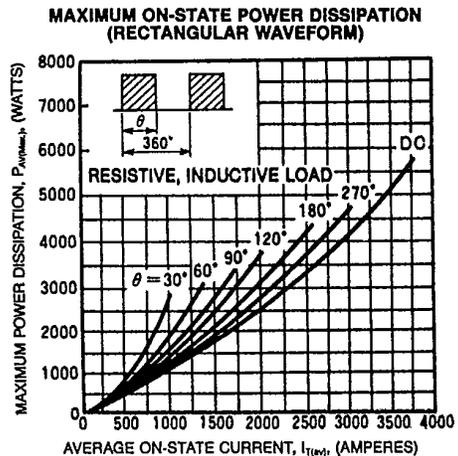
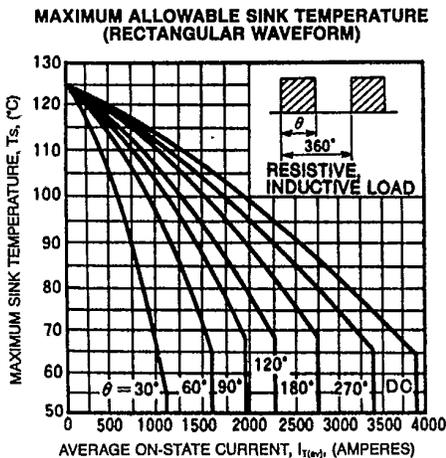
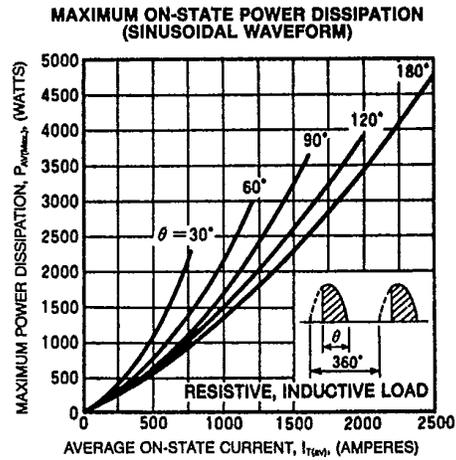
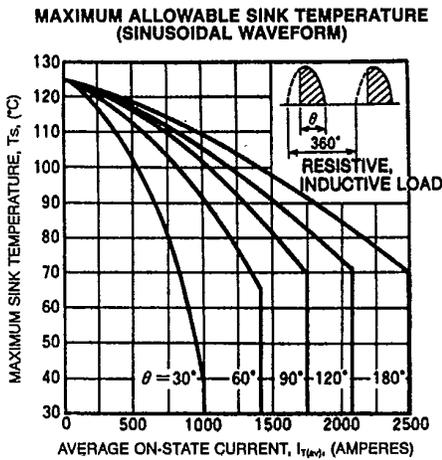
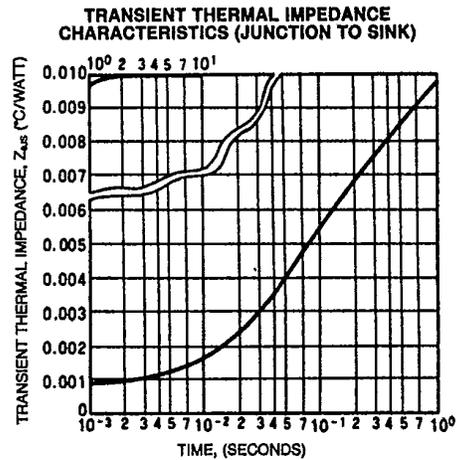
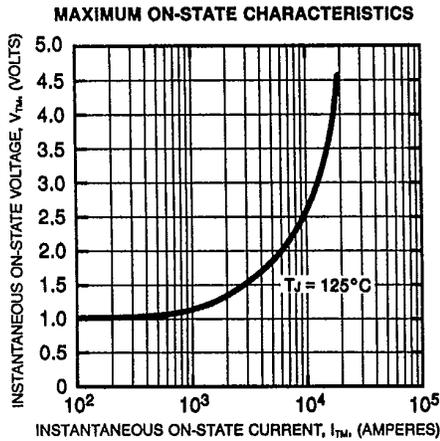
Characteristics	Symbol	Test Conditions	FT2500BH	Units
<b>Voltage—Blocking State Maximums</b>				
Forward Leakage, Peak	$I_{DRM}$	$T_J = 125^\circ\text{C}$ , $V_{DRM}$ applied	300	mA
Reverse Leakage, Peak	$I_{RRM}$	$T_J = 125^\circ\text{C}$ , $V_{RRM}$ applied	300	mA
<b>Current—Conducting State Maximums</b>				
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 8000\text{A}$ , $T_J = 125^\circ\text{C}$	2.20	Volts
<b>Switching</b>				
Min. Critical dv/dt exponential to $V_{DRM}$	dv/dt	$T_J = 125^\circ\text{C}$ , $V_D = \frac{1}{2}V_{DRM}$	1000	V/ $\mu$ sec
<b>Thermal</b>				
Maximum Thermal Resistance, <sup>Ⓞ</sup> double sided cooling Junction to Sink	$R_{\theta JS}$		.01	°C/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	$V_{GT}$	$V_D = 6\text{V}$ , $T_J = 25^\circ\text{C}$ , $R_L = 2\Omega$	3.5	Volts
Non-Trigging Gate Voltage	$V_{GDM}$	$T_J = 125^\circ\text{C}$ , $V_D = \frac{1}{2}V_{DRM}$	.20	Volts
Peak Forward Gate Current	$I_{GTM}$		6	Amperes
Peak Reverse Gate Voltage	$V_{GRM}$		10	Volts

<sup>Ⓞ</sup> Consult recommended mounting procedures.



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