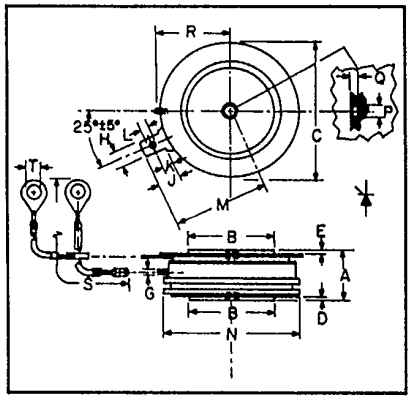
POWEREX

C430__X500

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

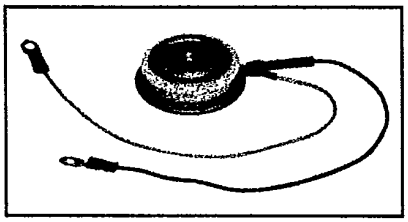
Phase Control SCR

800 Amperes Avg
100-600 Volts



C430__X500
Outline Drawing

Dimensions	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	.560	.605	14.22	15.37
B	.985	.995	25.01	25.27
C	1.600	1.650	40.64	41.91
D	.030	—	.76	—
E	.040	—	1.01	—
G	.057	.059	1.44	1.50
H	.186	.191	4.72	4.85
J	.245	.255	6.22	6.48
K	.115	.130	2.92	3.30
L	.064	.070	1.62	1.78
M	—	1.120	—	28.45
N	—	1.585	—	40.26
P	.135	.145	3.42	3.68
Q	.070	.084	1.77	2.13
R	—	.875	—	22.23
S	12.219	12.343	310.36	313.51
T	.137	.153	3.47	3.89



C430__X500
Phase Control SCR
800 Amperes/100-600 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 nine digit part number you desire from the table – i.e. C430DX500 is a 400 Volt, 800 Ampere Phase Control SCR.

Type	Voltage		Current
	V_{DRM} V_{RRM}	Code	I_T (avg)
C430__X500	100	A	800
	200	B	
	300	C	
	400	D	
	500	E	
	600	M	

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Absolute Maximum Ratings

	Symbol	C430__X500	Units
RMS On-State Current	$I_{T(RMS)}$	1250	Amperes
Average On-State Current	$I_{T(av)}$	800	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}	9125	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	di/dt	400	Amperes/µs
Critical Rate-of-Rise of On-State Current (Repetitive)	di/dt	150	Amperes/µs
I^2t (for Fusing), One Cycle at 60Hz	I^2t	415,000	A^2sec
Peak Gate Power Dissipation	P_{GM}	200	Watts
Average Gate Power Dissipation	$P_{G(av)}$	5	Watts
Storage Temperature	T_{STG}	−40 to 150	°C
Operating Temperature	T_J	−40 to 125	°C
Mounting Force①		800 to 2200	lb.
Mounting Force①		3.6 to 11.1	kN

① Consult recommended mounting procedures.

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Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	C430__X500	Units
Voltage—Blocking State Maximums				
Forward Leakage, Peak	I_{DRM}	$T_J = 125°C$, $V = V_{DRM}$	45	mA
Reverse Leakage, Peak	I_{RRM}	$T_J = 125°C$, $V = V_{RRM}$	45	mA
Current—Conducting State Maximums				
Peak On-State Voltage	V_{TM}	$I_{TM} = 3000A$, $T_C = 25°C$	1.9	Volts
Switching				
Typical Turn-Off Time	t_q	$T_J = 125°C$, $I_{TM} = 500A$; $V_R = 50V$ Min; V_{DRM} (Reapplied); Reapplied dv/dt = 20V/µsec (linear); Commutation di/dt = 25A/µsec; Repetition Rate = 1pps; Gate Bias during Turn-Off Interval = 0V, 100Ω	100	µsec
Typical Delay Time	t_d	$T_C = 25°C$, $I_T = 50A$; Gate Supply: 25 Volts, 20Ω, 0.1 µsec rise time	0.7	µsec
Min. Critical dv/dt exponential to V_{DRM}	dv/dt	$T_J = 125°C$, V_{DRM} rated, gate open	200	V/µsec
Thermal				
Maximum Thermal Resistance,① double sided cooling				
Junction to Case (2000 lb. force)	$R_{\theta JC}$		.04	°C/Watt
Case to Sink, Lubricated (2000 lb. force)	$R_{\theta CS}$		.02	°C/Watt
Gate—Maximum Parameters				
Gate Current to Trigger	I_{GT}	$V_D = 6Vdc$, $R_L = 3\Omega$, $T_J = 25°C$	125	mA
Gate Voltage to Trigger	V_{GT}	$T_J = -40°C$ to $125°C$, $V_D = 6Vdc$, $R_L = 3\Omega$	5	Volts
Non-Triggering Gate Voltage	V_{GDM}	$T_J = 125°C$, rated V_{DRM}	.15	Volts
Peak Forward Gate Current	I_{GTM}		4	Amperes
Peak Reverse Gate Voltage	V_{GRM}		5	Volts

① Consult recommended mounting procedures.

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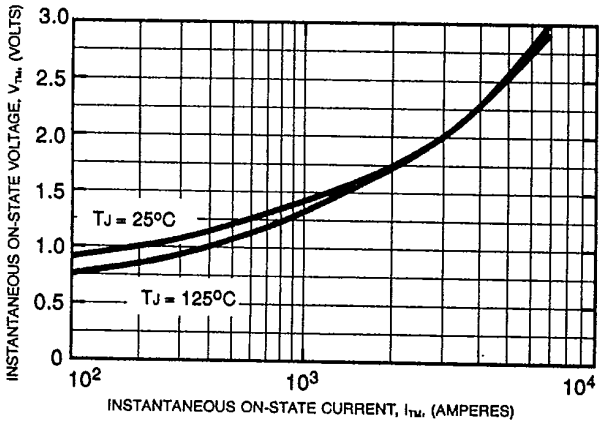
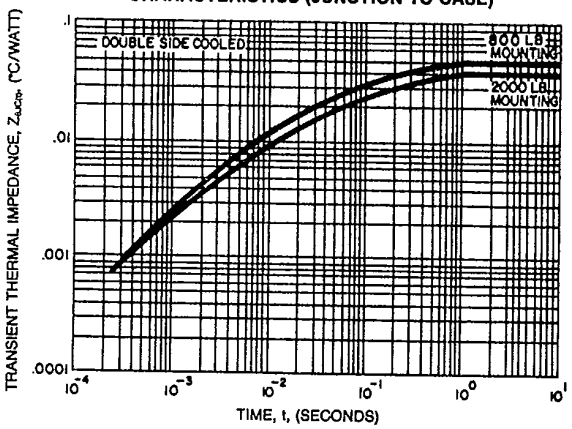
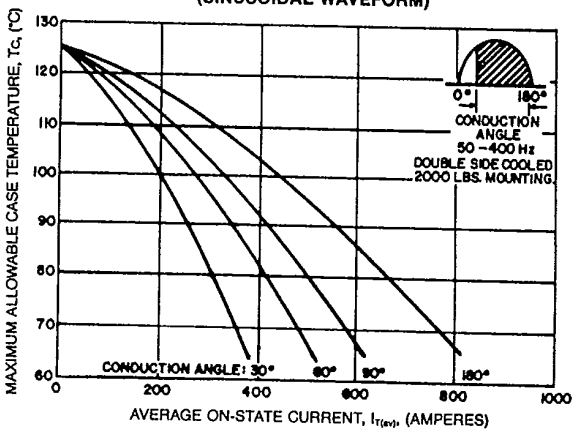
MAXIMUM ON-STATE CHARACTERISTICS



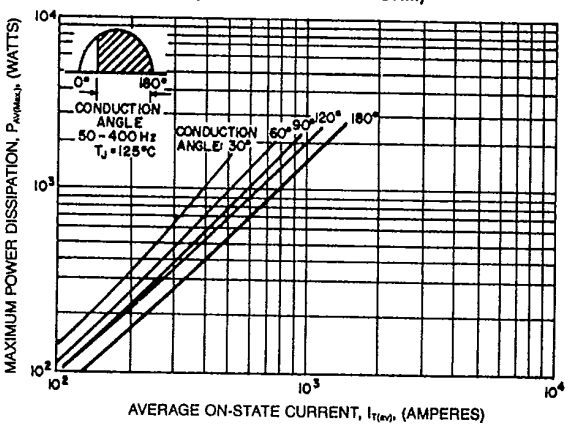
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO CASE)



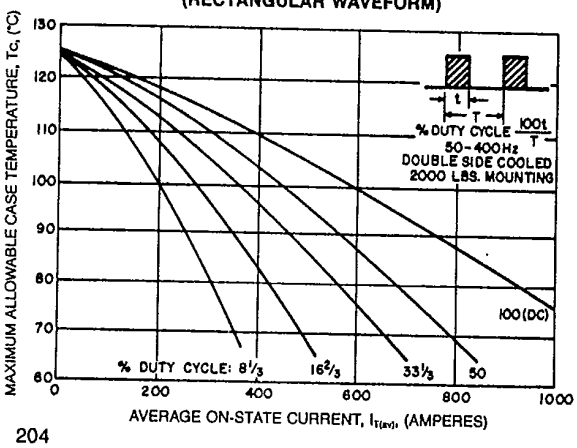
MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



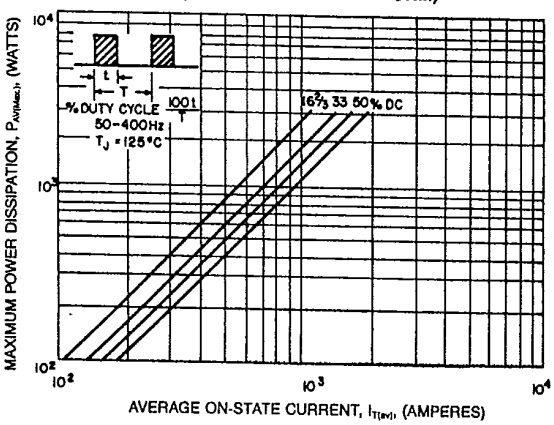
MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)



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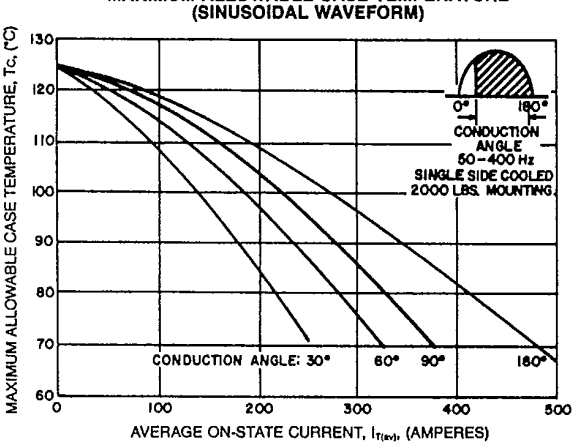
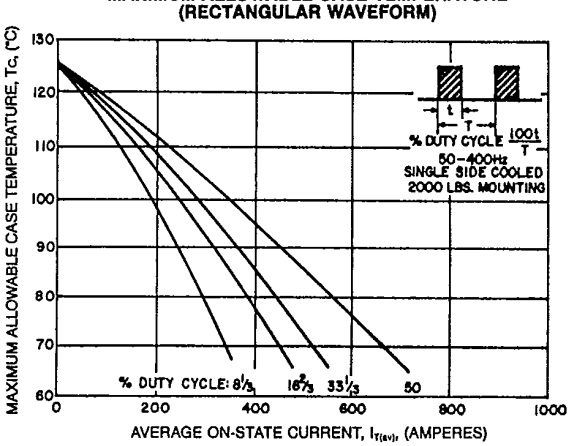
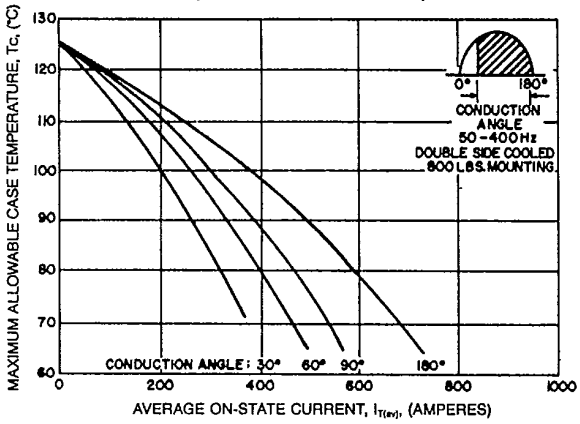


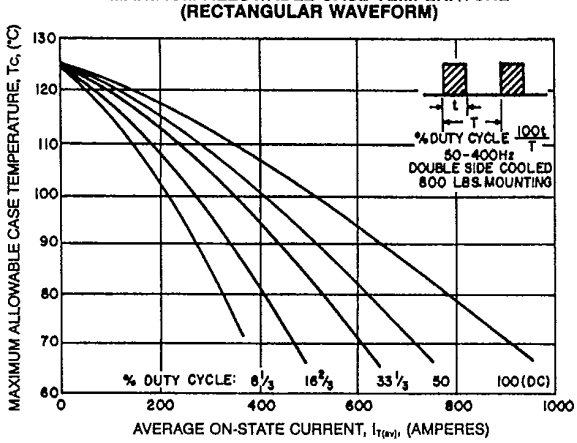
MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)



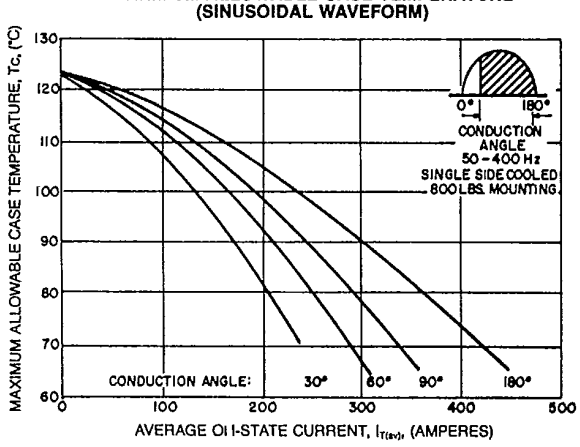
MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



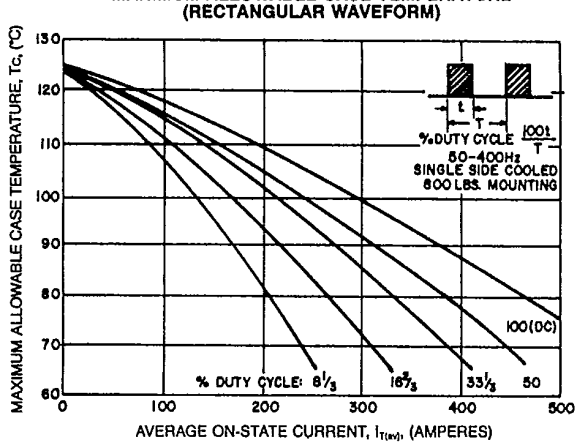
MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)



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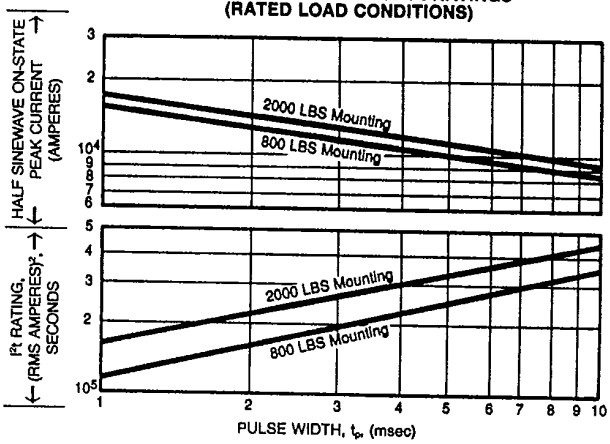
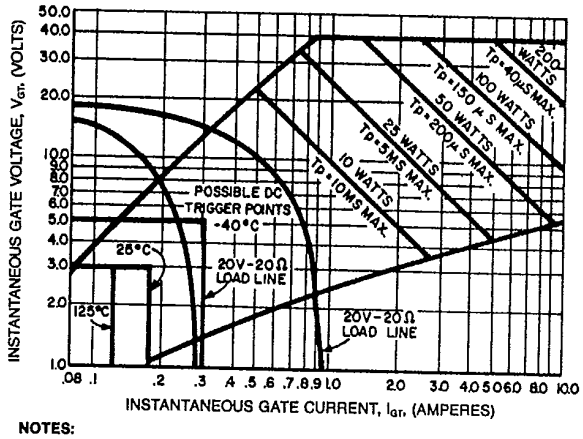
SUB-CYCLE SURGE AND I²t RATINGS (RATED LOAD CONDITIONS)



GATE CHARACTERISTICS



NOTES:

1. Maximum allowable average gate dissipation = 5 watts.
2. The locus of possible dc trigger points lie outside the boundaries shown at various case temperatures.
3. Tp = Rectangular gate current pulse width (5μs min. duration; 1.0μs max. rise time for 20V, 65Ω source).
4. 20V – 20Ω is the minimum gate source load line when rate of circuit current rise > 100 Amp/μs or anode rate of current rise > 200 Amps/μs (Tp = 5μs min., 0.5μs max. rise time).

   Maximum long-term repetitive anode di/dt = 500 Amps/μs with 20V – 20Ω gate source.

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

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Офис по работе с юридическими лицами:

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