

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[Powerex Inc.](#)
[CM530813](#)

For any questions, you can email us directly:

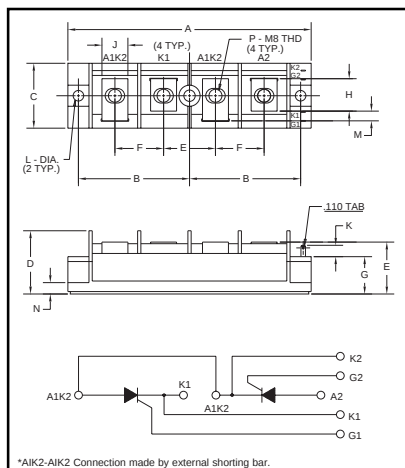
sales@integrated-circuit.com



CM530813

Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

Dual SCR POW-R-BLOK™ Modules 130 Amperes/800 Volts



Outline Drawing

Dimension	Inches	Millimeters
A	5.906	150
B	2.697±0.02	68.5±0.2
C	1.575	40
D	1.535	39
E	1.260	32
F	1.181	30
G	0.906	23
H	0.787	20
J	0.630	16
K	0.276	7
L	0.256±0.008 Dia. Dia. 6.5±0.2	
M	M8 Metric	M8



CM530813
Dual SCR POW-R-BLOK™ Modules
130 Amperes/800 Volts

Description:

Powerex Dual SCR POW-R-BLOK™ Modules are designed for use in applications requiring phase control and isolated packaging. The modules are isolated for easy mounting with other components on common heatsinks. POW-R-BLOK™ has been tested and recognized by Underwriters Laboratories (QQQX2 Power Switching Semi-conductors).

Features:

- ☐ Isolated Mounting
- ☐ Glass Passivated Chips
- ☐ Metal Baseplate
- ☐ Low Thermal Impedance
- ☐ UL Recognized

Applications:

- ☐ Battery Supplies
- ☐ Bridge Circuits
- ☐ AC and DC Motor Control
- ☐ Tap Changers
- ☐ Lighting Control

Ordering Information:

Select the complete eight digit module part number you desire from the table below.

Example: CM530813 is an 800 Volt, 130 Ampere Dual SCR POW-R-BLOK™ Module.

Type	Voltage Volts (x100)	Current Rating Amperes (x10)
CM53	08	13



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Absolute Maximum Ratings

Characteristics	Symbol	CM530813	Units
Peak Forward Blocking Voltage	V_{DRM}	800	Volts
Transient Peak Forward Blocking Voltage (Non-Repetitive), $t < 5ms$	V_{DSM}	960	Volts
DC Forward Blocking Voltage	$V_{D(DC)}$	640	Volts
Peak Reverse Blocking Voltage	V_{RRM}	800	Volts
Transient Peak Reverse Blocking Voltage (Non-Repetitive), $t < 5ms$	V_{RSM}	960	Volts
DC Reverse Blocking Voltage	$V_{R(DC)}$	640	Volts
RMS On-State Current	$I_T(RMS)$	205	Amperes
Average On-State Current, $T_C = 85^\circ C$	$I_T(AV)$	130	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	I_{TSM}	2600	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	I_{TSM}	2365	Amperes
I^2t (for Fusing), 8.3 milliseconds	I^2t	28000	A^2sec
Critical Rate-of-Rise of On-State Current*	di/dt	100	Amperes/ μs
Peak Gate Power Dissipation	P_{GM}	10	Watts
Average Gate Power Dissipation	$P_{G(AV)}$	3.0	Watts
Peak Forward Gate Voltage	V_{GFM}	10	Volts
Peak Reverse Gate Voltage	V_{GRM}	5.0	Volts
Peak Forward Gate Current	I_{GFM}	4.0	Amperes
Storage Temperature	T_{STG}	-40 to 125	$^\circ C$
Operating Temperature	T_j	-40 to 125	$^\circ C$
Maximum Mounting Torque M6 Mounting Screw	—	26	in.-lb.
Maximum Mounting Torque M8 Terminal Screw	—	72	in.-lb.
Module Weight (Typical)	—	300	Grams
V Isolation	V_{RMS}	2000	Volts

* $T_j = 125^\circ C$, $I_G = 1.0A$, $V_D = 1/2 V_{DRM}$

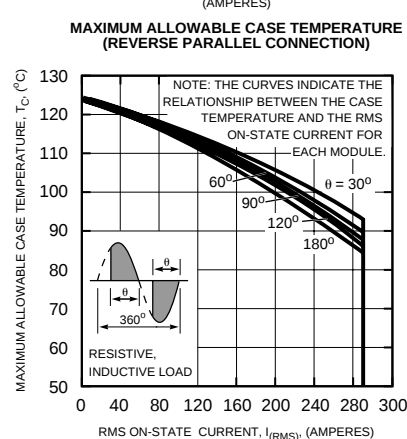
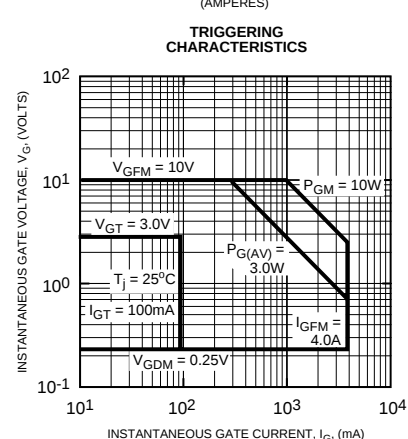
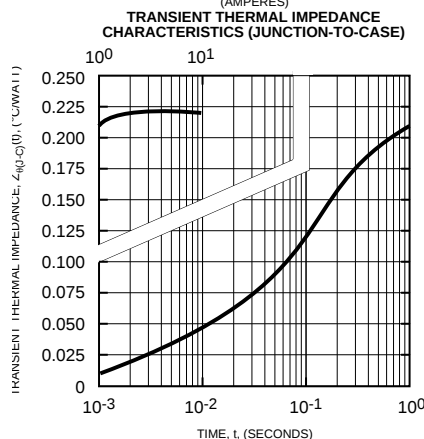
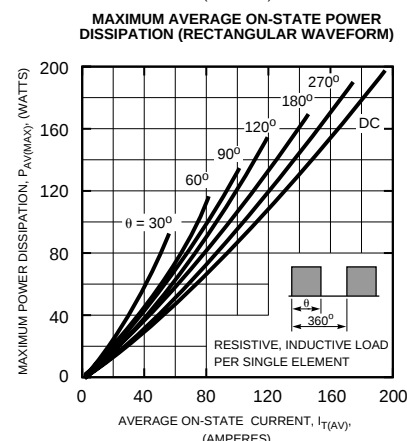
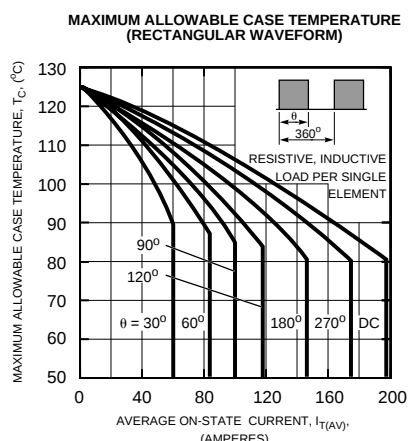
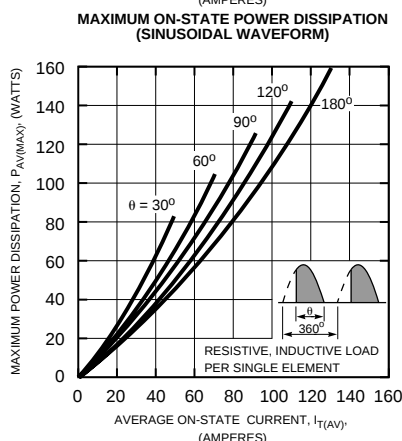
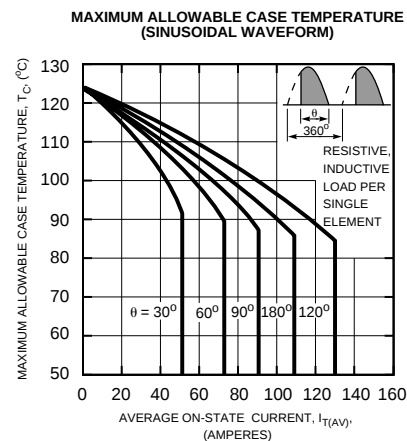
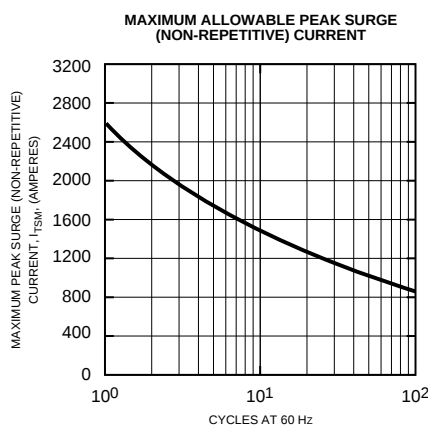
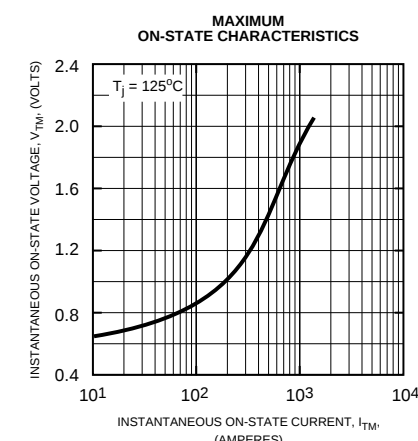
Electrical and Thermal Characteristics, $T_j = 25^\circ C$ unless otherwise specified

Characteristics	Symbol	Test Conditions	CM530813	Units
Blocking State Maximums				
Forward Leakage Current, Peak	I_{DRM}	$T_j = 125^\circ C$, $V_{DRM} = \text{Rated}$	30	mA
Reverse Leakage Current, Peak	I_{RRM}	$T_j = 125^\circ C$, $V_{RRM} = \text{Rated}$	30	mA
Conducting State Maximums				
Peak On-State Voltage	V_{TM}	$I_{TM} = 390A$	1.3	Volts
Switching Minimums				
Critical Rate-of-Rise of Off-State Voltage	dv/dt	$T_j = 125^\circ C$, $V_D = 2/3 V_{DRM}$	500	Volts/ μs
Thermal Maximums				
Thermal Resistance, Junction-to-Case	$R_{\theta(J-C)}$	Per Module	0.22	$^\circ C/Watt$
Thermal Resistance, Case-to-Sink (Lubricated)	$R_{\theta(C-S)}$	Per Module	0.05	$^\circ C/Watt$
Gate Parameters Maximums				
Gate Current-to-Trigger	I_{GT}	$V_D = 6V$, $R_L = 2\Omega$	100	mA
Gate Voltage-to-Trigger	V_{GT}	$V_D = 6V$, $R_L = 2\Omega$	3.0	Volts
Non-Triggering Gate Voltage	V_{GDM}	$T_j = 125^\circ C$, $V_D = 1/2 V_{DRM}$	0.25	Volts



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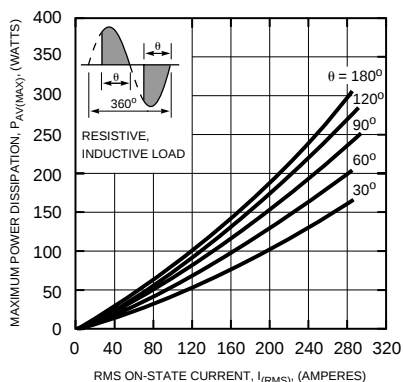
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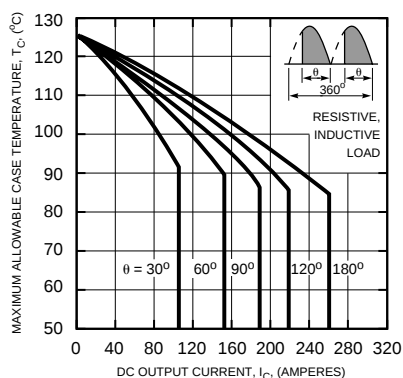
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**MAXIMUM ON-STATE POWER DISSIPATION
(REVERSE PARALLEL CONNECTION)**



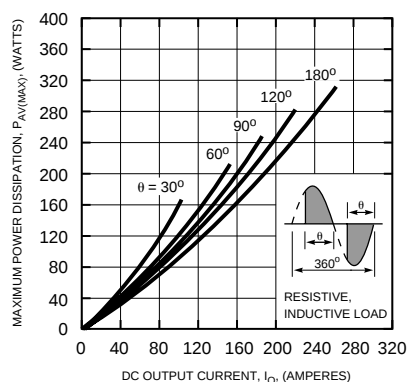
NOTE: THE CURVES INDICATE THE RELATIONSHIP BETWEEN THE AVERAGE ON-STATE POWER DISSIPATION PER MODULE AND THE RMS ON-STATE CURRENT.

**MAXIMUM ALLOWABLE CASE TEMPERATURE
(SINGLE PHASE BRIDGE CONNECTION)**



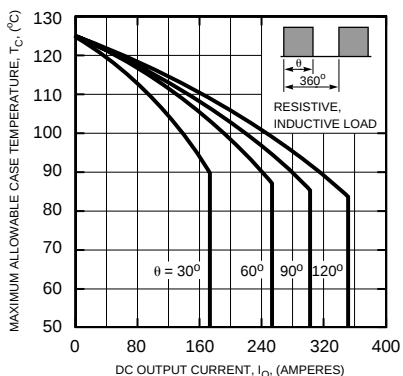
NOTE: THE CURVES INDICATE THE RELATIONSHIP BETWEEN THE CASE TEMPERATURE AND THE DC OUTPUT CURRENT (FOR TWO ELEMENTS) WHEN USED IN THE SINGLE PHASE BRIDGE CONFIGURATION.

**MAXIMUM ON-STATE POWER DISSIPATION
(SINGLE PHASE BRIDGE CONNECTION)**



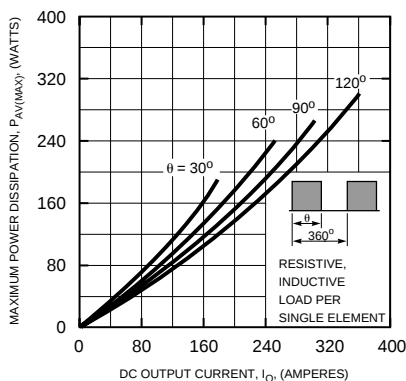
NOTE: THE CURVES INDICATE THE RELATIONSHIP BETWEEN THE AVERAGE ON-STATE POWER DISSIPATION AND THE DC OUTPUT CURRENT FOR THE SINGLE PHASE BRIDGE CONFIGURATION (POWER DISSIPATION EXPRESSED FOR EACH MODULE AND DC OUTPUT CURRENT EXPRESSED FOR THE PAIR)

**MAXIMUM ALLOWABLE CASE TEMPERATURE
(THREE PHASE BRIDGE CONNECTION)**



NOTE: THE CURVES INDICATE THE RELATIONSHIP BETWEEN THE CASE TEMPERATURE AND THE DC OUTPUT CURRENT (FOR THREE MODULES) IN THE THREE PHASE CONFIGURATION.

**MAXIMUM ON-STATE POWER DISSIPATION
(THREE PHASE BRIDGE CONNECTION)**



NOTE: THE CURVES INDICATE THE RELATIONSHIP BETWEEN THE ON-STATE POWER DISSIPATION (PER MODULE) AND THE DC OUTPUT CURRENT (FOR THREE MODULES) IN THE THREE PHASE BRIDGE CONFIGURATION.