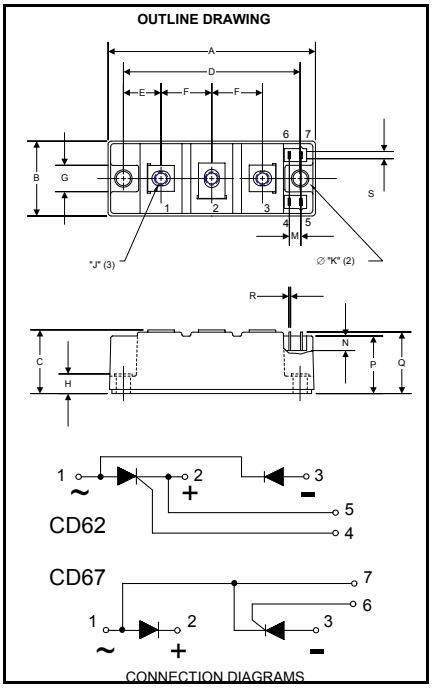
Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (724) 925-7272

POW-R-BLOK™
Dual SCR/Diode Isolated Module
150 Amperes / Up to 1800 Volts



CD62__15B, CD67__15B
Dual SCR/Diode Isolated
POW-R-BLOK™ Module
150 Amperes / Up to 1800 Volts

Description:

Powerex SCR/Diode Modules are designed for use in applications requiring phase control and isolated packaging. The modules are isolated for easy mounting with other components on a common heatsink. *POW-R-BLOK™* has been tested and recognized by the Underwriters Laboratories.

Features:

- Electrically Isolated Heatsinking
- DBC Alumina (Al_2O_3) Insulator
- Glass Passivated Chips
- Metal Baseplate
- Low Thermal Impedance for Improved Current Capability
- Quick Connect Gate Terminal with Provision for Keyed Mating Plug
- UL Recognition Pending

CD62__15B, CD67__15B
Outline Dimensions

Dimension	Inches	Millimeters
A	3.70	94
B	1.38	35
C	1.18	30
D	3.15	80
E	0.67	17
F	0.91	23
G	0.57	14.5
H	0.35	9
J	M6	M6
K	0.26	6.5
M	.020	5
N	0.28	7
P	1.10	28
Q	1.14	29
R	0.03	0.8
S	0.11	2.8

Note: Dimensions are for reference only.

Ordering Information:

Select the complete nine digit module part number from the table below. Example: CD621615B is a 1600Volt, 150 Ampere SCR/Diode Isolated *POW-R-BLOK™* Module

Type	Voltage Volts (x100)	Current Amperes (x 10)	Version
CD62	08	15	B
CD67	12		
	14		
	16		
	18		

Benefits:

- No Additional Insulation Components Required
- Easy Installation
- No Clamping Components Required
- Reduce Engineering Time

Applications:

- Bridge Circuits
- AC & DC Motor Drives
- Battery Supplies
- Power Supplies
- Large IGBT Circuit Front Ends
- Lighting Control
- Heat & Temperature Control
- Welders

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Absolute Maximum Ratings

Characteristics	Conditions	Symbol		Units
Repetitive Peak Forward and Reverse Blocking Voltage		V_{DRM} & V_{RRM}	up to 1800	V
Non-Repetitive Peak Reverse Blocking Voltage (t < 5 msec)		V_{RSM}	V_{RRM} + 100	V
RMS Forward Current	180° Conduction, T_C=85°C	$I_{T(RMS)}$	250	A
	180° Conduction, T_C=85°C (AC Switch)	$I_{T(RMS)}$	355	A
Average Forward Current	180° Conduction, T_C=85°C	$I_{T(AV)}$	160	A
	180° Conduction, T_C=90°C	$I_{T(AV)}$	150	A
Peak One Cycle Surge Current, Non-Repetitive	60 Hz, 100% V_{RRM} reapplied, T_j=125°C	I_{TSM}	4300	A
	60 Hz, No V_{RRM} reapplied, T_j=125°C	I_{TSM}	5100	A
	50 Hz, 100% V_{RRM} reapplied, T_j=125°C	I_{TSM}	4100	A
	50 Hz, No V_{RRM} reapplied, T_j=125°C	I_{TSM}	4870	A
Peak Three Cycle Surge Current, Non-Repetitive	60 Hz, 100% V_{RRM} reapplied, T_j=125°C	I_{TSM}	3250	A
	50 Hz, 100% V_{RRM} reapplied, T_j=125°C	I_{TSM}	3150	A
Peak Ten Cycle Surge Current, Non-Repetitive	60 Hz, 100% V_{RRM} reapplied, T_j=125°C	I_{TSM}	2650	A
	50 Hz, 100% V_{RRM} reapplied, T_j=125°C	I_{TSM}	2550	A
I^2t for Fusing for One Cycle	8.3 ms, 100% V_{RRM} reapplied, T_j=125°C	I^2t	76,700	A^2 sec
	8.3 ms, No V_{RRM} reapplied, T_j=125°C	I^2t	108,000	A^2 sec
	10 ms, 100% V_{RRM} reapplied, T_j=125°C	I^2t	84,000	A^2 sec
	10 ms, No V_{RRM} reapplied, T_j=125°C	I^2t	119,000	A^2 sec
Maximum Rate-of-Rise of On-State Current, Non Repetitive	T_j=125°C, V_D=1.0 $V_{DRM\ (Rated)}$, I_{TM}=400A , I_G=0.5 A, T_r < 0.25µs, t_p > 6µs	di/dt	300	A/µs
Peak Gate Power Dissipation	T_p < 5 ms, T_j = 125°C	P_{GM}	12	W
Average Gate Power Dissipation	F = 50 Hz, T_j = 125°C	$P_{G(AV)}$	3	W
Peak Forward Gate Current	T_p < 5 ms, T_j = 125°C	I_{GFM}	3	A
Peak Reverse Gate Voltage	T_p < 5 ms, T_j = 125°C	V_{GRM}	10	V
Operating Temperature		T_J	-40 to +125	°C
Storage Temperature		T_{stg}	-40 to +125	°C
Max. Mounting Torque, M6 Mounting Screw on Terminals			35 - 50 4 - 6	in.-Lb. Nm
Max. Mounting Torque, Module to Heatsink			35 - 50 4 - 6	in.-Lb. Nm
Module Weight, Typical			165 5.82	G Oz.
V Isolation @ 25C		V_{rms}	3500	V

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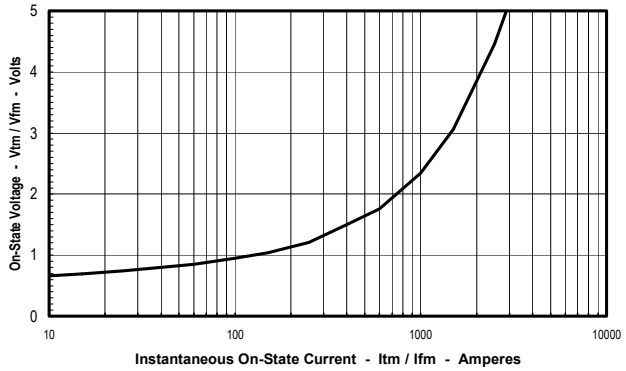
Electrical Characteristics, T_J=25°C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Max.	Units
Repetitive Peak Forward Leakage Current	I_{DRM}	Up to 1600V, T_J=125°C		50	mA
Repetitive Peak Reverse Leakage Current	I_{RRM}	Up to 1600V, T_J=125°C		50	mA
Peak On-State Voltage	V_{TM} / V_{FM}	I_{TM} / I_{FM} =500A		1.6	V
Threshold Voltage, Low-level	$V_{(TO)1}$	T_J = 125°C, I = 16.7% x $\pi I_{T(AV)}$ to $\pi I_{T(AV)}$		0.85	V
Slope Resistance, Low-level	r_{T1}			1.5	mΩ
Minimum dV/dt	dV/dt	Exponential to 2/3 V_{DRM} T_j=125°C, Gate Open	1000		V/µs
Turn-Off Time (Typical)	t_{off}	T_J = 125°C, I_T= 300A, R_{gk} = 100Ω V_r = 50V, -dI/dt=15 A/µs Re-Applied dV/dt = 20V/µs, Linear to 2/3 V_{DRM}	50 - 200	(Typical)	µs
Gate Trigger Current	I_{GT}	T_j= 25°C, V_D=6V, R_a=1Ω Resistive Load		150	mA
Gate Trigger Voltage	V_{GT}	T_j= 25°C, V_D=6V, R_a=1Ω, Resistive Load		2.0	Volts
Non-Triggering Gate Voltage	V_{GDM}	T_j=125°C, V_D=V_{DRM}		0.25	Volts
Non-Triggering Gate Current	I_{GDM}	T_j=125°C, V_D=V_{DRM}		10	mA
Holding Current	I_H	T_J=25°C	150	(Typical)	mA
Latching Current	I_L	T_J=25°C	300	(Typical)	mA

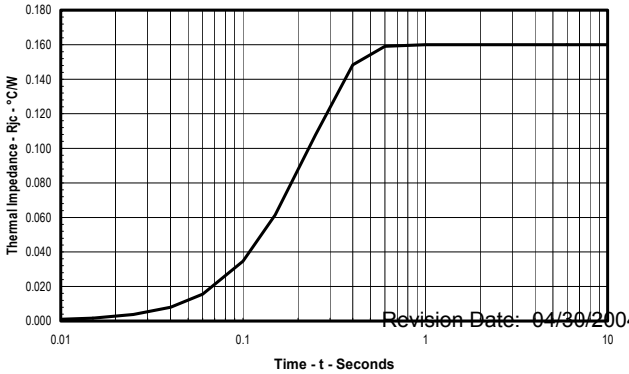
Thermal Characteristics

Characteristics	Symbol		Max.	Units
Thermal Resistance, Junction to Case	$R_{ΘJ-C}$	Per Module, both conducting	0.085	°C/W
DC Operation		Per Junction, both conducting	0.17	°C/W
Thermal Resistance, Case to Sink Lubricated	$R_{ΘC-S}$	Per Module	0.05	°C/W

Maximum On-State Forward Voltage Drop
(Tj = 125 °C)



Maximum Transient Thermal Impedance
(Junction to Case)



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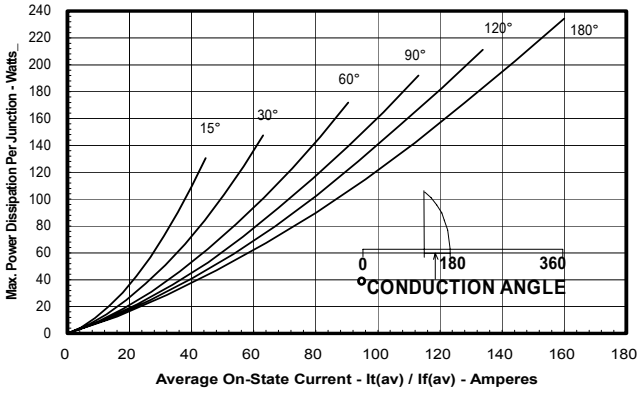
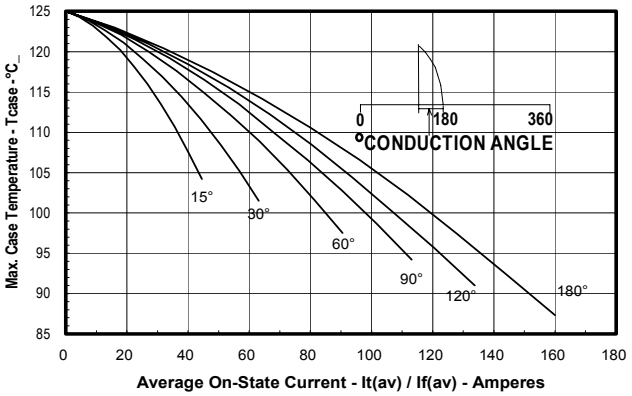
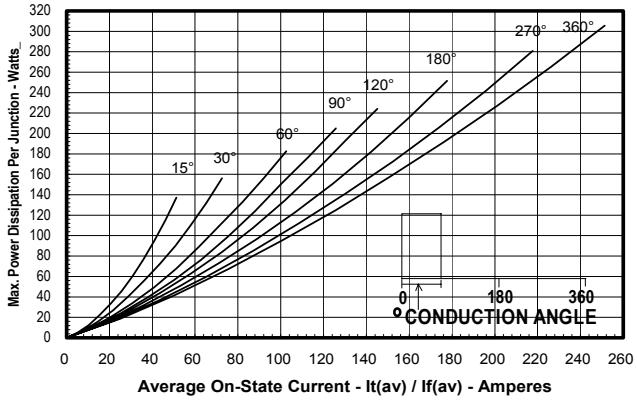
Maximum On-State Power Dissipation
(Sinusoidal Waveform)



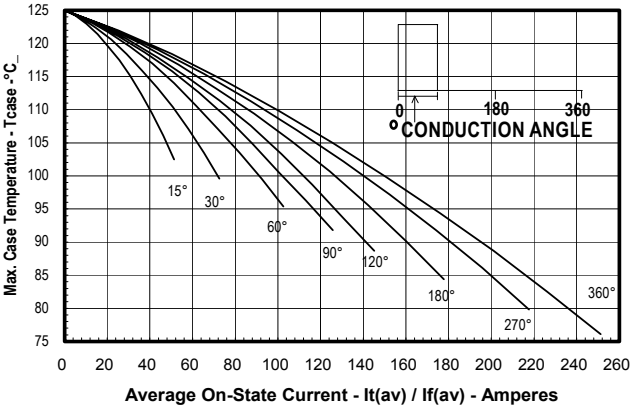
Maximum Allowable Case Temperature
(Sinusoidal Waveform)



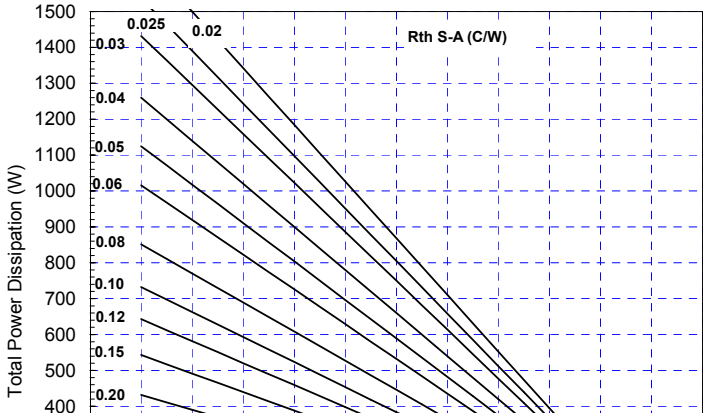
Maximum On-State Power Dissipation
(Rectangular Waveform)



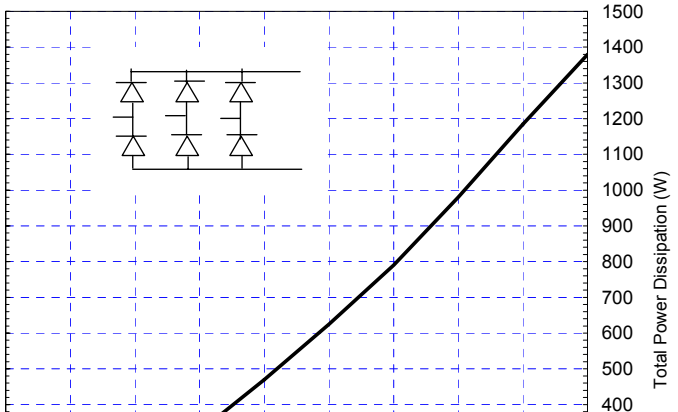
Maximum Allowable Case Temperature
(Rectangular Waveform)



Powerex CD62 & CD67--15 *Pow-R-Blok* 6-Pulse Bridge



Total Power Dissipation vs Maximum Rated Output Current



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Six-Pulse Bridge Circuit Total Power Dissipation & Maximum Rated Output Current With Sink to Ambient Resistance of Heatsink as a Parameter.

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