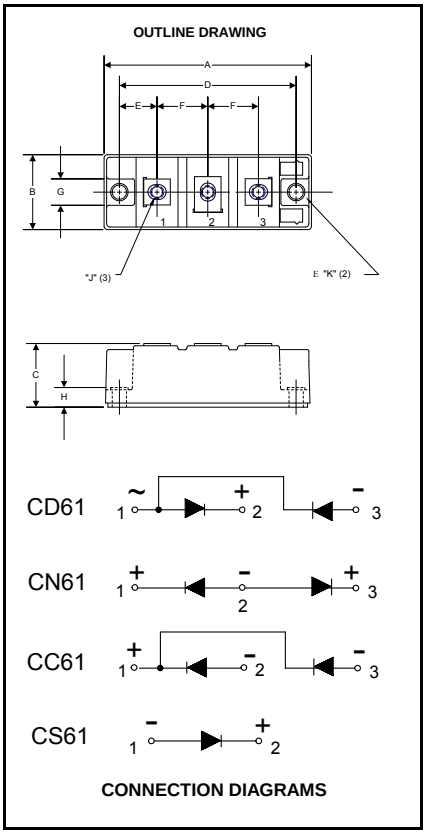
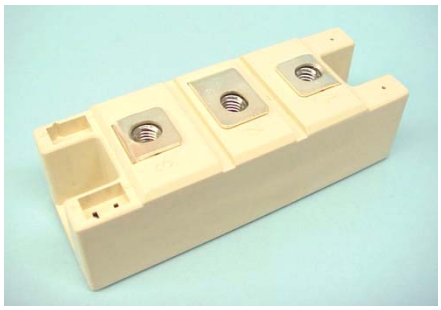
CD61__16B, CS61__16B
CN61__16B, CC61__16B

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

POW-R-BLOK™
Dual & Single Diode Isolated Module
160 Amperes / Up to 2200 Volts





CD61__16B, CS61__16B
CN61__16B, CC61__16B
Dual & Single Diode Isolated
POW-R-BLOK™ Module
160 Amperes / Up to 2200 Volts

Description:
Powerex Dual Diode & Single Diode Modules are designed for use in applications requiring rectification 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 Insulator
- Glass Passivated Chips
- Metal Baseplate
- Low Thermal Impedance for Improved Current Capability
- UL Recognized (E78240)

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

Applications:
- Power Supplies
- Bridge Circuits
- AC & DC Motor Drives
- Battery Supplies
- Large IGBT Circuit Front Ends
- Welders

Ordering Information:
Select the complete nine digit module part number from the table below. Example: CD611616B is a 1600 Volt, 160 Ampere Dual Diode Isolated *POW-R-BLOK™* Module

Type	Voltage Volts (x100)	Current Amperes (x 10)	Version
CD61 CC61 CN61 CS61	08 12 14 16 18 20 22	16	B

Outline Dimensions

Dimension	Inches	Millimeters
A	3.70	94
B	1.34	34
C	1.18	30
D	3.15	80
E	0.67	17
F	0.91	23
G	0.51	13
H	0.33	8.3
J	M6	M6
K	0.25	6.4

Note: Dimensions are for reference only.

Revision Date: 04/28/2009

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

POW-R-BLOK™
Dual & Single Diode Isolated Module
160 Amperes / Up to 2200 Volts

Absolute Maximum Ratings

Characteristics	Conditions	Symbol		Units
Repetitive Peak Reverse Blocking Voltage		V_{RRM}	up to 2200	V
Non-Repetitive Peak Reverse Blocking Voltage (t < 5 msec)		V_{RSM}	V_{RRM} + 100	V
RMS Forward Current	180° Conduction, T_C=109°C	$I_{F(RMS)}$	250	A
Average Forward Current	180° Conduction, T_C=109°C	$I_{F(AV)}$	160	A
Peak One Cycle Surge Current, Non-Repetitive	60 Hz, 100% V_{RRM} reapplied, T_J=150C	I_{FSM}	3,500	A
	60 Hz, 100% No V_{RRM} reapplied, T_J=150C	I_{FSM}	4,200	A
	50 Hz, 100% V_{RRM} reapplied, T_J=150C	I_{FSM}	3,350	A
	50 Hz, 100% No V_{RRM} reapplied, T_J=150C	I_{FSM}	4,000	A
I^2t for Fusing for One Cycle	8.3ms, 100% V_{RRM} reapplied, T_J=150C	I^2t	52,000	A^2 sec
	8.3ms, 100% No V_{RRM} reapplied, T_J=150C	I^2t	73,000	A^2 sec
	10ms, 100% V_{RRM} reapplied, T_J=150C	I^2t	56,000	A^2 sec
	10ms, 100% No V_{RRM} reapplied, T_J=150C	I^2t	80,000	A^2 sec
Operating Temperature		T_J	-40 to +150	°C
Storage Temperature		T_{stg}	-40 to +150	°C
Max. Mounting Torque, M6 Mounting Screw			35 - 50 4 – 6	in.-Lb. Nm
Max. Mounting Torque, M8 Terminal Screw			35 - 50 4 – 6	in.-Lb. Nm
Module Weight, Typical			165 0.36	g lb.
V Isolation @ 25C, V_{rms} for 1 sec		V_{rms}	3000	V

Information presented is based upon manufacturers testing and projected capabilities.
This information is subject to change without notice.
The manufacturer makes no claim as to the suitability of use, reliability, capability,
or future availability of this product.

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

POW-R-BLOK™
Dual & Single Diode Isolated Module
160 Amperes / Up to 2200 Volts

Electrical Characteristics, T_J=25°C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Max.	Units
Repetitive Peak Reverse Leakage Current	I_{RRM}	Up to 2200V, T_J=150°C		20	mA
Peak On-State Voltage	V_{FM}	I_{FM}=520A, 180 Deg Conduction		1.43	V
Threshold Voltage, Low-level	$V_{(TO)1}$	T_J = 150°C, I = 16.7%$\pi I_{F(AV)}$ to $\pi I_{F(AV)}$		0.85	V
Slope Resistance, Low-level	r_{T1}			1.2	mΩ

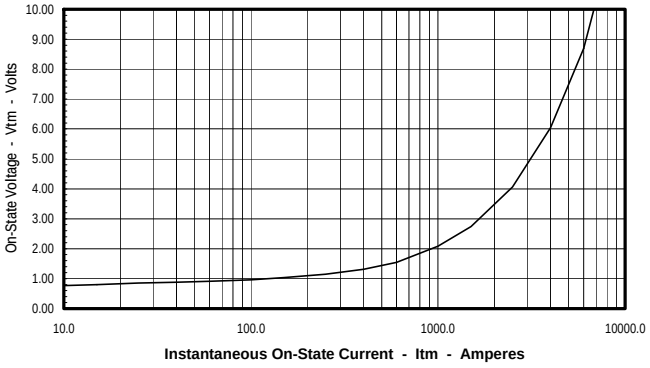
Thermal Characteristics

Characteristics	Symbol		Max.	Units
Thermal Resistance, Junction to Case	$R_{\Theta J-C}$	Per Module, both conducting	0.09	°C/W
		Per Junction both conducting	0.18	°C/W
Thermal Resistance, Case to Sink Lubricated	$R_{\Theta C-S}$	Per Module	0.05	°C/W

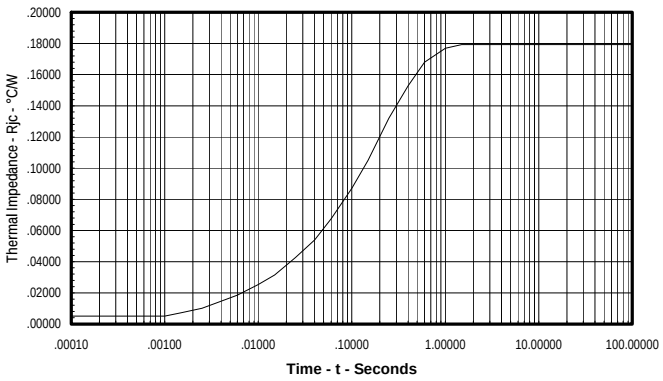
Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (724) 925-7272
www.pwrx.com

POW-R-BLOK™
Dual & Single Diode Isolated Module
160 Amperes / Up to 2200 Volts

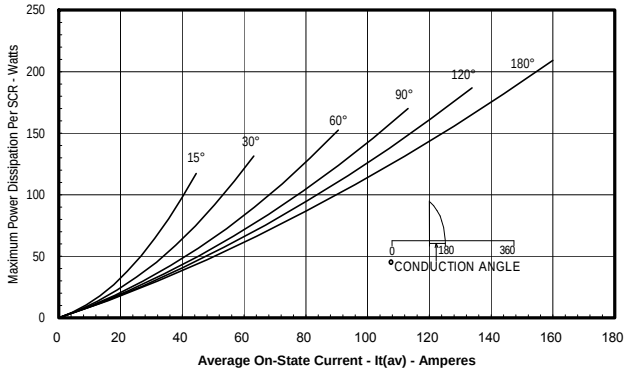
Maximum On-State Forward Voltage Drop
(Tj = 150 °C)



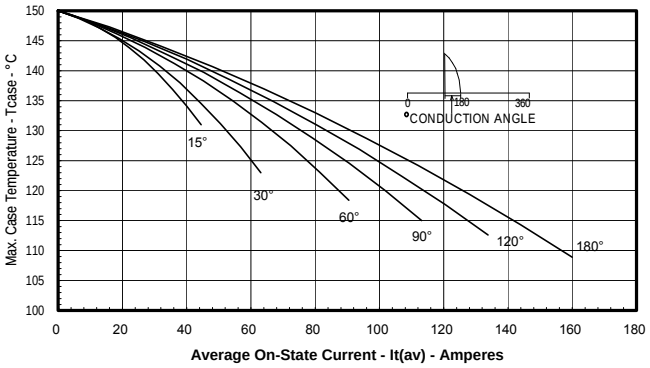
Maximum Transient Thermal Impedance
(Junction to Case)



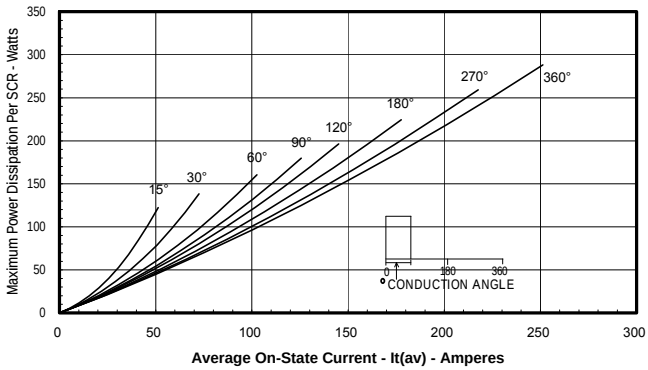
Maximum On-State Power Dissipation
(Sinusoidal Waveform)



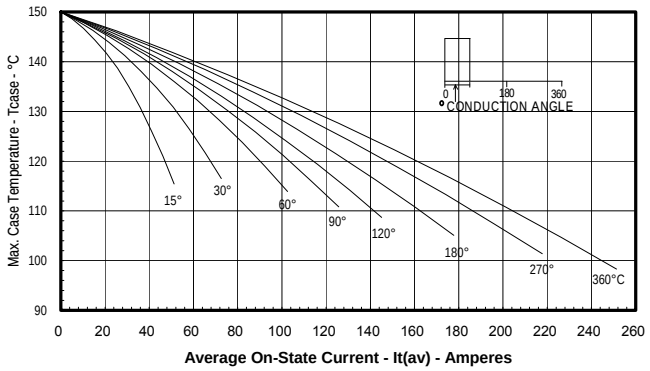
Maximum Allowable Case Temperature
(Sinusoidal Waveform)



Maximum On-State Power Dissipation
(Rectangular Waveform)



Maximum Allowable Case Temperature
(Rectangular Waveform)



Revision Date: 04/28/2009