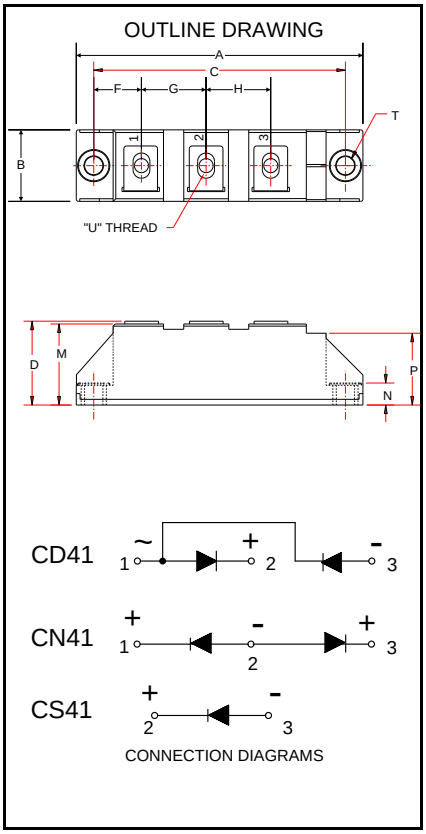
CD41__99B, CN41__99B
CS41__99B

Powerex, Inc., 173 Pavilion Lane, Youngwood, PA 15697 (724) 925-7272
www.pwrx.com

POW-R-BLOK™
Dual & Single Diode Isolated Module
100 Amperes / Up to 1600 Volts



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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 (Al_2O_3) Insulator
- Copper 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
- Lighting Control
- Heat & Temperature Control
- Welders

Outline Dimensions

Dimension	Inches	Millimeters
A	3.66	93
B	0.79	20
C	3.15	80
D	1.18	30
F	0.61	15.5
G	0.79	20
H	0.79	20
M	1.16	29.4
N	0.31	8
P	0.94	24
T	0.25	6.4
U	M5	M5

Note: Dimensions are for reference only.

Ordering Information:
Select the complete nine digit module part number from the table below. Example: CD411699B is a 1600 Volt, 100 Ampere Dual Diode Isolated *POW-R-BLOK™* Module

Type	Voltage Volts (x100)	Current Amperes	Version
CD41 CN41 CS41	08 12 14 16	99 (100 A)	B

Revision Date: 04/18/2011

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Absolute Maximum Ratings

Characteristics	Conditions	Symbol		Units
Repetitive Peak Reverse Blocking Voltage		V_{RRM}	up to 1600	V
Non-Repetitive Peak Reverse Blocking Voltage (t < 5 msec)		V_{RSM}	V_{RRM} + 100	V
RMS Forward Current	DC Conduction, T_C=90°C	$I_{F(RMS)}$	157	A
Average Forward Current	180° Conduction, T_C=100°C	$I_{F(AV)}$	100	A
Peak One Cycle Surge Current, Non-Repetitive	60 Hz, 100% V_{RRM} reapplied, T_J = 150°C	I_{FSM}	1,780	A
	60 Hz, No V_{RRM} reapplied, T_J = 150°C	I_{FSM}	2,110	A
	50 Hz, 100% V_{RRM} reapplied, T_J = 150°C	I_{FSM}	1,700	A
	50 Hz, No V_{RRM} reapplied, T_J = 150°C	I_{FSM}	2,020	A
I^2t for Fusing for One Cycle	8.3 ms, 100% V_{RRM} reapplied, T_J = 150°C	I^2t	13,190	A^2 sec
	8.3 ms, No V_{RRM} reapplied, T_J = 150°C	I^2t	18,650	A^2 sec
	10 ms, 100% V_{RRM} reapplied, T_J = 150°C	I^2t	14,450	A^2 sec
	10 ms, No V_{RRM} reapplied, T_J = 150°C	I^2t	20,430	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 on Terminals			25	in. – Lb.
			3	Nm
Max. Mounting Torque, Module to Heatsink			44	in. – Lb.
			5	Nm
Module Weight, Typical			95	g
			3.35	Oz
V Isolation @ 25C	50-60 Hz, 1 second	V_{rms}	3500	V
Circuit To Base, All Terminals Shorted Together				

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

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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 1800V, T_J=150°C		10	mA
Peak On-State Voltage	V_{FM}	T_J=25°C, I_{FM}=300A, 180° Conduction		1.35	V
Threshold Voltage, Low-level	$V_{(FO)1}$	T_J = 150°C, I = 16.7% x $\pi I_{F(AV)}$ to $\pi I_{F(AV)}$		0.85	V
Slope Resistance, Low-level	r_{T1}			1.3	mΩ

Thermal Characteristics

Characteristics	Symbol		Max.	Units
Thermal Resistance, Junction to Case	$R_{\Theta J-C}$	Per Module, both conducting	0.175	°C/W
		Per Junction, both conducting	0.35	°C/W
Thermal Resistance, Case to Sink Lubricated	$R_{\Theta C-S}$	Per Module	0.1	°C/W

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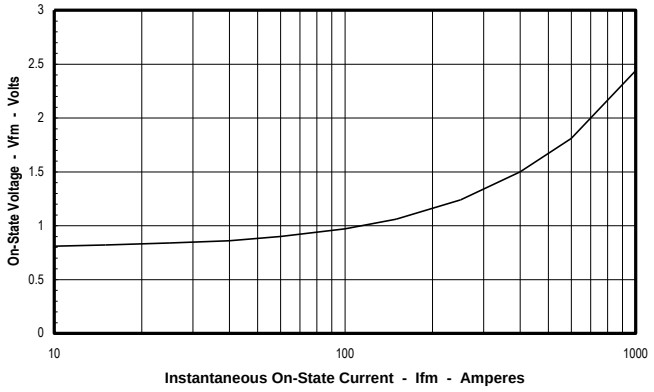
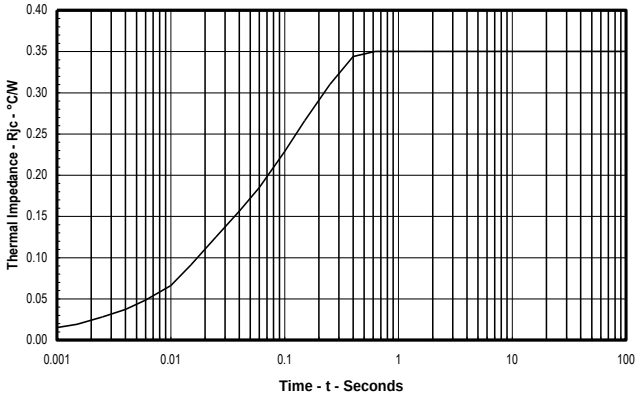
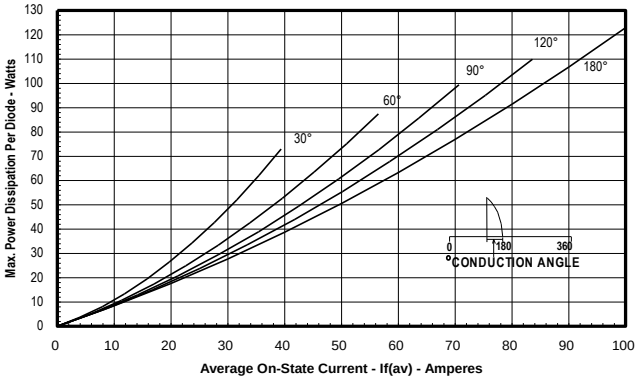
Maximum On-State Forward Voltage Drop
(Tj = 150 °C)



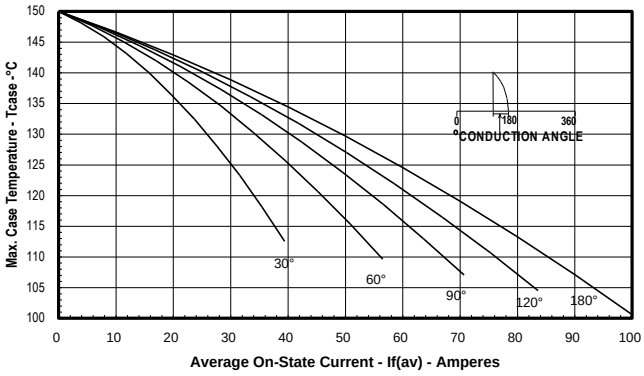
Maximum Transient Thermal Impedance
(Junction to Case)



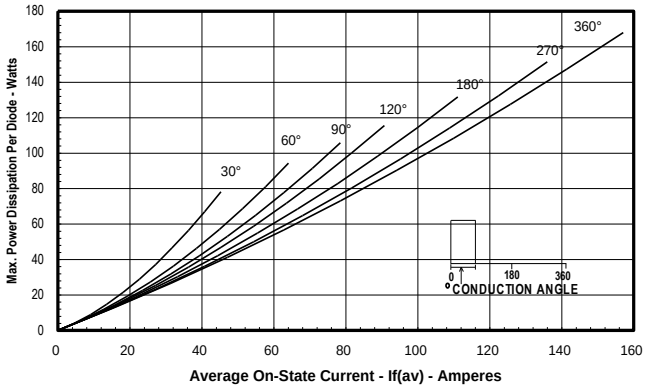
Maximum On-State Power Dissipation
(Sinusoidal Waveform)



Maximum Allowable Case Temperature
(Sinusoidal Waveform)



Maximum On-State Power Dissipation
(Rectangular Waveform)



Maximum Allowable Case Temperature
(Rectangular Waveform)