



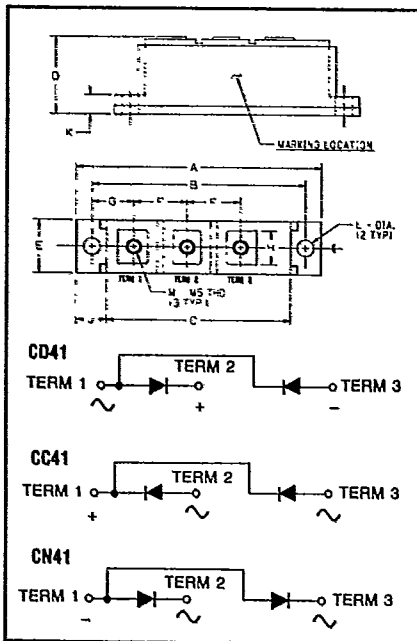
Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272
 Powerex Europe, S.A., 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 72.75.15

CD41 — 99

CC41 — 99

CN41 — 99

Dual Diode POW-R-BLOK™ Modules 100 Amperes/200-2400 Volts

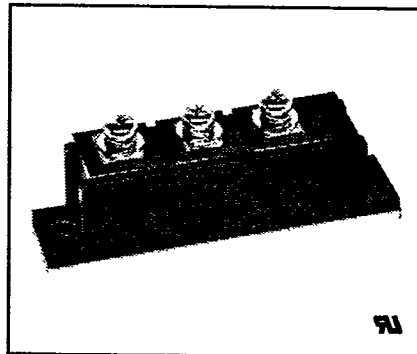


200-2400 Volts, CD41 — 99,
 CC41 — 99, CN41 — 99

Outline Drawing

Dimension	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	3.602	3.640	91.49	92.45
B	3.146	3.154	79.91	80.11
C	2.705	2.735	68.71	69.47
D	1.125	1.165	28.58	29.59
E	.795	.805	20.19	20.45
F	.788	.798	19.76	20.27
G	.608	.628	15.44	15.95
H	.480	.520	12.19	13.21
J	.43	.47	10.92	11.94
LO	.245	.255	6.22	6.48
M	—	—	M5 x 0.8	

CN—Common Anode Diode Module
 CD—Dual Diode Module
 CC—Common Cathode Diode Module



CD41 — 99, CC41 — 99,
 CN41 — 99

Dual Diode
 POW-R-BLOK™ Modules
 100 Amperes/200-2400 Volts

Ordering Information

Example: Select the complete eight digit module part number you desire from the table — i.e. CD412499 is a 2400 Volt, 100 Ampere Dual Diode POW-R-BLOK™ Module.

Type	V _{RRM} Volts (x100)	Current Rating Amperes (100)
CD41	02	99
CC41	04	
CN41	06	
	08	
	10	
	12	
	14	
	16	
	18	
	20	
	22	
	24	

Description

Powerex POW-R-BLOK™ Assemblies combine multiple power semiconductor devices in a single, electrically isolated module. This dense, cost-effective packaging is made possible by Powerex's proprietary *glass passivation* process, in which each semiconductor junction is sealed with a protective layer of glass. Exhaustive testing at high voltages and high temperatures has demonstrated the excellent parameter stability of these glass-protected products.

The POW-R-BLOK™ features a self-contained electrical isolation system. The use of BeO ceramic isolators with high thermal conductivity has achieved excellent circuit-to-baseplate isolation (≥ 2500 volts RMS), while maintaining efficient cooling of the semiconductors. POW-R-BLOK™ has been tested and recognized by Underwriters Laboratories (QQX2 Power Switching Semiconductors).

Features:

- ☐ Glass Passivation
- ☐ Hybrid Construction
- ☐ Isolated Base Plate
- ☐ Insulated Package
- ☐ Low Thermal Impedance
- ☐ Metal Base Plate
- ☐ UL Recognized

Applications:

- ☐ Battery Supplies
- ☐ DC Motor Power Supplies
- ☐ AC Motor Power Supplies
- ☐ Center Tap Circuits

Benefits:

- ☐ No Additional Insulating Components Required
- ☐ Easy Installation
- ☐ Reduced Engineering Time
- ☐ Improved Heat Transfer
- ☐ Voltage Stability



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CD41 — 99, CC41 — 99, CN41 — 99
 Dual Diode POW-R-BLOCK™ Modules
 100 Amperes/200-2400 Volts

Absolute Maximum Ratings

Characteristics	Symbol	CD410299 CC410299 CN410299	CD410499 CC410499 CN410499	CD410699 CC410699 CN410699	CD410899 CC410899 CN410899	CD411099 CC411099 CN411099	CD411299 CC411299 CN411299	Units
Peak Reverse Blocking Voltage	V_{RRM}	200	400	600	800	1000	1200	Volts
Transient Peak Reverse Blocking Voltage (Non-Repetitive) $t < 5ms$	V_{RSM}	300	500	800	1000	1200	1400	Volts
DC Reverse Blocking Voltage	$V_{R(DC)}$	160	320	480	640	800	960	Volts
		CD411499 CC411499 CN411499	CD411699 CC411699 CN411699	CD411899 CC411899 CN411899	CD412099 CC412099 CN412099	CD412299 CC412299 CN412299	CD412499 CC412499 CN412499	
Peak Reverse Blocking Voltage	V_{RRM}	1400	1600	1800	2000	2200	2400	Volts
Transient Peak Reverse Blocking Voltage (Non-Repetitive) $t < 5ms$	V_{RSM}	1600	1800	2000	2200	2400	2600	Volts
DC Reverse Blocking Voltage	$V_{R(DC)}$	1120	1280	1440	1600	1760	1920	Volts
CD41 — 99 CC41 — 99 CN41 — 99								
RMS On-State Current	$I_{F(RMS)}$	157						Amperes
Average On-State Current, $T_C = 113^\circ C$	$I_{F(AV)}$	100						Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60 Hz)	I_{FSM}	2400						Amperes
Peak Three-Cycle Surge (Non-Repetitive) On-State Current (60 Hz)	I_{FSM}	1950						Amperes
Peak Ten-Cycle Surge (Non-Repetitive) On-State Current (60 Hz)	I_{FSM}	1400						Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50 Hz)	I_{FSM}	2190						Amperes
I^2t (for Fusing), 8.3 milliseconds	I^2t	23900						A ² sec
Storage Temperature	T_{STG}	-40 to 165						°C
Operating Temperature	T_J	-40 to 150						°C
Maximum Mounting Torque M6 Mounting Screw	—	50						in.-lb.
Maximum Terminal Torque M5 Terminal Screw	—	35						in.-lb.
Module Weight (Typical)	—	142						Grams
V Isolation	V_{RMS}	2500						Volts



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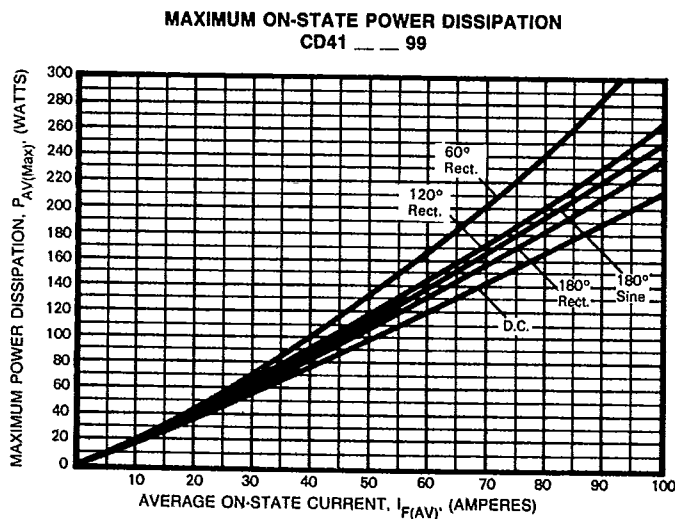
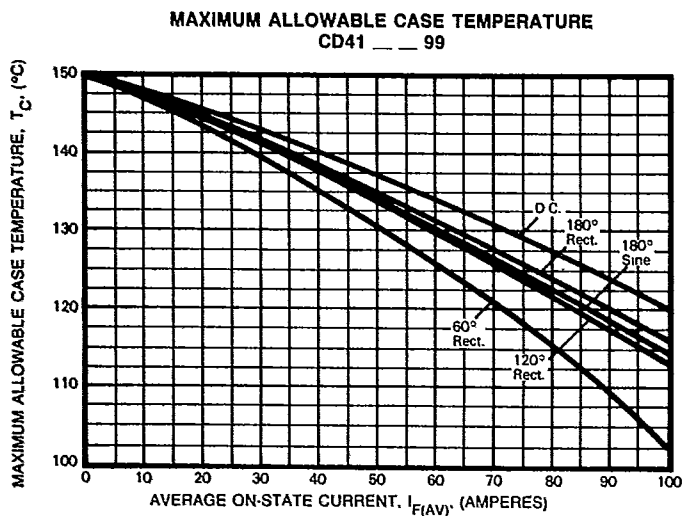
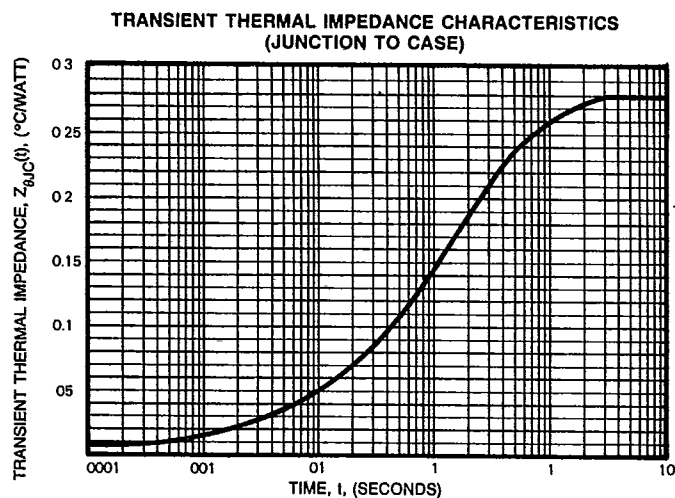
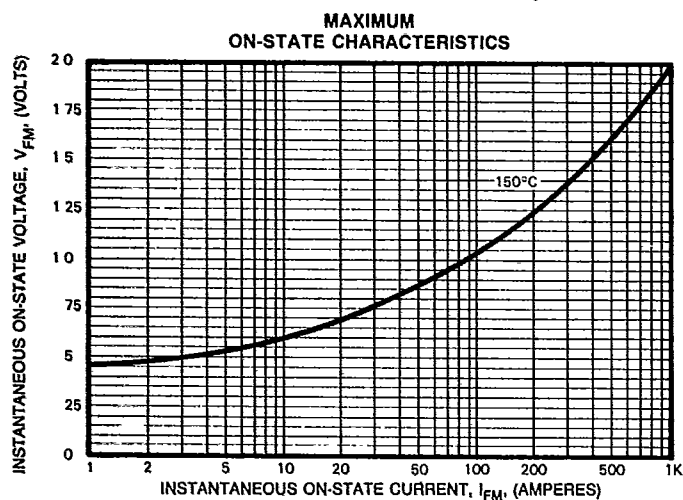
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Dual Diode POW-R-BLOK™ Modules
100 Amperes/200-2400 Volts

Electrical and Thermal Characteristics, $T_J = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Test Conditions	CD41 — 99 CC41 — 99 CN41 — 99	Units
Blocking State Maximums				
Reverse Leakage Current, Peak	I_{RRM}	$T_J = 150^\circ\text{C}$, $V_{RRM} = \text{rated}$	15	mA
Conducting State Maximums				
Peak On-State Voltage	V_{FM}	$I_{FM} = 250\text{A}$	1.3	Volts
Switching Typicals				
Reverse Recovery Time	t_{rr}	$I_{FM} = 314\text{A}$, $-di/dt = 25\text{A}/\mu\text{s}$	7	μs
Thermal Maximums				
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Per Device	0.28	$^\circ\text{C}/\text{Watt}$
Thermal Resistance, Case to Sink Lubricated	$R_{\theta CS}$	Per Device	0.2	$^\circ\text{C}/\text{Watt}$

WARNING:

Internal insulation used is Beryllium Oxide. User should avoid grinding, crushing or abrading these portions. Care must be exercised in properly disposing of unwanted modules.





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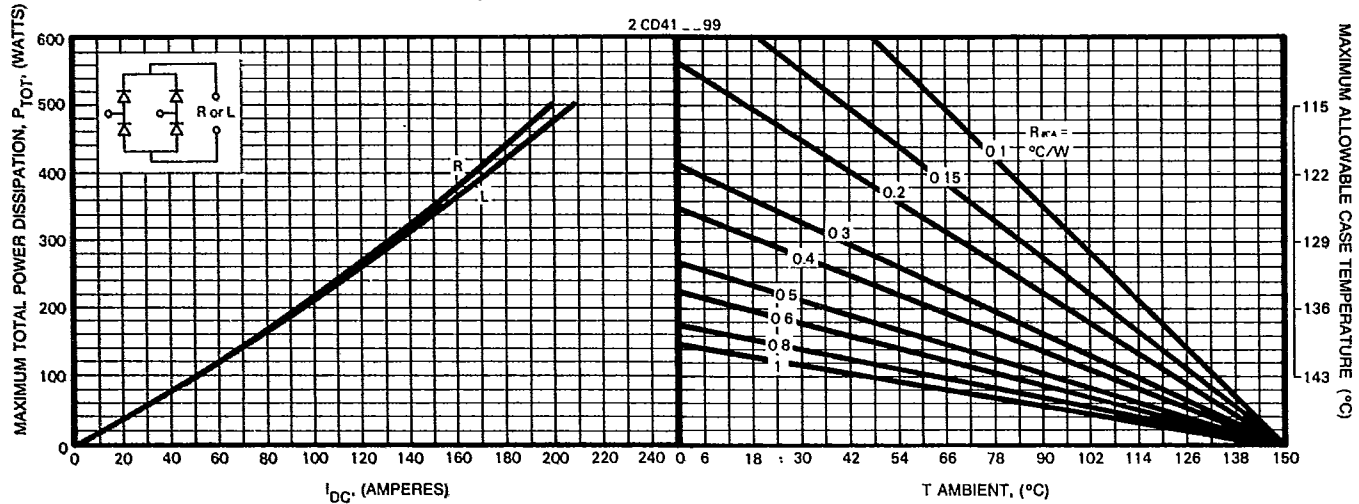
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Dual Diode POW-R-BLOK™ Modules

100 Amperes/200-2400 Volts

MAXIMUM TOTAL POWER DISSIPATION AND MAXIMUM AMBIENT TEMPERATURES

1φ—BRIDGE RESISTIVE AND INDUCTIVE LOAD



3φ—BRIDGE AND AC SWITCH

