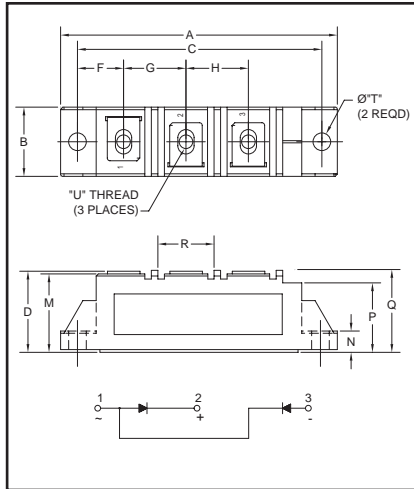
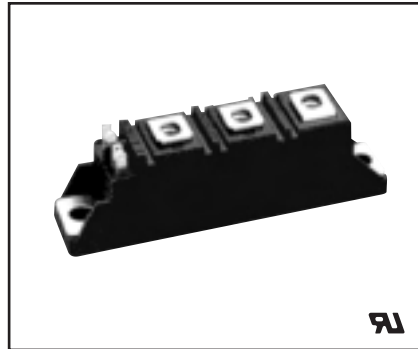


### Dual Diode POW-R-BLOK™ Module 100 Amperes/1600 Volts



Outline Drawing

Dimension	Inches		Metric	
	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	0.795	0.805	20.19	20.45
F	0.788	0.798	19.76	20.27
G	0.608	0.628	15.44	15.95
H	0.480	0.520	12.19	13.21
J	0.43	0.47	10.92	11.94
L	0.245	0.255	6.22	6.48
M	—	—	M5 x 0.8	



CD41, CC41, CN41  
Dual Diode POW-R-BLOK™ Module  
100 Amperes/1600 Volts

#### Description:

Powerex Dual 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 (QQQX2 Power Semiconductors).

#### Features:

- Electrically Isolated Heatsinking
- Metal Baseplate
- Low Thermal Impedance
- UL Recognized

#### Applications:

- Battery Supplies
- Bridge Circuits
- AC and DC Motor Control
- Rectifiers

#### Ordering Information:

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

Example: CD411699 is a 1600 Volt, 100 Ampere Dual Diode POW-R-BLOK™ Module.

Type	Voltage Volts (x100)	Current Rating Amperes
CD41	08	55
CC41	12	99
CN41	16	



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

CD41, CC41, CN41  
 Dual Diode POW-R-BLOK™ Module  
 100 Amperes/1600 Volts

**Absolute Maximum Ratings**

Characteristics	Symbol	Conditions	CD41_99	Units
			CC41_99	
Repetitive Peak Reverse Blocking Voltage	VRRM		1600	Volts
Non-Repetitive Peak Reverse Blocking Voltage	VRSM	—	VRRM + 100	Volts
RMS Forward Current	IF(RMS)	—	157	Amperes
Average Forward Current	IF(AV)	TC = 96°C, 180° Conduction	100	Amperes
Peak Half-Cycle Surge (Non-Repetitive) On-State Current	IFSM	t = 8.3ms, 100%VRRM Reapplied	1780	Amperes
		t = 10ms, 100%VRRM Reapplied	1700	Amperes
I <sup>2</sup> t (for Fusing) for One-Cycle	I <sup>2</sup> t	t = 8.3ms, 100%VRRM Reapplied	13200	A <sup>2</sup> sec
		t = 10ms, 100%VRRM Reapplied	14450	A <sup>2</sup> sec
Storage Temperature	TSTG	—	-40 to 150	°C
Operating Temperature	Tj	—	-40 to 150	°C
Maximum Mounting Torque M5 Mounting Screw	—	—	4.5 to 5.5	Nm
Maximum Mounting Torque M5 Terminal Screw	—	—	2.7 to 3.3	Nm
Module Weight (Typical)	—	—	170	Grams
			6	oz.
V Isolation	VRMS	—	3500	Volts



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CD41, CC41, CN41  
 Dual Diode POW-R-BLOK™ Module  
 100 Amperes/1600 Volts

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

Characteristics	Symbol	Test Conditions	CD41_ _99	Units
			CC41_ _99	
<b>Blocking State Maximums</b>				
Repetitive Reverse Leakage Current, Peak	$I_{RRM}$	$T_j = 150^\circ\text{C}, V_R = V_{RRM}$	10	mA
<b>Conducting State Maximums</b>				
Peak On-State Voltage	$V_{FM}$	$I_{FM} = 314\text{A}$	1.34	Volts
Peak On-State Voltage Coefficients, Full Range	$V_{FM}$	$T_j = 150^\circ\text{C},$ $I = 15\% I_{F(AV)} \text{ to } I_{FSM}$ $V_{FM} =$ $A + B \ln I_{FM} + C I_{FM} + D \text{ Sqrt } I_{FM}$	A = -0.709 B = 0.746 C = 0.0050 D = -0.220	
Threshold Voltage, Low-Level	$V_{(TO)1}$	$T_j = 150^\circ\text{C},$	0.690	Volts
Slope Resistance, Low-Level	$r_{T1}$	$I = 15\% I_{F(AV)} \text{ to } \pi I_{F(AV)}$	2.14	m $\Omega$
Threshold Voltage, High-Level	$V_{(TO)2}$	$T_j = 150^\circ\text{C},$	0.483	Volts
Slope Resistance, High-Level	$r_{T2}$	$I = \pi I_{F(AV)} \text{ to } I_{FSM}$	2.33	m $\Omega$
<b>Thermal Maximums</b>				
Thermal Resistance, Junction-to-Case	$R_{u(J-C)}$	Per Module, Both Conducting	0.22	$^\circ\text{C/Watt}$
		Per Diode, Both Conducting	0.44	$^\circ\text{C/Watt}$
Thermal Resistance, Case-to-Sink (Lubricated)	$R_{\theta(C-S)}$	Per Module	0.1	$^\circ\text{C/Watt}$