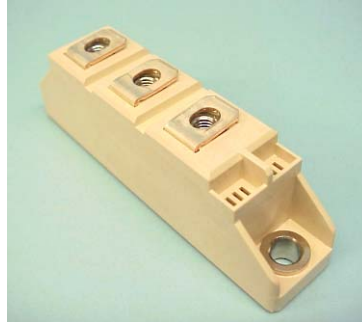
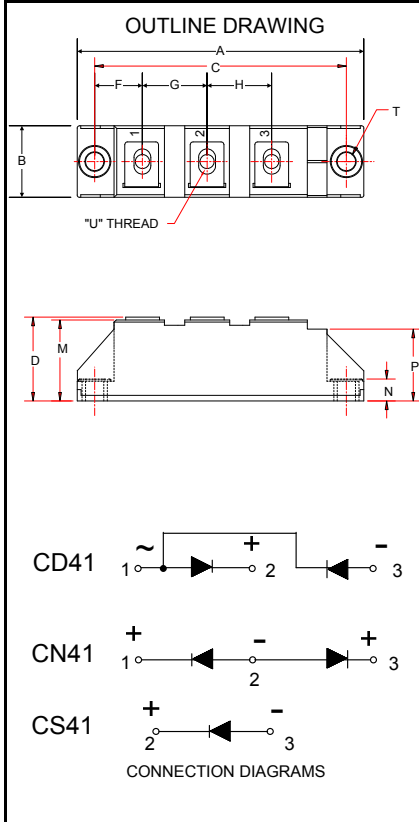


Powerex, Inc., 173 Pavilion Lane, Youngwood, PA 15697 (724) 925-7272
www.pwr.com

POW-R-BLOK™
Dual & Single Diode Isolated Module
100 Amperes / Up to 1800 Volts



**CD41__99B, CN41__99B
CS41__99B**
**Dual & Single Diode Isolated
POW-R-BLOK™ Module**
100 Amperes / Up to 1800 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 (Al₂O₃) Insulator
- Copper Baseplate
- Low Thermal Impedance for Improved Current Capability

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 | 08 | 99 | B |
| CN41 | 12 | (100 A) | |
| CS41 | 14 | | |
| | 16 | | |
| | 18 | | |



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Absolute Maximum Ratings

| Characteristics | Conditions | Symbol | | Units |
|---|---|--------------|-----------------|------------------------|
| Repetitive Peak Reverse Blocking Voltage | | V_{RRM} | up to 1800 | V |
| Non-Repetitive Peak Reverse Blocking Voltage ($t < 5$ msec) | | V_{RSM} | $V_{RRM} + 100$ | V |
| RMS Forward Current | DC Conduction, $T_C=90^\circ\text{C}$ | $I_{F(RMS)}$ | 157 | A |
| Average Forward Current | 180° Conduction, $T_C=100^\circ\text{C}$ | $I_{F(AV)}$ | 100 | A |
| Peak One Cycle Surge Current, Non-Repetitive | 60 Hz, 100% V_{RRM} reapplied, $T_J = 150^\circ\text{C}$ | I_{FSM} | 1,780 | A |
| | 60 Hz, No V_{RRM} reapplied, $T_J = 150^\circ\text{C}$ | I_{FSM} | 2,110 | A |
| | 50 Hz, 100% V_{RRM} reapplied, $T_J = 150^\circ\text{C}$ | I_{FSM} | 1,700 | A |
| | 50 Hz, No V_{RRM} reapplied, $T_J = 150^\circ\text{C}$ | I_{FSM} | 2,020 | A |
| I^2t for Fusing for One Cycle | 8.3 ms, 100% V_{RRM} reapplied, $T_J = 150^\circ\text{C}$ | I^2t | 13,190 | A^2sec |
| | 8.3 ms, No V_{RRM} reapplied, $T_J = 150^\circ\text{C}$ | I^2t | 18,650 | A^2sec |
| | 10 ms, 100% V_{RRM} reapplied, $T_J = 150^\circ\text{C}$ | I^2t | 14,450 | A^2sec |
| | 10 ms, No V_{RRM} reapplied, $T_J = 150^\circ\text{C}$ | I^2t | 20,430 | A^2sec |
| Operating Temperature | | T_J | -40 to +150 | $^\circ\text{C}$ |
| Storage Temperature | | T_{stg} | -40 to +150 | $^\circ\text{C}$ |
| 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, $T_J=25^\circ\text{C}$ unless otherwise specified

| Characteristics | Symbol | Test Conditions | Min. | Max. | Units |
|---|-------------|--|------|------|-------|
| Repetitive Peak Reverse Leakage Current | I_{RRM} | Up to 1800V, $T_J=150^\circ\text{C}$ | | 10 | mA |
| Peak On-State Voltage | V_{FM} | $T_J=25^\circ\text{C}$, $I_{FM}=300\text{A}$, 180° Conduction | | 1.35 | V |
| Threshold Voltage, Low-level | $V_{(FO)1}$ | $T_J = 150^\circ\text{C}$, $I = 16.7\% \times \pi I_{F(AV)}$ to $\pi I_{F(AV)}$ | | 0.85 | V |
| Slope Resistance, Low-level | r_{T1} | | | 1.3 | mΩ |

Thermal Characteristics

| Characteristics | Symbol | Test Conditions | Max. | Units |
|---|------------------|--|---------------|--|
| Thermal Resistance, Junction to Case | $R_{\theta J-C}$ | Per Module, both conducting Per Junction, both conducting | 0.175 0.35 | $^\circ\text{C/W}$ $^\circ\text{C/W}$ |
| Thermal Resistance, Case to Sink Lubricated | $R_{\theta C-S}$ | Per Module | 0.1 | $^\circ\text{C/W}$ |



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CS41_99B**

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