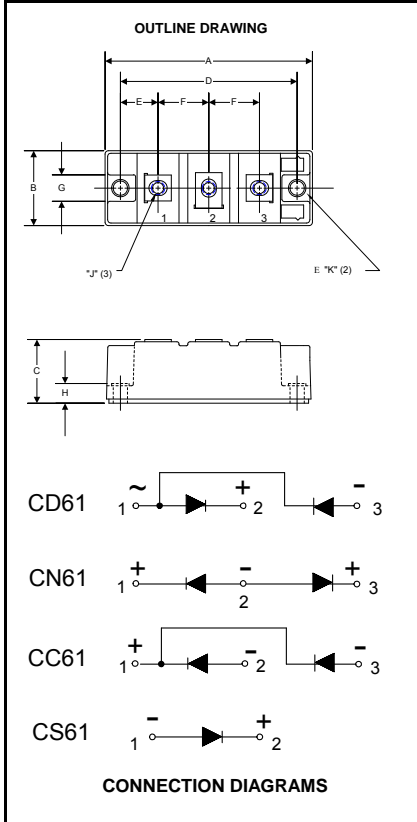


Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (724) 925-7272
www.pwr.com

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

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

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.

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

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



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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, $T_C=109^{\circ}C$ | $I_{F(RMS)}$ | 250 | A |
| Average Forward Current | 180° Conduction, $T_C=109^{\circ}C$ | $I_{F(AV)}$ | 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 | $A^2 \text{ sec}$ |
| | 8.3ms, 100% No V_{RRM} reapplied, $T_J=150C$ | I^2t | 73,000 | $A^2 \text{ sec}$ |
| | 10ms, 100% V_{RRM} reapplied, $T_J=150C$ | I^2t | 56,000 | $A^2 \text{ sec}$ |
| | 10ms, 100% No V_{RRM} reapplied, $T_J=150C$ | I^2t | 80,000 | $A^2 \text{ sec}$ |
| Operating Temperature | | T_J | -40 to +150 | $^{\circ}C$ |
| Storage Temperature | | T_{stg} | -40 to +150 | $^{\circ}C$ |
| Max. Mounting Torque, M6 Mounting Screw | | | 35 - 50 | in.-Lb. |
| | | | 4 - 6 | Nm |
| Max. Mounting Torque, M8 Terminal Screw | | | 35 - 50 | in.-Lb. |
| | | | 4 - 6 | Nm |
| Module Weight, Typical | | | 165 | g |
| | | | 0.36 | 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.



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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 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% I _{F(AV)} to 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 _{θJ-C} | Per Module, both conducting | 0.09 | °C/W |
| | | Per Junction both conducting | 0.18 | °C/W |
| Thermal Resistance, Case to Sink Lubricated | R _{θC-S} | Per Module | 0.05 | °C/W |

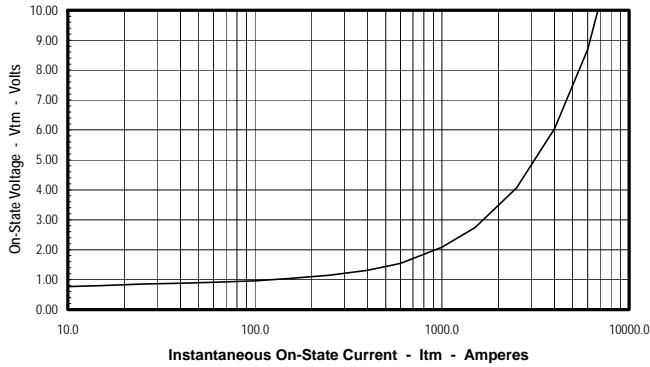


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CN61__16B, CC61__16B**

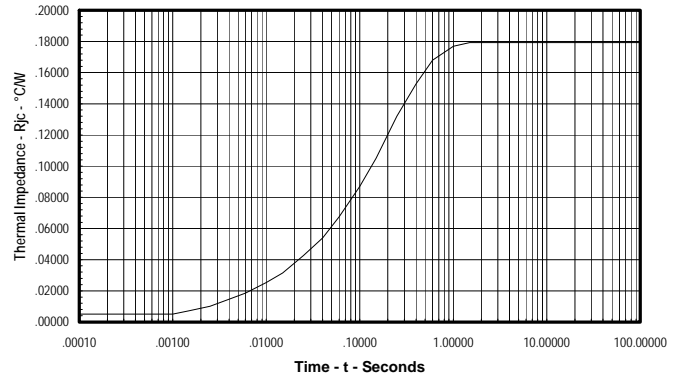
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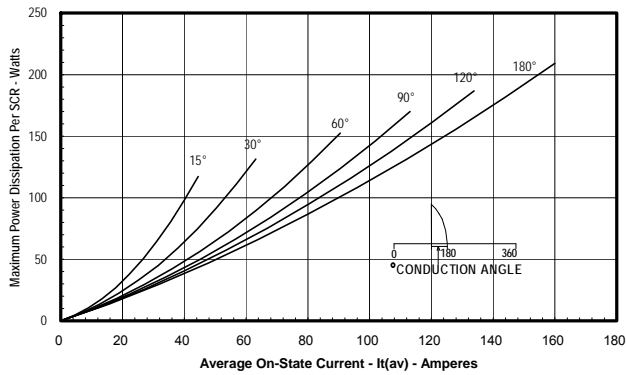
Maximum On-State Forward Voltage Drop
($T_j = 150^\circ\text{C}$)



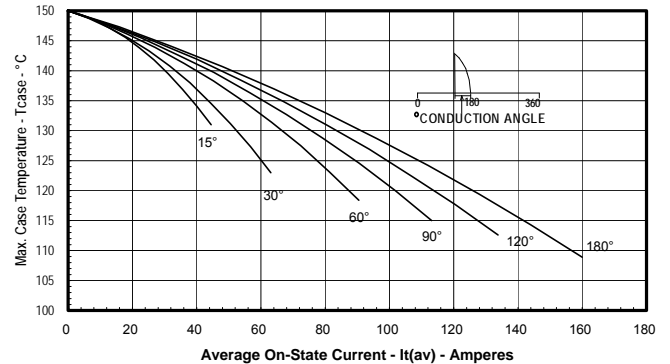
Maximum Transient Thermal Impedance
(Junction to Case)



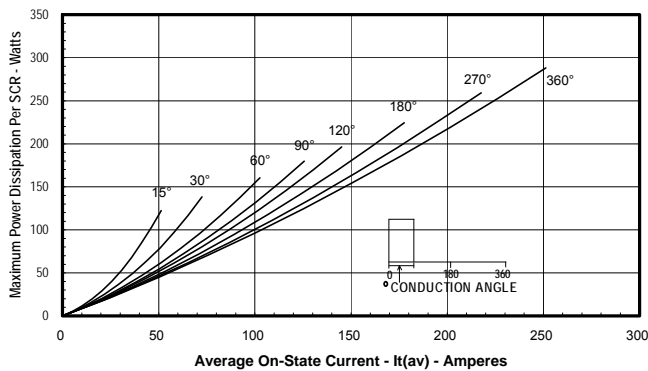
Maximum On-State Power Dissipation
(Sinusoidal Waveform)



Maximum Allowable Case Temperature
(Sinusoidal Waveform)



Maximum On-State Power Dissipation
(Rectangular Waveform)



Maximum Allowable Case Temperature
(Rectangular Waveform)

