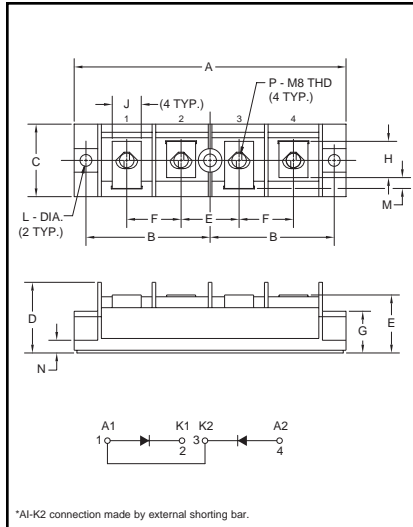


### Dual Diode POW-R-BLOK™ Modules 250 Amperes/800 Volts



#### Outline Drawing

| Dimension | Inches           | Millimeters  |
|-----------|------------------|--------------|
| A         | 5.906            | 150          |
| B         | 2.697±0.02       | 68.5±0.2     |
| C         | 1.575            | 40           |
| D         | 1.535            | 39           |
| E         | 1.260            | 32           |
| F         | 1.181            | 30           |
| G         | 0.906            | 23           |
| H         | 0.787            | 20           |
| J         | 0.630            | 16           |
| K         | 0.276            | 7            |
| L         | 0.256±0.008 Dia. | Dia. 6.5±0.2 |
| M         | 0.236            | 6            |
| N         | 0.197            | 5            |
| P         | M8 Metric        | M8           |



**CD510825  
Dual Diode  
POW-R-BLOK™ Modules  
250 Amperes/800 Volts**

#### Description:

Powerex Dual Diode POW-R-BLOK™ Modules are designed for use in applications requiring AC to DC rectification in isolated packaging. The modules are isolated for easy mounting with other components on common heatsinks. The CD510825 has been tested and recognized by Underwriters Laboratories (QQQX2 Power Switching Semiconductors).

#### Features:

- Isolated Mounting
- Glass Passivated Chips
- Metal Baseplate
- Low Thermal Impedance
- UL Recognized

#### Applications:

- Battery Supplies
- AC and DC Motor Power Supplies

#### Ordering Information:

Select the complete eight digit module part number you desire from the table below.  
Example: CD510825 is an 800 Volt, 250 Ampere Dual Diode POW-R-BLOK™ Module.

| Type | Voltage<br>Volts (x100) | Current Rating<br>Amperes (x10) |
|------|-------------------------|---------------------------------|
| CD51 | 08                      | 25                              |



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

**CD510825**

**Dual Diode POW-R-BLOK™ Modules**

250 Amperes/800 Volts

**Absolute Maximum Ratings**

| Characteristics   | Symbol       | CD510825   | Units      |
|---|--------------|------------|------------|
| Peak Reverse Blocking Voltage                                       | $V_{RRM}$    | 800        | Volts      |
| Transient Peak Reverse Blocking Voltage (Non-Repetitive), $t < 5ms$ | $V_{RSM}$    | 960        | Volts      |
| DC Reverse Blocking Voltage   | $V_{R(DC)}$  | 640        | Volts      |
| RMS On-State Current  | $I_{F(RMS)}$ | 390        | Amperes    |
| Average On-State Current, $T_C = 64^\circ C$                        | $I_{F(AV)}$  | 250        | Amperes    |
| Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)       | $I_{FSM}$    | 5000       | Amperes    |
| Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)       | $I_{FSM}$    | 4500       | Amperes    |
| $I^2t$ (for Fusing), 8.3 milliseconds                               | $I^2t$       | 100,000    | $A^2sec$   |
| Storage Temperature   | $T_{STG}$    | -40 to 125 | $^\circ C$ |
| Operating Temperature   | $T_j$        | -40 to 125 | $^\circ C$ |
| Maximum Mounting Torque M6 Mounting Screw                           | —            | 26         | in.-lb.    |
| Maximum Mounting Torque M8 Terminal Screw                           | —            | 72         | in.-lb.    |
| Module Weight (Typical)   | —            | 300        | Grams      |
| V Isolation   | $V_{RMS}$    | 2500       | Volts      |



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CD510825

Dual Diode POW-R-BLOK™ Modules

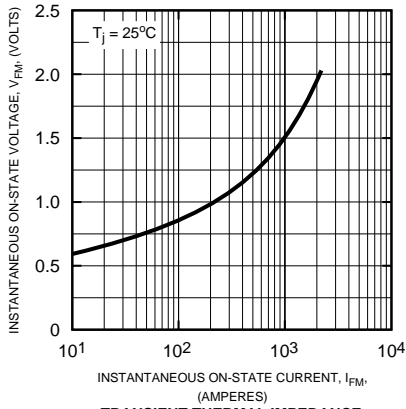
250 Amperes/800 Volts

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

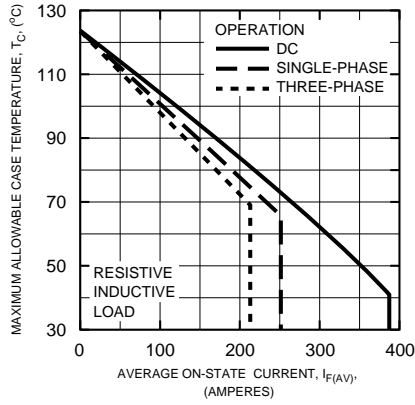
| Characteristics                               | Symbol            | Test Conditions                                      | CD510825 | Units                        |
|---|-------------------|--|----------|------------------------------|
| <b>Blocking State Maximums</b>                |                   |  |          |                              |
| Reverse Leakage Current, Peak                 | $I_{RRM}$         | $T_j = 125^\circ\text{C}$ , $V_{RRM} = \text{Rated}$ | 30       | mA                           |
| <b>Conducting State Maximums</b>              |                   |  |          |                              |
| Peak On-State Voltage                         | $V_{FM}$          | $I_{FM} = 750\text{A}$                               | 1.3      | Volts                        |
| <b>Thermal Maximums</b>                       |                   |  |          |                              |
| Thermal Resistance, Junction-to-Case          | $R_{\theta(J-C)}$ | Per Module   | 0.2      | $^\circ\text{C}/\text{Watt}$ |
| Thermal Resistance, Case-to-Sink (Lubricated) | $R_{\theta(C-S)}$ | Per Module   | 0.05     | $^\circ\text{C}/\text{Watt}$ |

**CD510825**  
**Dual Diode POW-R-BLOK™ Modules**  
 250 Amperes/800 Volts

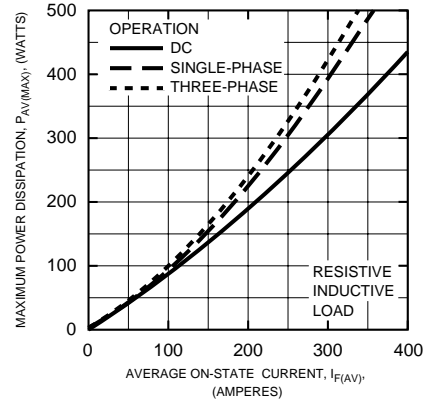
**MAXIMUM ON-STATE CHARACTERISTICS**



**MAXIMUM ALLOWABLE CASE TEMPERATURE**



**MAXIMUM ON-STATE POWER DISSIPATION**



**TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION-TO-CASE)**

