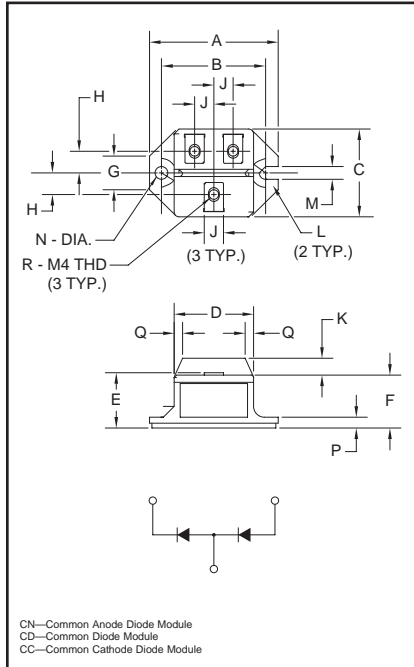


**Fast Recovery  
Dual Diode Modules  
50 Amperes/600-1200 Volts**



**Outline Drawing**

| Dimension | Inches      | Millimeters |
|-----------|-------------|-------------|
| A         | 2.106       | 53.5        |
| B         | 1.705±0.008 | 43.3±0.2    |
| C         | 1.437       | 36.5        |
| D         | 1.299       | 33          |
| E         | 0.925       | 23.5        |
| F         | 0.866       | 22          |
| G         | 0.551       | 14          |
| H         | 0.354       | 9           |
| J         | 0.315       | 8           |
| K         | 0.276       | 7           |
| L         | 0.236 R     | R6          |
| M         | 0.209       | 5.3         |
| N         | 0.209 Dia.  | Dia. 5.3    |
| P         | 0.177       | 4.5         |
| Q         | 0.138       | 3.5         |
| R         | M4 Metric   | M4          |



**CN24\_\_50, CD24\_\_50, CC24\_\_50  
Fast Recovery Dual Diode Modules  
50 Amperes/600-1200 Volts**

**Description:**

Powerex Fast Recovery Dual Diode Modules are designed for use in applications requiring fast switching. The modules are isolated for easy mounting with other components on common heatsinks.

**Features:**

- Isolated Mounting
- Planar Chips

**Applications:**

- Free Wheeling

**Ordering Information:**

Select the complete eight digit module part number you desire from the table below. Example: CN241250 is a 1200 Volt, 50 Ampere Fast Recovery Common Anode Diode Module.

| Type | Voltage<br>Volts (x100) | Current Rating<br>Amperes (50) |
|------|-------------------------|--------------------------------|
| CN24 | 06                      | 50                             |
| CD24 | 12                      |                                |



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

**CN24\_\_50, CD24\_\_50, CC24\_\_50**  
**Fast Recovery Dual Diode Modules**  
 50 Amperes/600-1200 Volts

**Absolute Maximum Ratings**

| Characteristics   | Symbol      | CN240650   | CN241250   | Units              |
|---|-------------|------------|------------|--------------------|
|   |             | CD240650   | CD241250   |                    |
|   |             | CC240650   | CC241250   |                    |
| Peak Reverse Blocking Voltage                                       | $V_{RRM}$   | 600        | 1200       | Volts              |
| Transient Peak Forward Blocking Voltage (Non-Repetitive), $t < 5ms$ | $V_{RSM}$   | 720        | 1350       | Volts              |
| DC Reverse Blocking Voltage   | $V_{R(DC)}$ | 480        | 960        | Volts              |
| DC Output Current, $T_C = 105^\circ C$                              | $I_{F(DC)}$ | 50         | 50         | Amperes            |
| Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)       | $I_{FSM}$   | 1000       | 1000       | Amperes            |
| Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)       | $I_{FSM}$   | 910        | 910        | Amperes            |
| $I^2t$ (for Fusing), 8.3 milliseconds                               | $I^2t$      | 4165       | 4165       | A <sup>2</sup> sec |
| Storage Temperature   | $T_{STG}$   | -40 to 125 | -40 to 125 | °C                 |
| Operating Temperature   | $T_j$       | -40 to 150 | -40 to 150 | °C                 |
| Maximum Mounting Torque M5 Mounting Screw                           | —           | 17         | 17         | in.-lb.            |
| Maximum Mounting Torque M4 Terminal Screw                           | —           | 12         | 12         | in.-lb.            |
| Module Weight (Typical)   | —           | 90         | 90         | Grams              |
| V Isolation   | $V_{RMS}$   | 2500       | 2500       | Volts              |

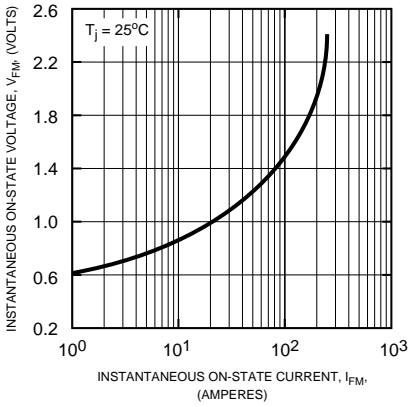
CN24\_ \_50, CD24\_ \_50, CC24\_ \_50  
**Fast Recovery Dual Diode Modules**  
 50 Amperes/600-1200 Volts

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

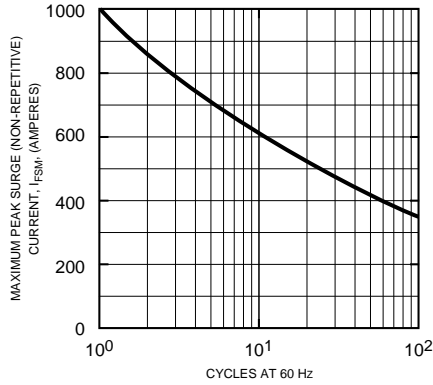
| Characteristics                               | Symbol            | Test Conditions   | CN24_ _50<br>CD24_ _50<br>CC24_ _50 | Units                        |
|---|-------------------|---|-------------------------------------|------------------------------|
| <b>Blocking State Maximums</b>                |                   |   |                                     |                              |
| Reverse Leakage Current, Peak                 | $I_{RRM}$         | $T_j = 150^\circ\text{C}$ , $V_{RRM} = \text{Rated}$  | 10                                  | mA                           |
| <b>Conducting State Maximums</b>              |                   |   |                                     |                              |
| Peak On-State Voltage                         | $V_{FM}$          | $I_{FM} = 50\text{A}$   | 1.5                                 | Volts                        |
| <b>Switching Maximums</b>                     |                   |   |                                     |                              |
| Reverse Recovery Time                         | $t_{rr}$          | $I_{FM} = 50\text{A}$ , $T_j = 150^\circ\text{C}$<br>$di/dt = -100\text{A}/\mu\text{s}$ , $V_R = 1/2V_{RM}$ | 0.8                                 | $\mu\text{s}$                |
| Reverse Recovery Charge                       | $Q_{rr}$          | $I_{FM} = 50\text{A}$ , $T_j = 150^\circ\text{C}$<br>$di/dt = -100\text{A}/\mu\text{s}$ , $V_R = 1/2V_{RM}$ | 30                                  | $\mu\text{C}$                |
| <b>Thermal Maximums</b>                       |                   |   |                                     |                              |
| Thermal Resistance, Junction-to-Case          | $R_{\theta(J-C)}$ | Per Module  | 0.6                                 | $^\circ\text{C}/\text{Watt}$ |
| Thermal Resistance, Case-to-Sink (Lubricated) | $R_{\theta(C-S)}$ | Per Module  | 0.4                                 | $^\circ\text{C}/\text{Watt}$ |

**CN24\_50, CD24\_50, CC24\_50**  
**Fast Recovery Dual Diode Modules**  
 50 Amperes/600-1200 Volts

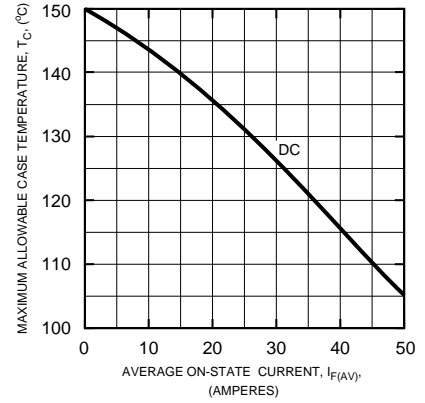
**MAXIMUM ON-STATE CHARACTERISTICS**



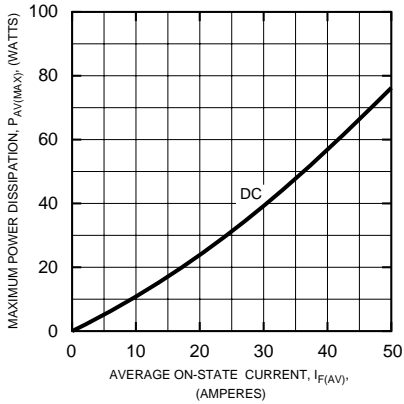
**MAXIMUM ALLOWABLE PEAK SURGE (NON-REPETITIVE) CURRENT**



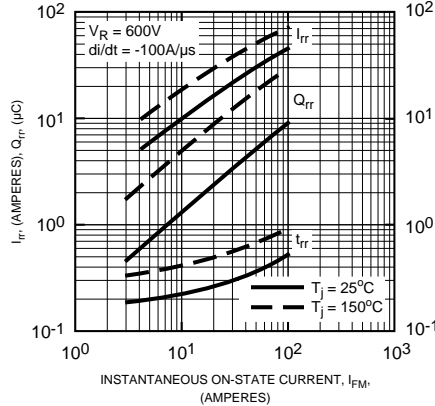
**MAXIMUM ALLOWABLE CASE TEMPERATURE**



**MAXIMUM ON-STATE POWER DISSIPATION**



**REVERSE RECOVERY CHARACTERISTICS**



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

