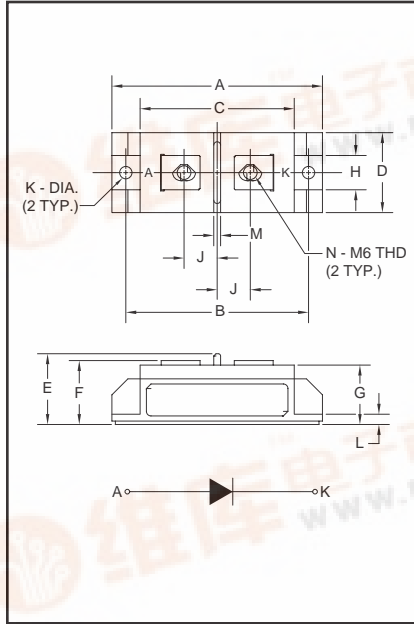


CS641230

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

**Fast Recovery Single Diode Module**  
300 Amperes/1200 Volts



Outline Drawing



**CS641230**  
Fast Recovery  
Single Diode Module  
300 Amperes/1200 Volts

**Description:**

Powerex Fast Recovery Single 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:**

- Inverters
- Choppers
- Switching Power Supplies
- Free Wheeling

**Ordering Information:**

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

Example: CS641230 is a 1200 Volt, 300 Ampere Fast Recovery Single Diode Module.

| Type | Voltage Volts (x100) | Current Rating Amperes (x10) |
|------|----------------------|------------------------------|
| CS64 | 12                   | 30                           |

| Dimension | Inches                        | Millimeters |
|-----------|-------------------------------|-------------|
| A         | 3.630±0.01                    | 92.2±0.25   |
| B         | 3.150±0.008                   | 80±0.2      |
| C         | 2.657±0.01                    | 67.5±0.25   |
| D         | 1.378±0.012-0.000             | 35±0.3-0.0  |
| E         | 1.220                         | 31          |
| F         | 1.102                         | 28          |
| G         | 1.024                         | 26          |
| H         | 0.591                         | 15          |
| J         | 0.571                         | 14.5        |
| K         | 0.213±0.004 Dia. Dia. 5.4±0.1 |             |
| L         | 0.177                         | 4.5         |
| M         | 0.118                         | 3           |
| N         | M6 Metric                     | M6          |



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

**CS641230**  
**Fast Recovery Single Diode Module**  
300 Amperes/1200 Volts

### Absolute Maximum Ratings

| Characteristics   | Symbol      | CS641230   | Units      |
|---|-------------|------------|------------|
| Peak Reverse Blocking Voltage                                       | $V_{RRM}$   | 1200       | Volts      |
| Transient Peak Reverse Blocking Voltage (Non-Repetitive), $t < 5ms$ | $V_{RSM}$   | 1350       | Volts      |
| DC Reverse Blocking Voltage   | $V_{R(DC)}$ | 960        | Volts      |
| DC Current, $T_C = 75^\circ C$                                      | $I_{F(DC)}$ | 300        | Amperes    |
| Peak Half-Cycle Surge (Non-Repetitive) On-State Current (60Hz)      | $I_{FSM}$   | 3000       | Amperes    |
| $I^2t$ (for Fusing), 8.3 milliseconds                               | $I^2t$      | 37500      | $A^2sec$   |
| Junction Temperature  | $T_j$       | -40 to 150 | $^\circ C$ |
| Storage Temperature   | $T_{STG}$   | -40 to 125 | $^\circ C$ |
| Maximum Mounting Torque M5 Mounting Screw                           | —           | 17         | in.-lb.    |
| Maximum Mounting Torque M6 Terminal Screw                           | —           | 26         | in.-lb.    |
| Module Weight (Typical)   | —           | 200        | Grams      |
| V Isolation   | $V_{RMS}$   | 2500       | Volts      |



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

CS641230

Fast Recovery Single Diode Module

300 Amperes/1200 Volts

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

| Characteristics                               | Symbol            | Test Conditions  | CS641230     | Units                        |
|---|-------------------|--|--------------|------------------------------|
| <b>Blocking State Maximums</b>                |                   |  |              |                              |
| Reverse Leakage Current, Peak                 | $I_{RRM}$         | $T_j = 150^\circ\text{C}$ , $V_{RRM} = \text{Rated}$   | 40           | mA                           |
| <b>Conducting State Maximums</b>              |                   |  |              |                              |
| Peak On-State Voltage                         | $V_{FM}$          | $I_{FM} = 300\text{A}$ , $T_j = 25^\circ\text{C}$  | 1.5          | Volts                        |
| <b>Switching Maximums</b>                     |                   |  |              |                              |
| Reverse Recovery Time                         | $t_{rr}$          | $I_{FM} = 300\text{A}$ , $T_j = 150^\circ\text{C}$<br>$di/dt = -600\text{A}/\mu\text{s}$ , $V_R = 600\text{V}$ | 0.8          | $\mu\text{s}$                |
| Reverse Recovery Charge                       | $Q_{rr}$          | $I_{FM} = 300\text{A}$ , $T_j = 150^\circ\text{C}$<br>$di/dt = -600\text{A}/\mu\text{s}$ , $V_R = 600\text{V}$ | 80           | $\mu\text{C}$                |
| <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   | 0.15         | $^\circ\text{C}/\text{Watt}$ |
| Isolation Resistance, Main Terminal-to-Case   | —                 | Per Module   | 10 (minimum) | $\text{m}\Omega$             |



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

**CS641230**  
**Fast Recovery Single Diode Module**  
 300 Amperes/1200 Volts

