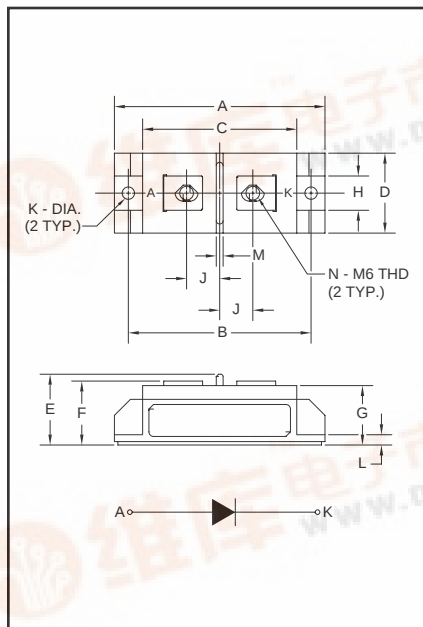


## CS640525 Tentative

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

### Fast Recovery Single Diode Module

250 Amperes/500 Volts



Outline Drawing

| 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          |



**CS640525**  
Fast Recovery  
Single Diode Module  
250 Amperes/500 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:

- ☐ Free Wheeling

#### Ordering Information:

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

Example: CS640525 is a 500 Volt, 250 Ampere Fast Recovery Single Diode Module.

| Type | Voltage<br>Volts (x100) | Current Rating<br>Amperes (x10) |
|------|-------------------------|---------------------------------|
| CS64 | 5                       | 25                              |



Tentative

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

**CS640525**

**Fast Recovery Single Diode Modules**

250 Amperes/500 Volts

**Absolute Maximum Ratings**

| Characteristics                                                | Symbol      | CS640525          | Units                  |
|----------------------------------------------------------------|-------------|-------------------|------------------------|
| Repetitive Peak Reverse Voltage                                | $V_{RRM}$   | 500               | Volts                  |
| Non-Repetitive Peak Reverse Voltage                            | $V_{RSM}$   | 600               | Volts                  |
| DC Reverse Voltage                                             | $V_{R(DC)}$ | 400               | Volts                  |
| DC Current, $T_C = 50^\circ\text{C}$                           | $I_{DC}$    | 250               | Amperes                |
| Peak Half-Cycle Surge (Non-Repetitive) On-State Current (60Hz) | $I_{FSM}$   | 4500              | Amperes                |
| $I^2t$ (for Fusing), 8.3 milliseconds                          | $I^2t$      | $8.5 \times 10^4$ | $\text{A}^2\text{sec}$ |
| Junction Temperature                                           | $T_j$       | -40 to 150        | $^\circ\text{C}$       |
| Storage Temperature                                            | $T_{STG}$   | -40 to 125        | $^\circ\text{C}$       |
| 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                  |

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

| Characteristics                              | Symbol            | Test Conditions                                                                                               | CS640525 | Units                        |
|----------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------|----------|------------------------------|
| <b>Blocking State Maximums</b>               |                   |                                                                                                               |          |                              |
| Repetitive Reverse Current                   | $I_{RRM}$         | $T_j = 150^\circ\text{C}$ , $V_{RRM} = \text{Rated}$                                                          | 20       | mA                           |
| <b>Conducting State Maximums</b>             |                   |                                                                                                               |          |                              |
| Forward Voltage Drop                         | $V_{FM}$          | $I_{FM} = 250\text{A}$ , $T_j = 25^\circ\text{C}$                                                             | 1.2      | Volts                        |
| <b>Switching Maximums</b>                    |                   |                                                                                                               |          |                              |
| Reverse Recovery Time                        | $t_{rr}$          | $I_{FM} = 250\text{A}$ , $T_j = 25^\circ\text{C}$<br>$di/dt = -200\text{A}/\mu\text{s}$ , $V_R = 100\text{V}$ | 0.65     | $\mu\text{s}$                |
| Reverse Recovery Charge                      | $Q_{rr}$          | $I_{FM} = 250\text{A}$ , $T_j = 25^\circ\text{C}$<br>$di/dt = -200\text{A}/\mu\text{s}$ , $V_R = 100\text{V}$ | 100      | $\mu\text{C}$                |
| <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-Fin (Lubricated) | $R_{\theta(C-F)}$ | Per Module                                                                                                    | 0.08     | $^\circ\text{C}/\text{Watt}$ |
| Insulation Resistance, Main Terminal-to-Case | —                 | Per Module                                                                                                    | —        | $\text{m}\Omega$             |