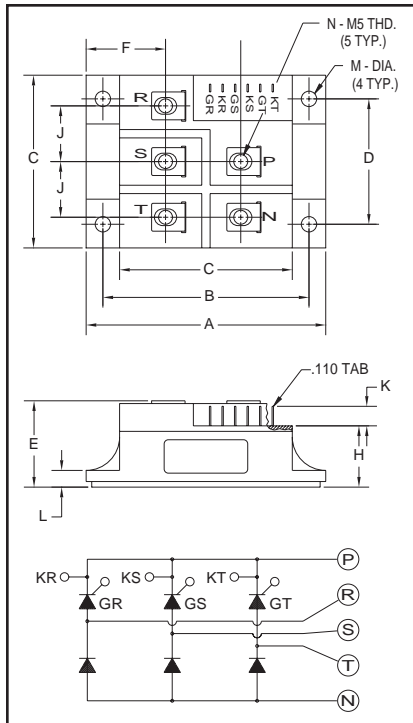
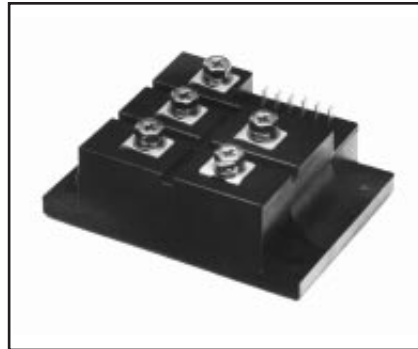


Three-Phase SCR/Diode Bridge Modules 30 Amperes/800 Volts



Outline Drawing

| Dimension | Inches | Millimeters |
|-----------|------------------|--------------|
| A | 3.386 | 86 |
| B | 2.913±0.012 | 74±0.3 |
| C | 2.441 | 62 |
| D | 1.772±0.008 | 45±0.2 |
| E | 1.220 | 31 |
| F | 1.122 | 28.5 |
| G | 1.063 | 27 |
| H | 0.866 | 22 |
| J | 0.787 | 20 |
| K | 0.276 | 7 |
| L | 0.236 | 6 |
| M | 0.217±0.008 Dia. | 5.5±0.2 Dia. |
| N | M5 Metric | M5 |



CE420830
Three-Phase SCR/Diode
Bridge Modules
30 Amperes/800 Volts

Description:

Powerex Three-Phase SCR/Diode Bridge Modules are designed for use in applications requiring variable DC Voltage control from AC mains. The modules are isolated for easy mounting with other components on common heatsinks.

Features:

- Isolated Mounting
- Glass Passivated Chips
- $dv/dt = 500V/\mu s$
- Metal Baseplate
- Low Thermal Impedance
- Quick Connect Signal Terminals

Applications:

- Battery Supplies
- AC and DC Motor Control
- Furnace Control

Ordering Information:

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

Example: CE420830 is a 800 Volt, 30 Ampere Three-Phase SCR/Diode Bridge Module.

| Type | Voltage Volts (x100) | Current Rating Amperes (30) |
|------|-------------------------|--------------------------------|
| CE42 | 08 | 30 |



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

CE420830

Three-Phase SCR/Diode Bridge Modules

30 Amperes/800 Volts

Absolute Maximum Ratings

| Characteristics | Symbol | CE420830 | Units |
|---|--------------------|------------|------------------|
| Peak Forward Blocking Voltage | V_{DRM} | 800 | Volts |
| Transient Peak Forward Blocking Voltage (Non-Repetitive), $t < 5ms$ | V_{DSM} | 960 | Volts |
| DC Forward Blocking Voltage | $V_{D(DC)}$ | 640 | Volts |
| 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 |
| DC Output Current, $T_C = 80^\circ C$ | I_O | 30 | Amperes |
| Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz) | I_{TSM}, I_{FSM} | 300 | Amperes |
| Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz) | I_{TSM}, I_{FSM} | 275 | Amperes |
| I^2t (for Fusing), 8.3 milliseconds | I^2t | 378 | A^2sec |
| Critical Rate-of-Rise of On-State Current* | di/dt | 100 | Amperes/ μs |
| Peak Gate Power Dissipation | P_{GM} | 5.0 | Watts |
| Average Gate Power Dissipation | $P_{G(AV)}$ | 0.5 | Watts |
| Peak Forward Gate Voltage | V_{GFM} | 10 | Volts |
| Peak Reverse Gate Voltage | V_{GRM} | 5.0 | Volts |
| Peak Forward Gate Current | I_{GFM} | 2.0 | Amperes |
| Storage Temperature | T_{STG} | -40 to 125 | $^\circ C$ |
| Operating Temperature | T_j | -40 to 125 | $^\circ C$ |
| Maximum Mounting Torque M5 Mounting Screw | — | 17 | in.-lb. |
| Maximum Mounting Torque M5 Terminal Screw | — | 17 | in.-lb. |
| Module Weight (Typical) | — | 310 | Grams |
| V Isolation | V_{RMS} | 2000 | Volts |

* $T_j = 125^\circ C, I_G = 0.5A, V_D = 1/2 V_{DRM}$



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CE420830
Three-Phase SCR/Diode Bridge Modules
30 Amperes/800 Volts

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

| Characteristics | Symbol | Test Conditions | CE420830 | Units |
|---|--------------------------------|---|----------|-----------------------|
| Blocking State Maximums | | | | |
| Forward Leakage Current, Peak | I_{DRM} | $T_j = 125^\circ\text{C}$, $V_{\text{DRM}} = \text{Rated}$ | 4.0 | mA |
| Reverse Leakage Current, Peak | I_{RRM} | $T_j = 125^\circ\text{C}$, $V_{\text{RRM}} = \text{Rated}$ | 4.0 | mA |
| Conducting State Maximums | | | | |
| Peak On-State Voltage | $V_{\text{FM}}, V_{\text{TM}}$ | $I_{\text{FM}} = 45\text{A}$, $I_{\text{TM}} = 45\text{A}$, | 1.5 | Volts |
| Switching Minimums | | | | |
| Critical Rate-of-Rise of Off-State Voltage | dv/dt | $T_j = 125^\circ\text{C}$, $V_{\text{D}} = 2/3 V_{\text{DRM}}$ | 500 | Volts/ μs |
| Thermal Maximums | | | | |
| Thermal Resistance, Junction-to-Case | $R_{\theta(\text{J-C})}$ | Per Module | 1.8 | $^\circ\text{C/Watt}$ |
| Thermal Resistance, Case-to-Sink (Lubricated) | $R_{\theta(\text{C-S})}$ | Per Module | 0.06 | $^\circ\text{C/Watt}$ |
| Gate Parameters Maximums | | | | |
| Gate Current-to-Trigger | I_{GT} | $V_{\text{D}} = 6\text{V}$, $R_{\text{L}} = 2\Omega$ | 50 | mA |
| Gate Voltage-to-Trigger | V_{GT} | $V_{\text{D}} = 6\text{V}$, $R_{\text{L}} = 2\Omega$ | 2.0 | Volts |
| Non-Triggerring Gate Voltage | V_{GDM} | $T_j = 125^\circ\text{C}$, $V_{\text{D}} = 1/2 V_{\text{DRM}}$ | 0.25 | Volts |

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