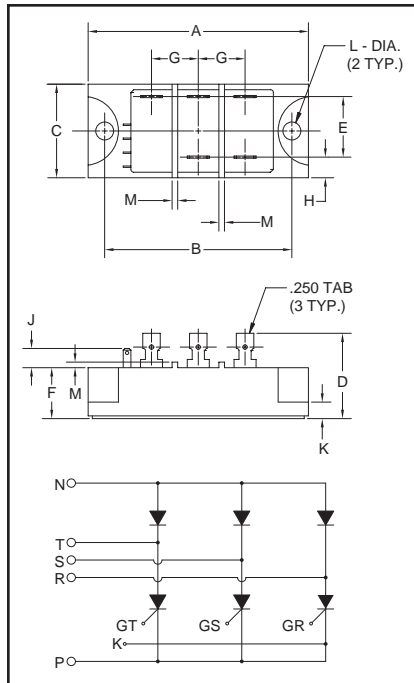


### Three-Phase SCR/Diode Bridge Modules 20 Amperes/800 Volts



**Outline Drawing**

Dimension	Inches	Millimeters
A	3.15	80
B	2.677±0.012	68±0.3
C	1.34	34
D	1.22	31
E	0.87	22
F	0.73	18.5
G	0.67	17
H	0.30	7.5
J	0.28	7
K	0.24	6
L	0.777 Dia.	Dia. 4.5
M	0.08	2



**CE720802  
Three-Phase SCR/Diode  
Bridge Modules  
20 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

#### 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: CE720802 is an 800 Volt, 20 Ampere Three-Phase SCR/Diode Bridge Module.

Type	Voltage Volts (x100)	Current Rating Amperes (x10)
CE72	08	02



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

**CE720802**

**Three-Phase SCR/Diode Bridge Modules**

20 Amperes/800 Volts

**Absolute Maximum Ratings**

Characteristics	Symbol	CE720802	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, $T_C = 80^\circ C$	$I_O$	20	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	$I_{TSM}, I_{FSM}$	200	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	$I_{TSM}, I_{FSM}$	180	Amperes
$I^2t$ (for Fusing), 8.3 milliseconds	$I^2t$	167	A <sup>2</sup> sec
Critical Rate-of-Rise of On-State Current*	$di/dt$	50	Amperes/ $\mu s$
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 M4 Mounting Screw	—	12	in.-lb.
Maximum Mounting Torque M4 Terminal Screw	—	12	in.-lb.
Module Weight (Typical)	—	130	Grams
V Isolation	$V_{RMS}$	2500	Volts

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



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**CE720802**

**Three-Phase SCR/Diode Bridge Modules**

20 Amperes/800 Volts

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

Characteristics	Symbol	Test Conditions	CE720802	Units
<b>Blocking State Maximums</b>				
Forward Leakage Current, Peak	$I_{\text{DRM}}$	$T_j = 125^\circ\text{C}$ , $V_{\text{DRM}} = \text{Rated}$	4.0	mA
Reverse Leakage Current, Peak	$I_{\text{RRM}}$	$T_j = 125^\circ\text{C}$ , $V_{\text{RRM}} = \text{Rated}$	4.0	mA
<b>Conducting State Maximums</b>				
Peak On-State Voltage	$V_{\text{TM}}$	$I_{\text{TM}} = 20\text{A}$	1.4	Volts
Peak On-State Voltage	$V_{\text{TM}}$	$I_{\text{TM}} = 20\text{A}$	1.3	Volts
<b>Switching Minimums</b>				
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/ $\mu\text{s}$
<b>Thermal Maximums</b>				
Thermal Resistance, Junction-to-Case	$R_{\theta(\text{J-C})}$	Per Module	4.5	$^\circ\text{C/Watt}$
Thermal Resistance, Case-to-Sink (Lubricated)	$R_{\theta(\text{C-S})}$	Per Module	0.1	$^\circ\text{C/Watt}$
<b>Gate Parameters Maximums</b>				
Gate Current-to-Trigger	$I_{\text{GT}}$	$V_{\text{D}} = 6\text{V}$ , $R_{\text{L}} = 2\Omega$	50	mA
Gate Voltage-to-Trigger	$V_{\text{GT}}$	$V_{\text{D}} = 6\text{V}$ , $R_{\text{L}} = 2\Omega$	2.0	Volts
Non-Triggering Gate Voltage	$V_{\text{GDM}}$	$T_j = 125^\circ\text{C}$ , $V_{\text{D}} = 1/2 V_{\text{DRM}}$	0.25	Volts

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