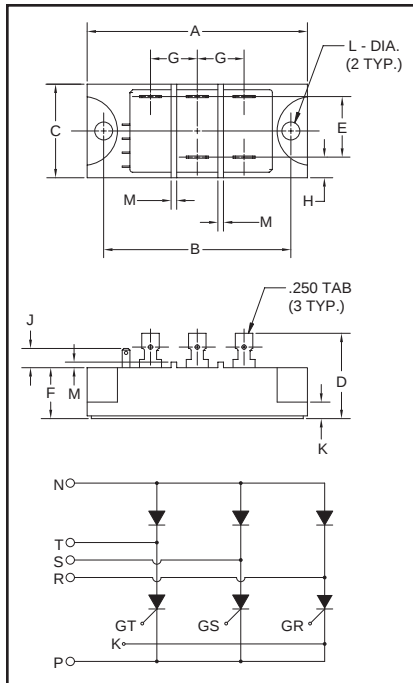


Three-Phase SCR/Diode Bridge Modules 20 Amperes/800 Volts



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^2sec
Critical Rate-of-Rise of On-State Current*	di/dt	50	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 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
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_{TM}	$I_{\text{TM}} = 20\text{A}$	1.4	Volts
Peak On-State Voltage	V_{TM}	$I_{\text{TM}} = 20\text{A}$	1.3	Volts
Switching Minimums				
Critical Rate-of-Rise of Off-State Voltage	dv/dt	$T_j = 125^\circ\text{C}$, $V_D = 2/3 V_{\text{DRM}}$	500	Volts/ μs
Thermal Maximums				
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	$^\circ\text{C/Watt}$
Gate Parameters Maximums				
Gate Current-to-Trigger	I_{GT}	$V_D = 6\text{V}$, $R_L = 2\Omega$	50	mA
Gate Voltage-to-Trigger	V_{GT}	$V_D = 6\text{V}$, $R_L = 2\Omega$	2.0	Volts
Non-Triggering Gate Voltage	V_{GDM}	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{\text{DRM}}$	0.25	Volts

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