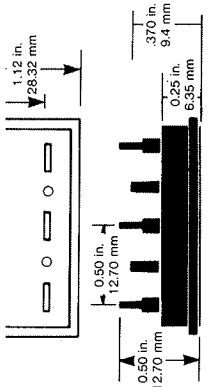
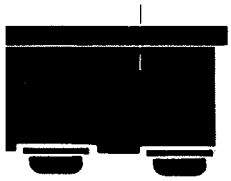
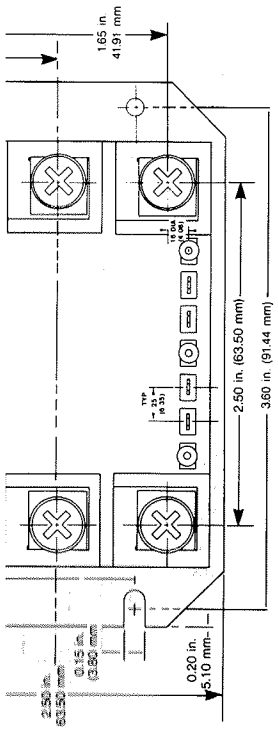





# L Series SCR Bridge Circuits

Crydom's L-Series represents the latest innovation in the packaging of single phase power semiconductor bridges. Rated at 13 to 42.5 Amperes, the L-Series can be used in a variety of phase control applications including the speed control of DC motors up to 1-1/2 horsepower.

L-Series features completely isolated construction (rated for 2500 V. "hi-pot" test) in a low profile package. Electrical connections can be made by direct insertion onto a printed circuit board. The entire assembly can be mounted to a heatsink as shown in figure 1.

Nine basic circuits are available. These include complete single phase bridges with free wheeling diodes, as well as two SCR "Building Blocks" for more complex circuits. Voltage ratings are available for either 120, 240 or 280 volt AC power line applications.

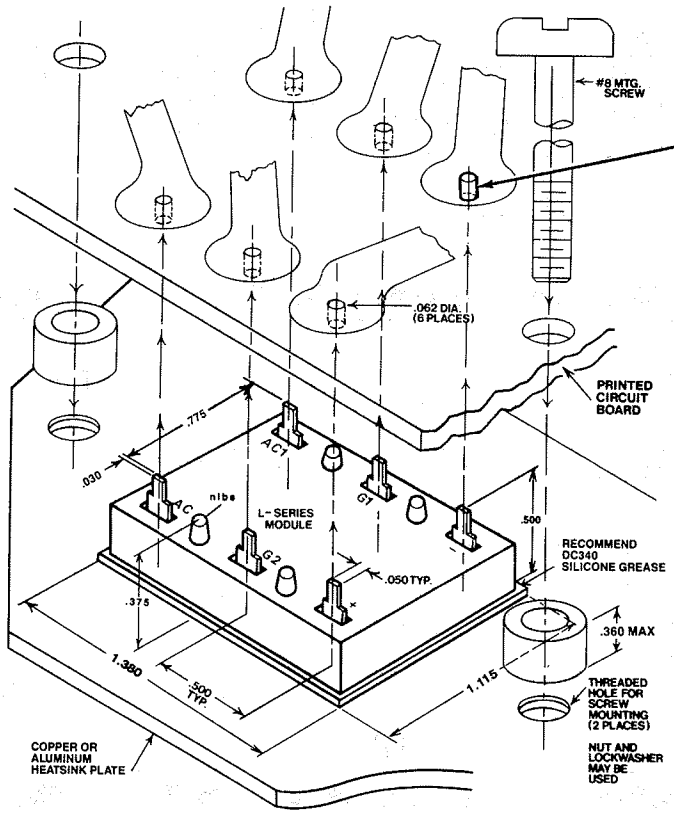



FIGURE 1

## *Low Cost*

*13/20/25/42.5 Amperes*

*120/240/280 VAC*

## Ideal for up to 1½ HP DC PM Motors

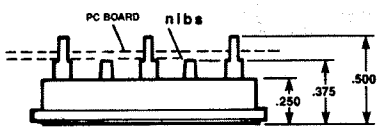



FIGURE 2

UL RECOGNIZED

## ELECTRICAL SPECIFICATIONS

| | | SERIES | | | |
|---|---|---|---|---|---|
| | | L3 | L4 | L5 | L6* |
| $I_d$ | maximum dc output current @ 85° ceramic full bridge (A) | 13.0 | 20 | 25 | 42.5 |
| $I_{T(RMS)}$ | maximum output current @ 85° ceramic plate CKT 5 (A) | 15.0 | 22 | 27 | 46 |
| $V_{TM}$ | maximum SCR voltage (V) @amperes peak | 1.8V @13A | 2.2V @20A | 2.2V @25A | 2.2V @40A |
| $I_H$ | maximum holding current (mA) | 100 | 100 | 100 | 200 |
| $T_J$ | operating junction temperature range | −25°C to +125°C | | | |
| di/dt | critical rate of rise of on-state current @ $T_J$ = 125°C (A/μS) | 100 | 100 | 100 | 100 |
| dv/dt | critical rate of rise of off-state voltage @ $T_J$ = 125°C (A/μS) | 200 | 200 | 200 | 200 |
| $V_{RMS}$ | AC line input voltage (V) | 120<br>240<br>280 | 120<br>240<br>280 | 120<br>240<br>280 | 120<br>240<br>280 |
| $I_{TSM}$ | maximum non-repetitive surge current (A) | 150 | 250 | 300 | 600 |
| $I^2t$ | maximum $I^2t$ for fusing t = 8.3 ($A^2$ sec) | 94 | 260 | 375 | 1500 |

*Not available in all circuit configurations.

| | | SERIES | | | |
|---|---|---|---|---|---|
| | | L3 | L4 | L5 | L6* |
| $I_{GT}$ | maximum required gate current to trigger, 25°C (mA) | 100 | 100 | 100 | 100 |
| $I_{GM}$ | maximum peak gate current (A) | 1.5 | 3.0 | 3.0 | 3.0 |
| $V_{GT}$ | maximum required gate voltage to trigger, 25°C (V) | 2.5 | 2.5 | 2.5 | 3.0 |
| $V_{GD}$ | maximum non-triggering gate voltage at $T_J$ = 125°C (V) | 0.2 | 0.2 | 0.2 | 0.2 |
| $P_{GM}$ | maximum peak gate power, tp = 10μSec. (W) | 5.0 | 5.0 | 5.0 | 5.0 |
| $P_{G(AV)}$ | average gate power (W) | 0.5 | 0.5 | 0.5 | 0.5 |
| $V_{GM}$ | maximum peak gate voltage (reverse) (V) | 5.0 | 5.0 | 5.0 | 5.0 |
| Rocs | maximum thermal resistance case to sink (°C/W) | 0.1 | 0.1 | 0.1 | 0.1 |
| $V_{FM}$ | maximum peak forward voltage at amperes peak | 1.6 @13A | 1.85 @20A | 2.0 @25A | 2.0 @40A |
| ReJC | typical thermal resistance junction to ceramic base per device (°C/W) | 0.6 | 0.5 | 0.5 | 0.5 |

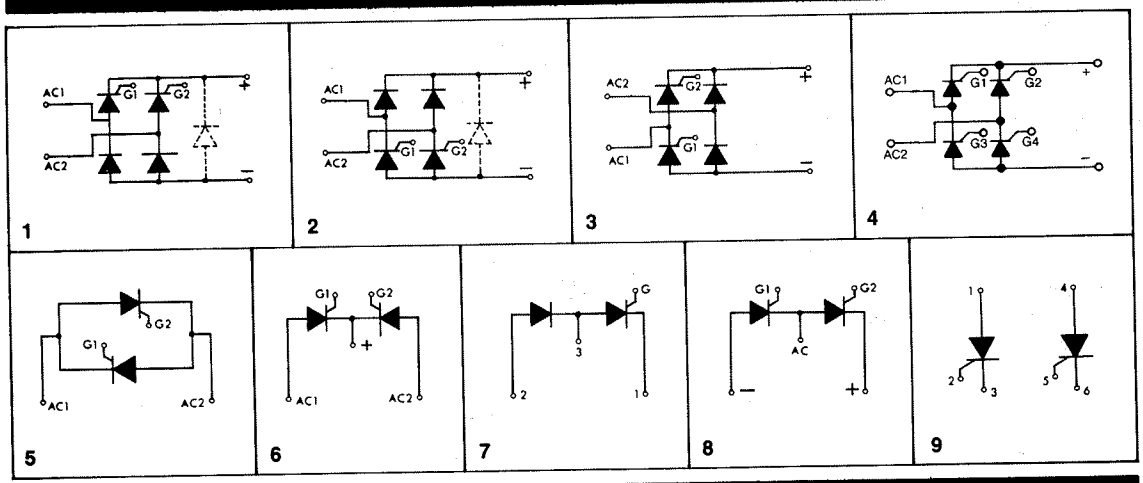
## PART NUMBER INDENTIFICATION

| 1st Digit Series Type | 2nd Digit Current | 3rd Digit Circuit Type | 4th Digit AC Line Voltage | Options |
|---|---|---|---|---|
| **L** | **3**-13 Amp.<br>**4**-20 Amp.<br>**5**-25 Amp.<br>**6**-42.5 Amp.* | **1-9**<br>(see schematic diagrams) | **1**-120 volts<br>**2**-240 volts<br>**3**-280 volts | **F**-Free Wheeling Diode Option<br>**C**-Gate to cathode capacitor option. Consult factory. |

*Not available in all circuit configurations.

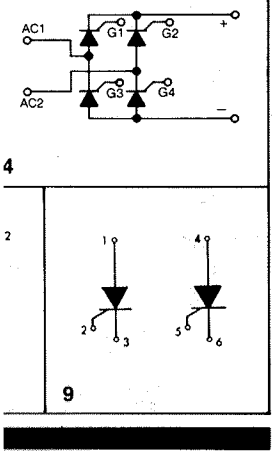
Each part number consists of 4 to 7 digits. Use the table to determine the part that fits your needs.

## ELECTRICAL SCHEMATICS



| | SERIES | | | |
|---|---|---|---|---|
| nt to | L3 | L4 | L5 | L6* |
| | 100 | 100 | 100 | 100 |
| A) | 1.5 | 3.0 | 3.0 | 3.0 |
| je to | 2.5 | 2.5 | 2.5 | 3.0 |
| voltage | 0.2 | 0.2 | 0.2 | 0.2 |
| | 5.0 | 5.0 | 5.0 | 5.0 |
| | 0.5 | 0.5 | 0.5 | 0.5 |
| | 5.0 | 5.0 | 5.0 | 5.0 |
| case to | 0.1 | 0.1 | 0.1 | 0.1 |
| e at | 1.6 @13A | 1.85 @20A | 2.0 @25A | 2.0 @40A |
| ction to | 0.6 | 0.5 | 0.5 | 0.5 |

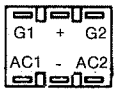
part number consists of
7 digits. Use the table
termine the part
fits your needs.



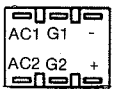

# terminal orientation

## "L3, 4 & 5" SERIES

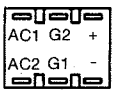
**CIRCUIT 1**



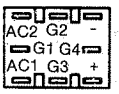

**CIRCUIT 2**



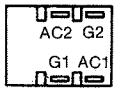

**CIRCUIT 3**



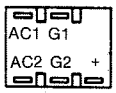

**CIRCUIT 4**



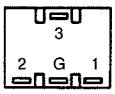

**CIRCUIT 5**



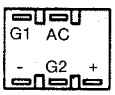

**CIRCUIT 6**



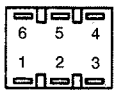

**CIRCUIT 7**




**CIRCUIT 8**



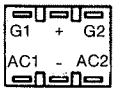

**CIRCUIT 9**



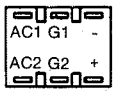

# terminal orientation

## "L6" SERIES

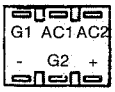
**CIRCUIT 1**



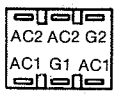

**CIRCUIT 2**




**CIRCUIT 3**




**CIRCUIT 5**



# AMEYA360
Components Supply Platform

## Authorized Distribution Brand :

## Website :

Welcome to visit www.ameya360.com

## Contact Us :

- ### Address :

  401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
  Minhang District, Shanghai , China

- ### Sales :

  Direct +86 (21) 6401-6692

  Email amall@ameya360.com

  QQ 800077892

  Skype ameyasales1 ameyasales2

- ### Customer Service :

  Email service@ameya360.com

- ### Partnership :

  Tel +86 (21) 64016692-8333

  Email mkt@ameya360.com