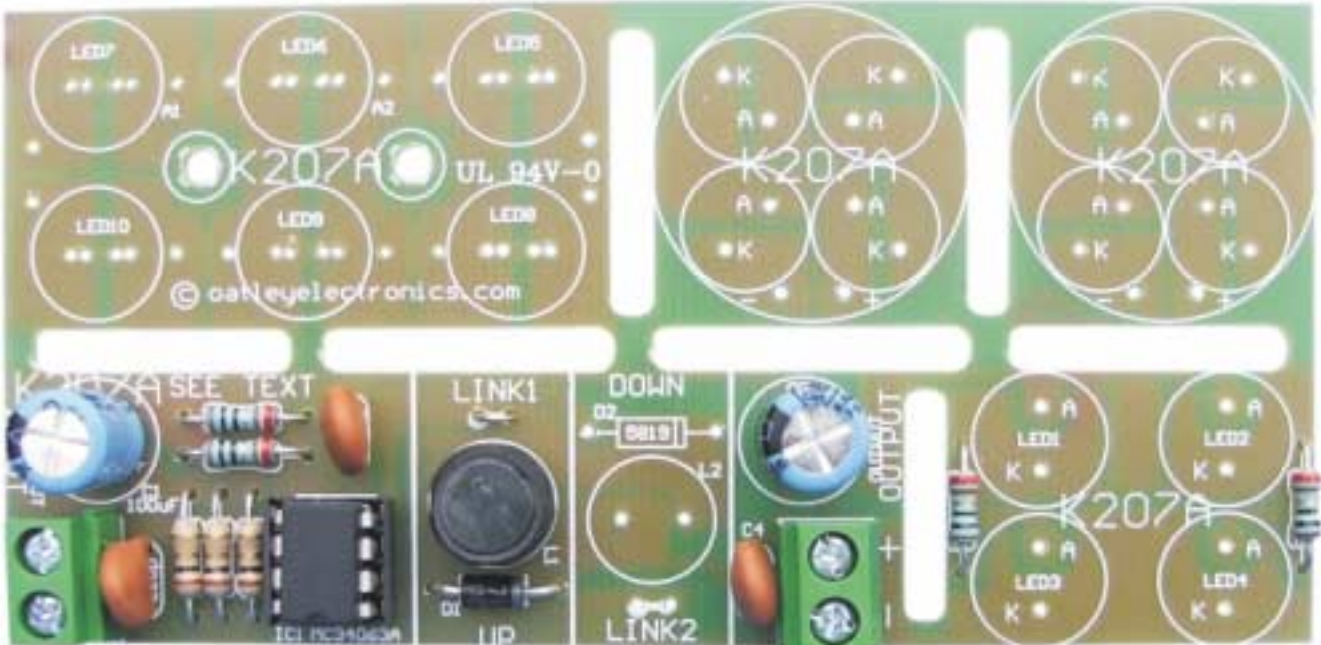


K207A UP / DOWN INVERTER / LED DRIVER WITH EXPERIMENTERS LED ARRAY PCBs.



K207A - SWITCHED MODE LED DRIVER KIT

NOTE. Make sure that you read and understand these notes before starting any assembly of the kit.

This small multi purpose MC34063A switched mode LED driver kit is supplied with three extra lamp PCB's to suit cars, general lighting etc. The kit can be configured as "up" or a "down" inverter and it is designed to drive various LED's. With the components supplied the it can be configured to drive 20mA LED's at 18mA, 150mA (0.5W) LED's at 125mA, and 350mA (1W) LED's at 312mA. The kit could also drive a 3W LED but the resistor/s for this configuration are not supplied.

HOW IT WORKS

At first glance the circuit appears complex but this is because it can be configured both as both a simple "up" or a "down" inverter. The individual simple circuits can easily be obtained by searching for information for MC34063A on the Internet. However these circuits use a two resistor divider to obtain a reference feedback voltage of 1.25V. In this application the resistor or a combination of resistors that form R4 are connected in series with the LED/s

or strings there of. The LED/s current is therefore regulated to a figure that produces 1.25V across R4, and therefore $I=1.25/R4$. More application notes will be added.

CONSTRUCTION

Resistors in the kit, all 1/4w:
In the position marked R4 use the following values....
For 20mA LED's use 68 ohm - act. $I=18mA$
For 150mA LED's use 10 ohm - act. $I=125mA$
For 2 strings of 2 1/2W LED's use 2 X 10R For 1W LED's use 4 ohm (3X12 ohms in parallel.) act. $I=312mA$

Resistors used to set the output.
1 X 68R
2 X 10R
3 X 12R
For 3W LED's use 1.4 ohm (4X5.6 ohm in parallel) not supplied in kit.

NOTE: There is a section of the PCB marked UP and another marked DOWN. Place the components indicated in the UP section if you want to build an up inverter or in the down section if you want to build an down up inverter. Next select and fit the resistors with the values required to drive your choice of LED's. Lastly fit the rest of the kits components.

PARTS LIST

RESISTORS
5 X 1R 0.25W
2 X 10R 0.6W
1 X 68R 0.25W
3 X 12R 0.25W

CAPACITORS
3 X 220pf disk ceramic
1 X 100uF/16V electrolytic
1 X 100uF/35V electrolytic

SEMI-CONDUCTORS
1 X MC34063A IC
1 X 8 pin IC socket
1 X IN5819 Diode

Misc
2 X 2 way screw terminal
1 X PCB K207A
1 X 100uH inductor

NOTE: The availability of some components may vary and so parts supplied may be substituted from time to time without notice.

Schematic diagram is supplied with the kit.

To correct a mistake on the PCB, scrape the green solder resist from a small area of these tracks until you see a bright copper colour then place a solder bridge as shown here.

