5x7 ANIMATED LED SIGNBOARD CODE 174

(LEVEL 1)

This circuit is the chasing light circuit. It can be setting the pattern by yourselves. It has three function for displaying: chasing from right to left, chasing from left to right and chasing from right to left and left to right alternately.

Technical specifications:

- power supply : 3-5VDC.
- consumption : 85mA max.@ 3VDC.
- display : 5x7 dot matrix LED's each 5 mm.
- it can be created displaying by your idea.
- long of displaying : not more than 48 columns and 5 rows.
- dimensions of PCB : 2.83 x 3.96 inches

How to works:

At the heart of the circuit is the mircocontroller IC1 which IC1 is programming form factory completely. Port P1.1 to P1.7 are connected to transistor TR1 to TR7 for drive LED at column and port P3.0 to P3.4 are driving LED at row. Switch S1 to S3 are used for control the operation of circuit and setting of displaying. Section switch RESET is used for reset the circuit to default.

PCB assembly:

Shown in Figure 3 is the assembled PCB. Starting with the lowest height components first, taking care not to short any tracks or touch the edge connector with solder. Some tracks run under components, and care should be taken not to short out these tracks. If the pins will not enter the holes with ease, use a small drill to slightly enlarge the opening. All components with axial leads should be carefully bent to fit the position on the PCB and then soldered into place. Make sure that the electrolytic capacitors are inserted the correct way around. Some components are particularly sensitive to heat (ie: Transistors, IC's, diodes etc.) extra care must be taken to only apply the iron for as little time as possible, using a pair of pliers to grip the leads will help conduct heat away. Trim components leads with wire cutters to prevent excess lengths causing a short circuit. Now check that you really did mount them all the right way round!

Using:

Connect the power supply 3VDC to the circuit. At display is showing the message "I ♡ Y" and chasing from left to right and chasing from right to left alternately. When you want to setting the displaying, push S2 for into setting mode. You will see the message "I ♡ Y" stop chasing and the display is not displaying everything. Setting the display with see at "Setting mode".

How to setting:

1.In normal mode, push switch S2 for into setting mode.

2.Setting the display at you want by

- Switch S1 is used for setting LED light on or light off in that position while blinking.

- Switch S2 is used for slide the LED position to row but push and hold this switch, the display will be cleared and LED is lighted off.

- Switch S3 is used for slide the LED position to column but push and hold this switch, the circuit is exit from setting mode and displaying in the last position.

Note: If there is pushing and hold switch S3 and following push swich S2, the circuit will exit from setting mode and display is displaying at the old data before into setting mode.

How to use:

1.Switch S1 is used for select function of chasing.

2.Switch S2 is used for into setting mode when push this switch.

3.Switch S3 is used for set the speed of chasing (when connect the power supply to the circuit at the first time, the circuit cannot set the speed of chasing)
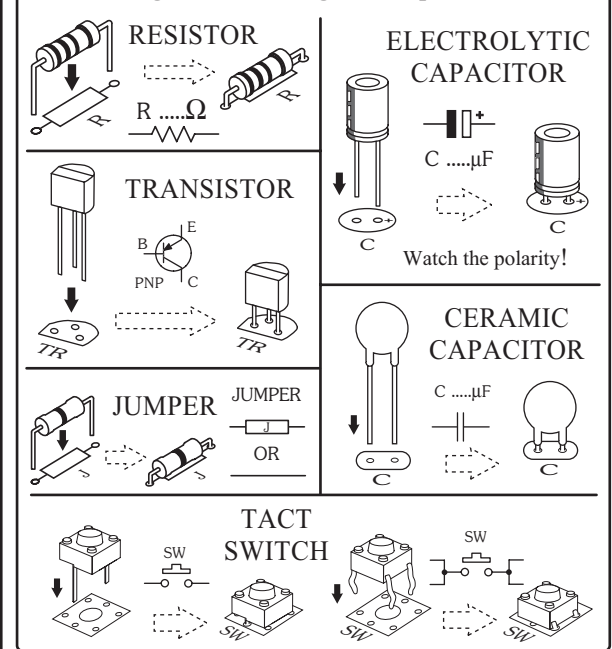
4.Switch RESET is used to reset the circuit to default.

POWER DOWN mode:

This mode is used in case the battery to be near the empty and you want to change the battery.

1.Push and hold switch S1 until all LED is lighted off.

2.Change the new battery within 15 minutes because the data will lost.

3.When change the new battery is complete, push switch RESET, the old data is no lost.

Figure 1. Installing the components

RESISTOR

R ......Ω

TRANSISTOR

JUMPER

ELECTROLYTIC CAPACITOR

C .....µF

Watch the polarity!

CERAMIC CAPACITOR

C .....µF

TACT SWITCH

Troubleshooting:

The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted in the wrong places. Make sure that all the polarised components have been soldered the right way round.

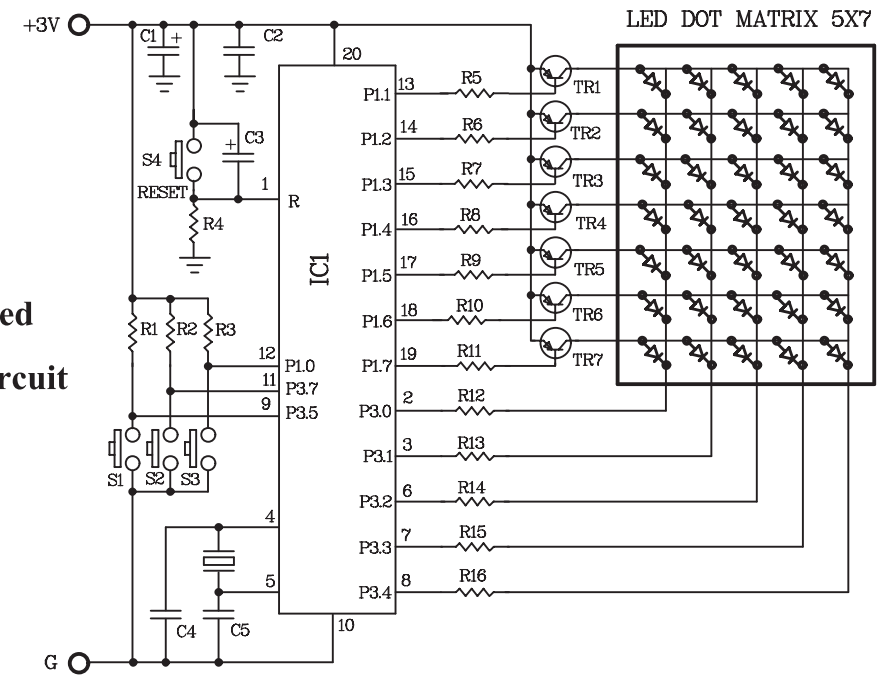### Figure 2. The 5x7 animated LED signboard circuit

LED DOT MATRIX 5X7

Figure 3. Connections

FK174-1

POWER SOURCE 1.5Vx2 SIDE AA

RED +

BLACK -

NOTE:

FUTURE BOX FB05 is suitable for this kit.