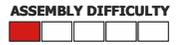
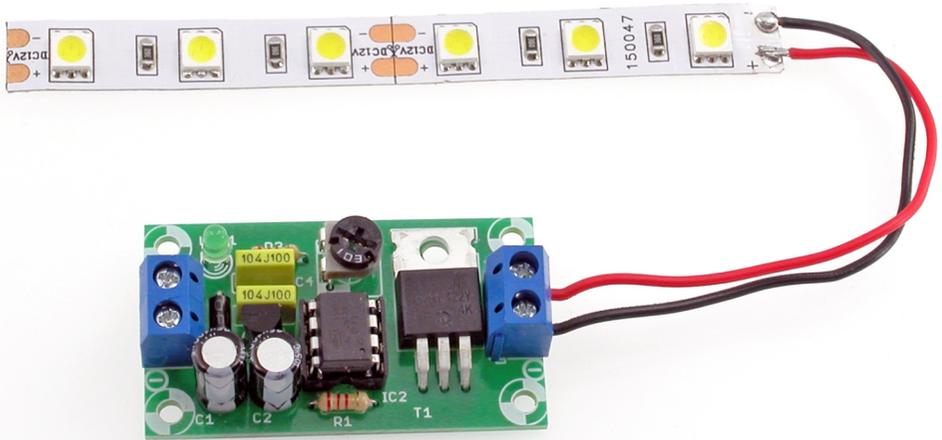




AVT 1975



The device is dedicated to work with 12V LED strips and halogen bulbs, eliminating the effect of sudden flashes. It provides a smooth, adjustable brightening of the light source attached to the output from 1 to approximately 20 seconds.

Specifications

- brightening time adjustable from 1 to about 20 seconds,
- output load max. 4 A (approx. 50 W)
- supply 12 VDC
- board size: 48×27 mm

Circuit description

Schematic diagram of the controller is shown in Figure 1. The module is switched on between the power source and the receiver. It should be supplied with DC voltage - this can be a battery or any power supply with a current capacity equivalent to the attached load. The D1 diode provides protection against being connected to a voltage of the wrong polarity. The input voltage is applied to stabiliser IC1 type 78L05, while capacitors C1...C4 provide appropriate filtering of this voltage. The operation of the circuit is controlled by the IC2 microcontroller (ATtiny25) and starts immediately after the supply voltage is applied. Duration of the brightening function can be adjusted using the PR1 potentiometer from 1 to approximately 20 seconds. The brightening process is indicated by LED1 flashing, while when the process is complete, LED1 lights up continuously. The module must be assembled on a 27 mmx48 mm

PCB, the schematic diagram of which is shown in Figure 2. Start mounting the circuit by soldering resistors and other small-size components onto the board, and finish by assembling the socket, electrolytic capacitors, screw connectors and transistor. No radiator is required when working with loads up to 50 W. Once mounted, the circuit is immediately ready for operation, requiring only adjustment of the PR1 potentiometer as required for the duration of the brightening function.

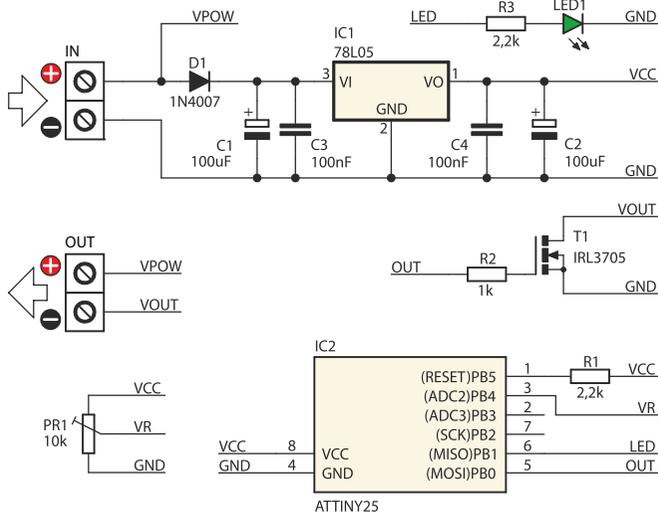


Fig. 1 Schematic diagram

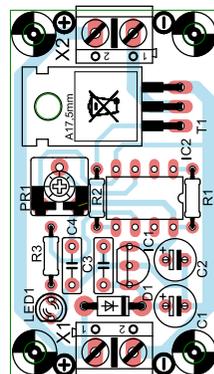


Fig. 2. Components arrangement on PCB

List of components

Resistors:

R1, R3:.....2.2 kΩ (red-red-red-gold)
 R2:.....1 Ω (brown-black-red-gold)
 PR1:.....mounting potentiometer 10 kΩ

Capacitors:

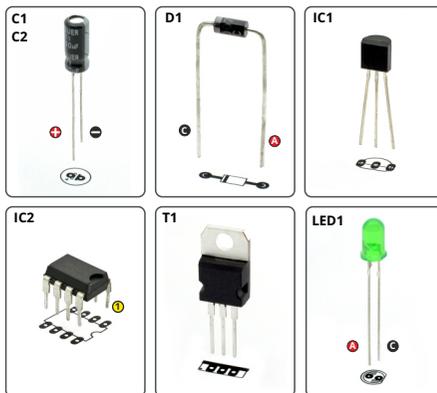
C1, C2:100 µF !
 C3, C4:.....100 µF (can be labelled as 104)

Semiconductors:

D1:.....1N4007 !
 IC1:.....78L05 !
 IC2:.....ATtiny25 + socket !
 T1:.....IRL3705 !
 LED1:LED !

Other:

X1, X2:DG301-5.0/2



We begin the assembly by soldering the components onto the board in order of size, from the smallest to the largest. When installing components marked with an exclamation mark, pay attention to their polarity. Frames with pinout drawings and symbols of these components on the circuit board, as well as photographs of the assembled kit, can be helpful. To access high-resolution images as links, download the PDF.

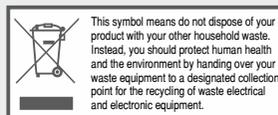


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