

Low-Cost LED Dimmer using LM3578

This Low-cost LED dimer project includes two main parts, an LM3578 chip, and a MOSFET. The LM3578 generates a PWM signal, and Q1 MOSFET helps to drive a high current LED. The project also includes current limit feature. Over current trigger point is set to 1.1A. LED intensity can be set using a board trimmer potentiometer. The compact and low-profile circuit occupies a very small area. PCB has the option to mount DIP8 IC or SOIC8 IC.

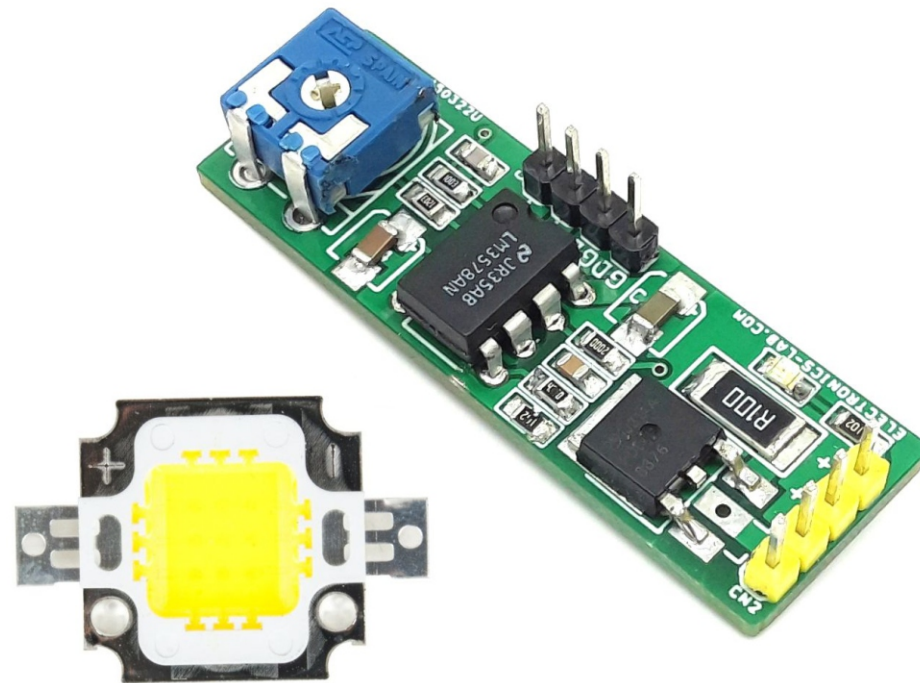
Note: Read the datasheet of LM3578 to alter the PWM Duty Cycle, Current Limit, Operating PWM Frequency etc.

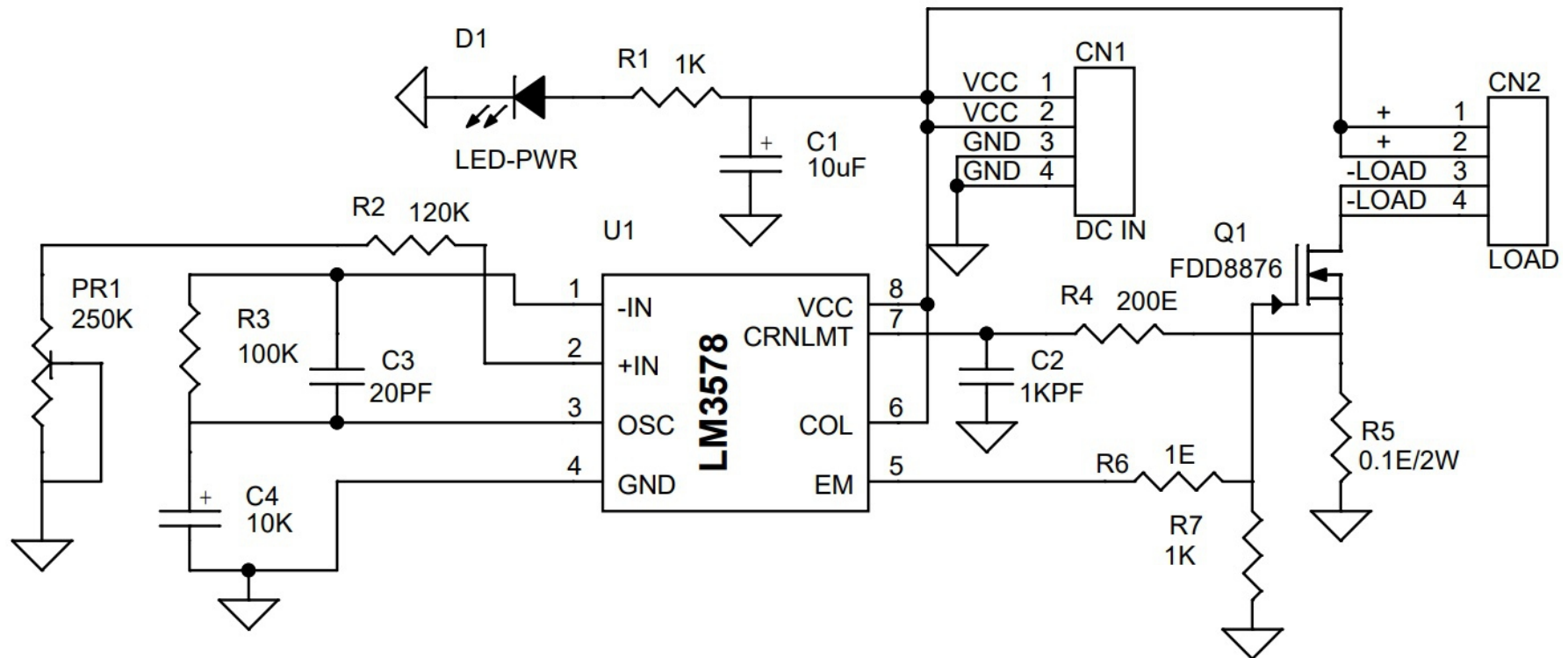
Connections

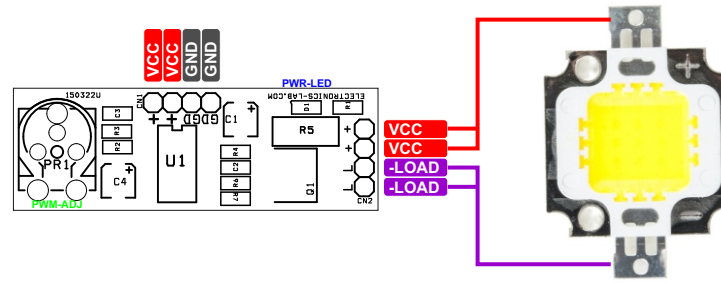
- **CN1:** Pin 1 + Pin 2 = VCC and Pin 3 + Pin 4 = GND
- **CN2:** Pin 1 + Pin 2 = VCC and Pin 3 + Pin 4 = -Load
- **PR1:** Trimmer Potentiometer to adjust the LED Dimmer

Features

- Supply 12V DC
- Load Up to 1Amp (1 to 10W -12V LED)
- Over Current Limit 1.1Amp
- PWM Duty Cycle 0 to 80%
- PWM Frequency 10Khz
- On Board Power LED
- PCB Dimensions 47.94 x 15.56mm

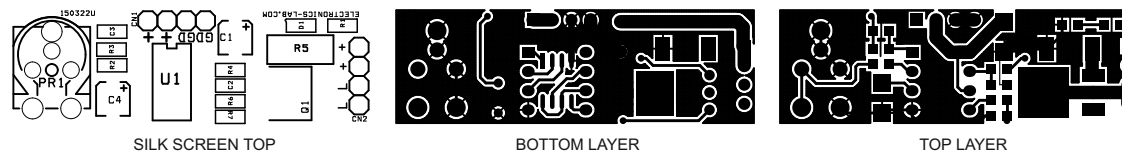






BOM						
NO.	QNTY.	REF	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	4 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5317-ND
2	1	CN2	4 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5317-ND
3	1	C1	10uF/25V SMD SIZE 1210 OR 1206	YAGEO/MURATA	DIGIKEY	
4	1	C2	1KPF SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
5	1	C3	20PF SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
6	1	C4	10K PF 0.01uF SMD SIZE 1206 OR 1210	YAGEO/MURATA	DIGIKEY	
7	1	D1	LED-PWR	LITE ON INC	DIGIKEY	160-1427-1-ND
8	1	PR1	250K TRIMMER POTENTIOMETER	CTS ELECTROCOMPONENTS	DIGIKEY	262UR254B-ND
9	1	Q1	FDD8876	ON SEMI	DIGIKEY	FDD8876CT-ND
10	2	R1,R7	1K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
11	1	R2	120K % SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
12	1	R3	100K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
13	1	R4	200E 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
14	1	R5	0.1E/2W 1% SMD SIZE 2512	YAGEO/MURATA	DIGIKEY	
15	1	R6	1E 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
16	1	U1	LM3578 DIP 8 OR SOIC8	TI	MOUSER	926-LM3578AN/NOPB

PCB Has Provision for DIP8 or SOIC8 SMD for U1



PCB DIMENSIONS 47.94MM X 15.56MM

