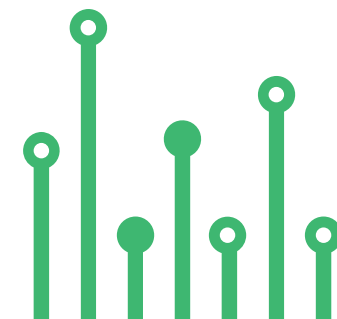


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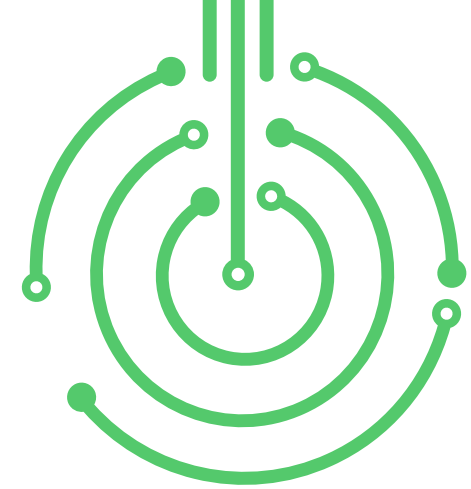
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LIGHT - POWER CONTROL



# “ Electronic DC Load Using TLE2141 —



SKU: EL134838

# Electronic DC Load Using TLE2141



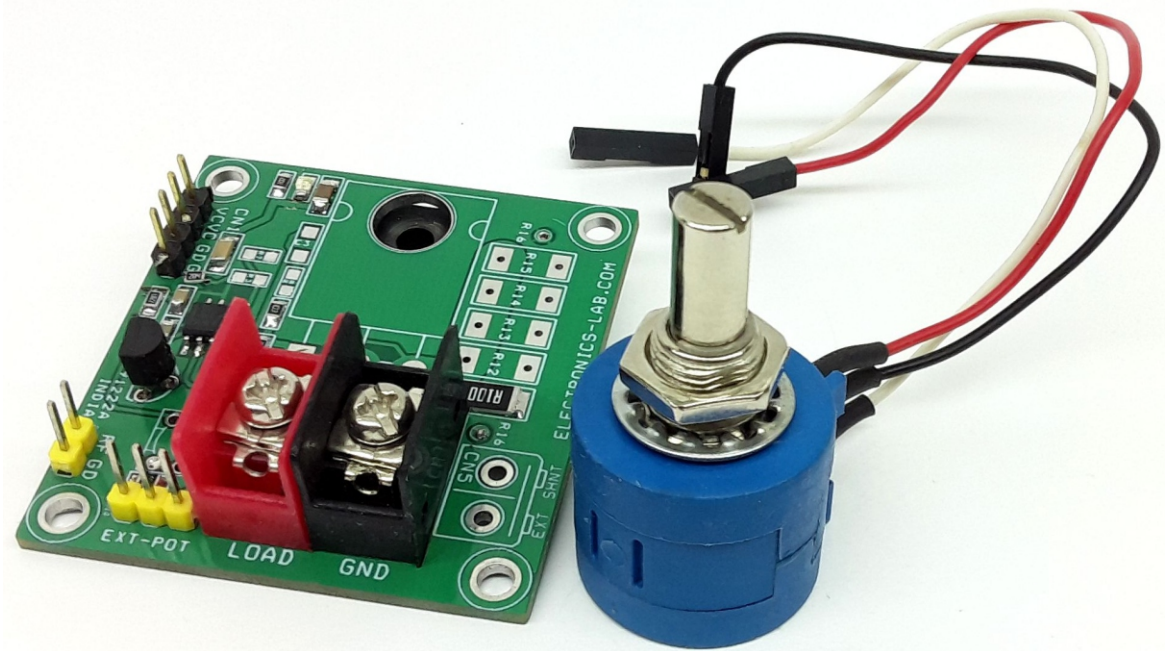
The circuit shown here is a low-cost electronic DC load designed to sink current from a power source. This test equipment can be used to test power devices such as power supplies, chargers, solar panels, and batteries. The board is built using op-amp TLE2141, LM385 provides the reference voltage. Resistor R11 acts as a shunt resistor and provides load current feedback to the op-amp, potentiometer P1 is provided to adjust the load current, and D1 is the power LED. A 10-turn Potentiometer is provided for fine current adjustment. The user may use a single-turn PR1 trimmer potentiometer. The load current range is up to 2.5A, and the project can handle higher currents with large-size heat-sink and forced air using a Fan. You may use a 0 to 5A Current Meter in series to measure the load current.



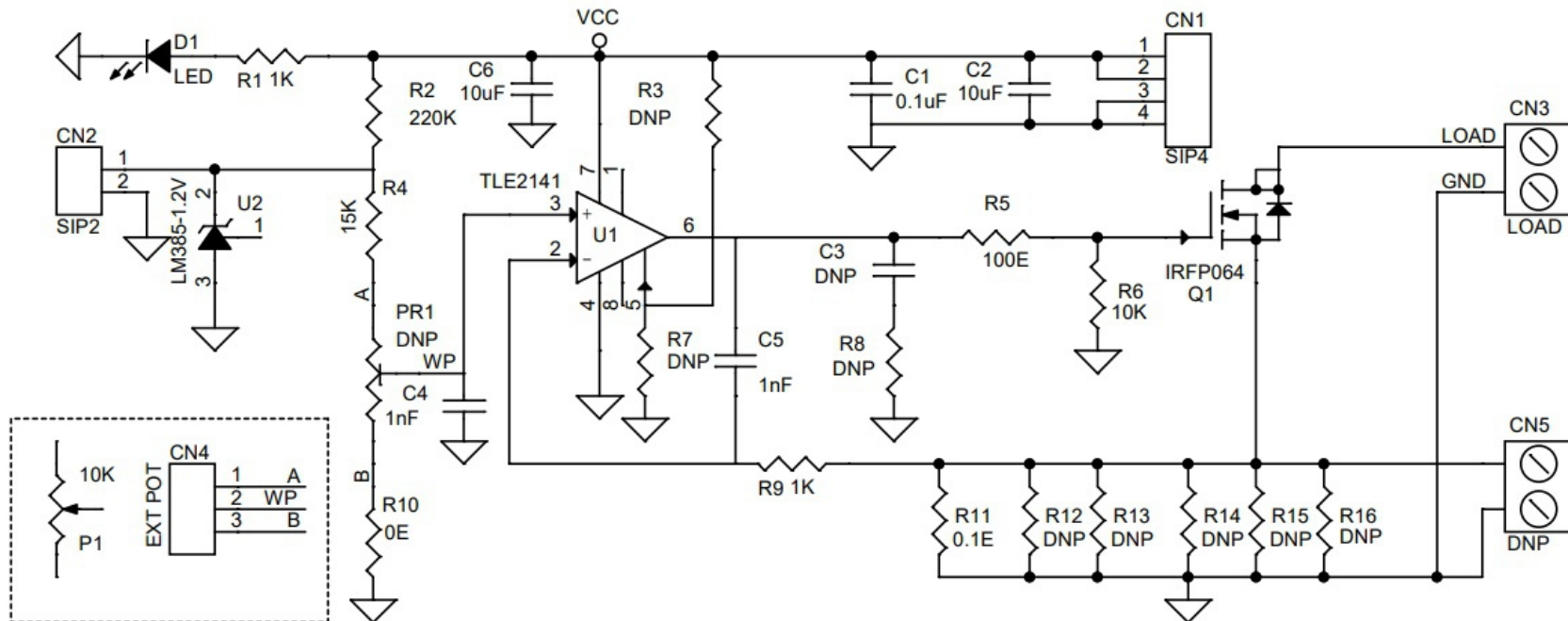
**Note:** It is advisable to use a large-size heat sink with a fan to cool the MOSFET.

## FEATURES

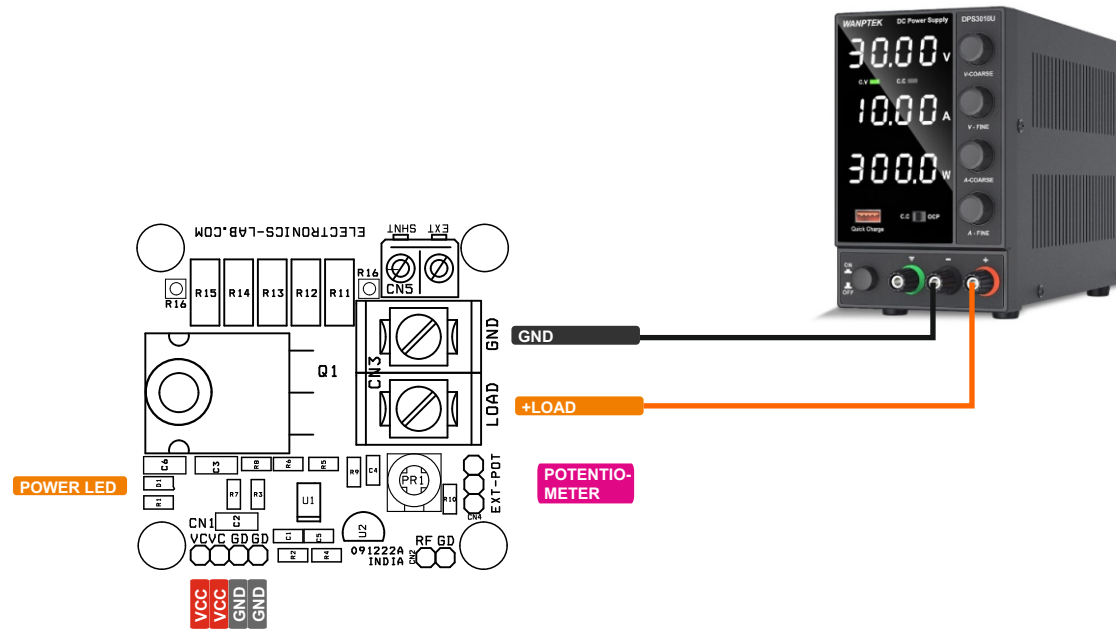
- \_ DC Power Supply 12V DC @ 20mA
- \_ Load Up to 2.5A, and Up-to 24V
- \_ On Board Power LED
- \_ 10 Turn Potentiometer for fine Load current Adjustment
- \_ Barrier Terminals for Load Connections
- \_ PCB Dimensions 49.53 X 46.36 MM
- \_ 4 X 3MM Mounting Holes



# Schematic



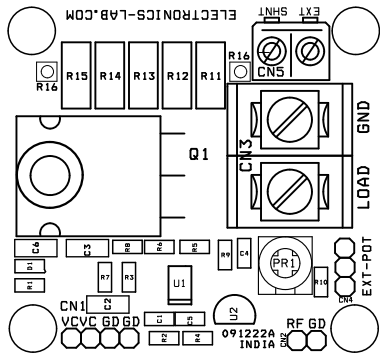
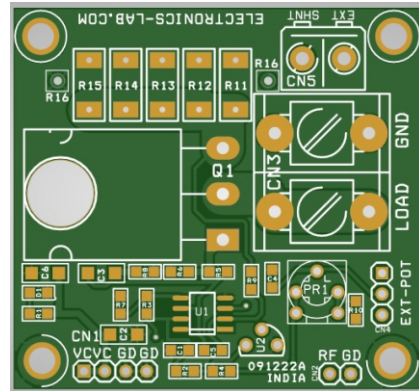
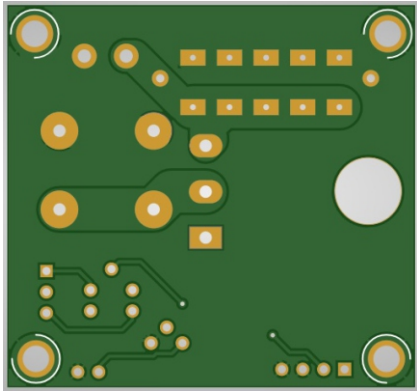
# Connections



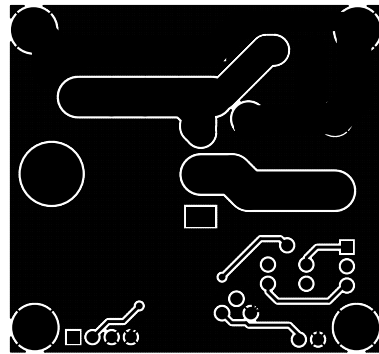
## CONNECTION

- Cn1: Pin 1,2 = VCC 12V DC, Pin 2,3 = GND
- CN2: Pin 1 = Optional/External Ref In, PIN 2 = GND
- CN3: Pin 1 = +Load, PIN 2 = GND
- CN4: 10 Turn Potentiometer (Don't Install PR1 IF P1 is Used)
- PR1: Optional Single Turn Trimmer Potentiometer.
- D1: Power LED

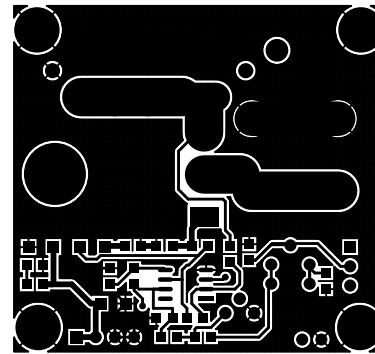
# PCB



SILK SCREEN TOP



BOTTOM LAYER



TOP LAYER

PCB DIMENSIONS 49.53 X 46.36 MM

# Parts List

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	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5315-ND
3	1	CN3	2 PIN BARRIER BLOCK PITCH 9.53MM	TE CONNECTIVITY	DIGIKEY	A98495-ND
4	1	CN4	3 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5316-ND
5	11	PR1,R3,C3,CN5,R7,R8,R12,R13,R14,R15,R16	DNP			
6	1	C1	0.1uF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
7	2	C2,C6	10uF/25V CERAMIC SMD SIZE 1206	YAGEO/MURATA	DIGIKEY	
8	2	C4,C5	1nF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
9	1	D1	LED RED SMD SIZE 0805	OSRAM	DIGIKEY	475-1278-1-ND
10	1	R6	10K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
11	1	Q1	IRFP064PBF OR IRPF250	VISHAY	DIGIKEY	IRFP064PBF-ND
12	2	R1,R9	1K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
13	1	R2	220K 1% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
14	1	R4	15K 1% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
15	1	R5	100E 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
16	1	R10	0E SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
17	1	R11	0.1E/2W 1% SMD SIZE 2512	YAGEO/MURATA	DIGIKEY	
18	1	U1	TLE2141 SOIC8	TI	DIGIKEY	296-10454-5-ND
19	1	U2	LM385-1.2V TO92	TI	DIGIKEY	296-50311-ND
20	1	P1	10K TEN TURN POT	BOURNS INC	DIGIKEY	3590P-2-103L-ND







Keep  
In touch..

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from ideas to **boards**

