1Amp Over Current Protection Load Switch

Over current limit load switch project provides full protection to device and loads from access load conditions. The default current limit is set to 1 Amp, however this load limit is adjustable from 0.4A to 2Amps with help of R4 ISET resistor. When over load condition occurs circuit responds to an overload condition that lasts longer than a fixed blanking period by turning off the load, followed by a retry after the auto-restart time, auto retry time is 127.5ms. Flag output is pulled up with R1 and provided active low output in fault condition, normally Flag output is high. Power good output is also pulled up and its open drain output to indicate that output voltage has reached 90% of input voltage. Input range of this circuit is 5V to 24V DC. load can be activated or deactivated with low-voltage logic compatible on Pin4, jumper J1 provided to activate or deactivate the output. Close the jumper J1 to activate the output load.

An under-voltage condition on the input voltage or junction temperature in excess of 140-degree centigrade overrides the ON control and turn OFF the switch. In addition, an over-current condition causes the switch to turn OFF. after expiration of the blanking time, the IC has an auto-restart feature that automatically turns the switch ON again after the auto-restart time of 127.5ms.

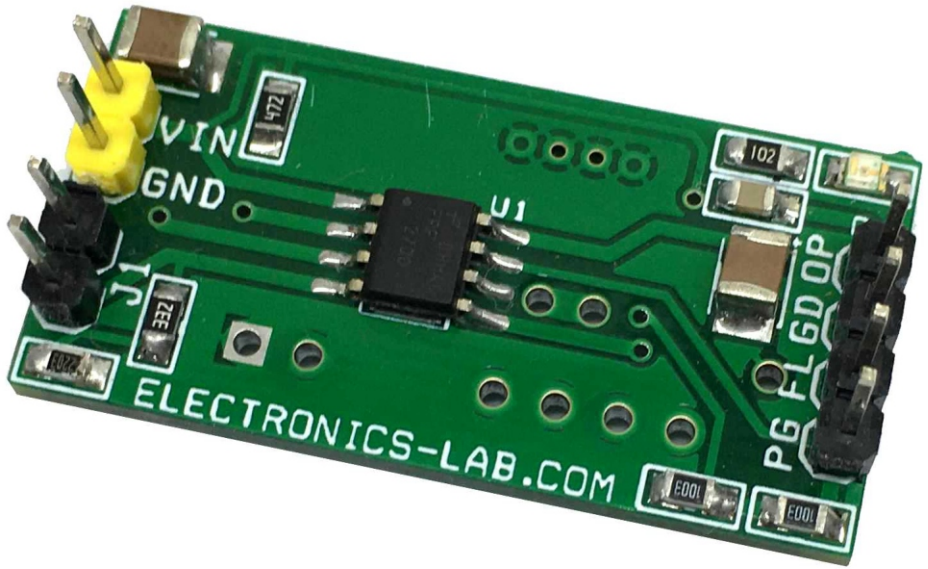
Its is important to choose appropriate value of resistor R5 and R6 which is dependent on operating power supply, choose R5 4K7 and R6 3K3 for supply input 5V to 12V, alter these resistors value R5 10K and R6 2K2 ohms for supply input 13V to 24V DC. Voltage ON pin 4 should not exceed 5.5V. Default current limit is set to 1Amps, refer (I-Set resistor R4) table for current limit set.

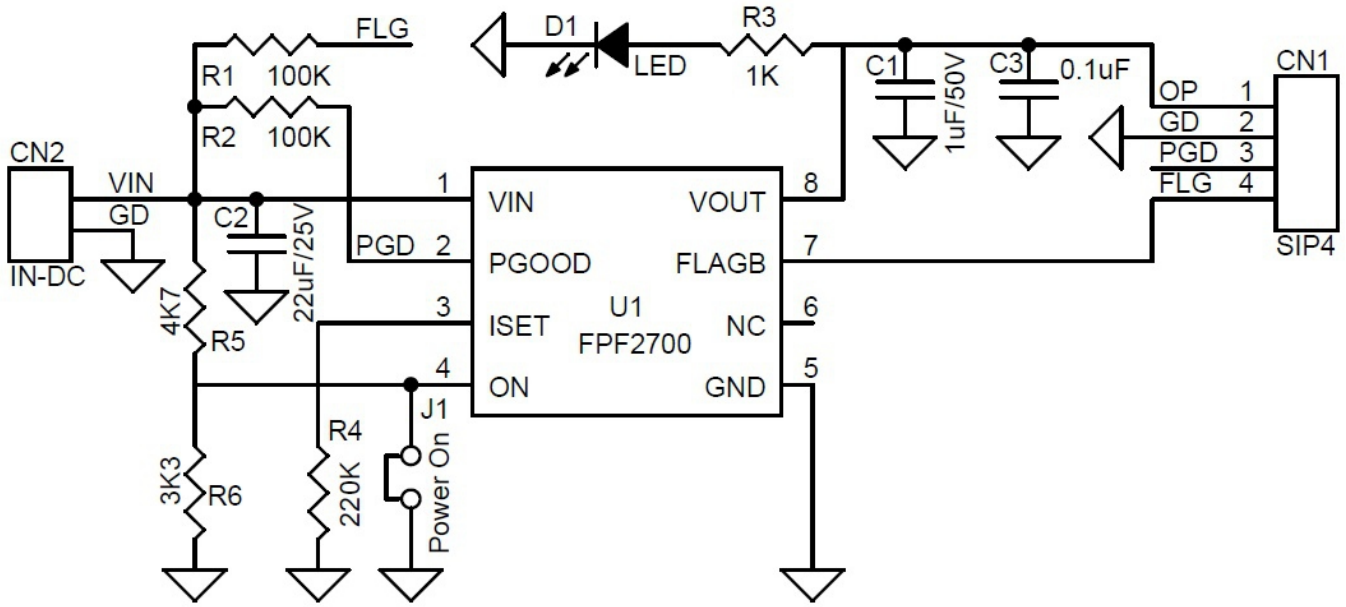
The IC2700 over current limit switch is designed to meet the power requirements of a variety of applications with wide input voltage range 2.8V to 36V and adjustable current-limit value. while providing optimum operation current for safe designed practices. The core of the switch is a typical 88mOhms (V=12V)

N channel MOSFET and controller capable of functioning over an input voltage range of 2.8V to 36V. FPF offers adjustable current limiting, under voltage lockout, power-good indicator, fault flag output, and thermal shutdown protection. In the event of an over-current condition, the load switch limits the loads to the current value. The current limit value of switch can be adjusted from 400mA to 2Amps trough the ISET pin. The enable pin is active LOW for and controls the state of the switch. Pulling the ON pin continuously to LOW holds the switch in on state. The switch moves in to OFF state when ON pin is pulled HIGH. The ON pin can be pulled HIGH to a maximum voltage 5.5V.

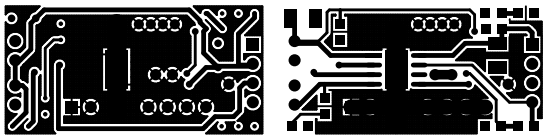
Features

Operating Supply 5V to 24V DC
Load Current Limit 1Amps (Adjustable Range 0,4A-2A)
On Board Power Indicator



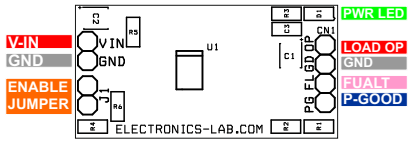


FOR SUPPLY INPUT 5V TO 12V R5=4K7,R6=3K3 OHMS
FOR SUPPLY INPUT 13V TO 24V R5=10K,R6=2K2 OHMS



BOTTOM LAYER TOP LAYER SILK SCREEN TOP

PCB DIMENSION 34.45MM X 17.46MM



BOM			
SR.	QNTY.	REF.	DESC.
1	1	CN1	4 PIN MALE HEADER 2.54MM
2	1	CN2	2 PIN MALE HEADER 2.54MM
3	1	C1	1uF/50V SMD 1210
4	1	C3	0.1uF/50V SMD 0805
5	1	D1	RED LED SMD 0805
6	1	J1	JUMPER
7	2	R1,R2	100K SMD 0805
8	1	R3	1K SMD 0805
9	1	R4	220K SMD 0805
10	1	R5	4K7 SMD 0805
12	1	R6	3K3 SMD 0805
13	1	U1	FPF2700 SO8
14	1	C2	22uF/25V SMD 1210