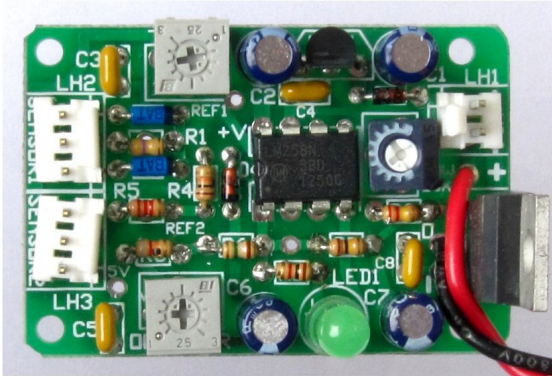




### Multi-Purpose LED Light Timer



The PEMLT is an analog timer module for use with proximity, PIR motion and IR sensors to control LED lights. The circuit uses a dual op-amp for triggering and timing and an N-CH MOSFET for LED ON/OFF control. It is suitable for automatic lighting control in staircases, entrances, hallways, closets, cabinets, etc. The adjustable, multi-function, comparator-based design allows it to be used for other applications or for integration into other products. The discrete components design provides long operational life, good reliability and repairability.

#### Operation:

See schematic for more information. On sensor input start-up (high signal), both TIMER1 and TIMER2 are high (Q1=high). R1 and C3 form the RC discharge timer after the sensor output signal goes low (LH2/LH3). It is usually ~5V, but could be lower depending on the sensor output. VR1 sets the reference voltage for the TIMER1 op-amp comparator to stop (low output) when the R1C3 voltage is below REF1. Then, TIMER2 (ON-TIME, VR2/C6) discharge timer starts (op-amp still high output until V<V at REF2). With TIMER1 off and TIMER2 on, VR3 acts as a voltage divider to reduce Q1 gate voltage to limit the brightness of the output (LED). Full off output is when TIMER1 and TIMER2 are low.

Features:	
- Simple comparator-based circuit	- Easy-to-use integrated design
- Adjustable dual timer delay	- Small and economical
- Use standard dual-op amp	- Multi-function for DIY projects
- N-CH MOSFET LED switch	- LED trigger indicator
- Various sensor input signals	- Discrete component design

#### Technical Specifications:

Operating voltage: 12V nominal.  
Dimension: 1.77"x1.2" (45x30.5mm).  
4x 95mil holes at 1.0x1.5".  
PCB: 1/16" FR4, ROHS, HASL, double-sided, plated holes.  
Input signal range (nominal): 5V positive pulse, 0.5-5.0V.  
Reference regulator voltage: 5.0V (78L05).  
Operating temperature: -15°C to +85°C  
Input current into signal pin: <5mA, 0.1s pulse.  
Maximum current (full ON): 5A, N-CH MOSFET limited.  
Maximum current (LOW LUX): 2A, heatsink size limited.  
Minimum TIMER1 delay time: 20s, shorter/longer possible.  
Minimum TIMER2 delay time: 10s, shorter/longer possible.  
Sensor input: Sharp proximity GP2Y0A, PIR motion sensor, Magnetic/mechanical switch.

(Do not mount sensors near heat sources or in direct sunlight)

