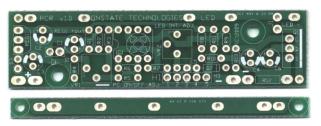
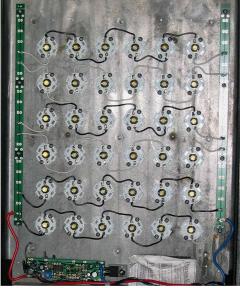


## PCR LED Controller



#### Features:

- Compact size
- through-hole, double-sided PCB
- thick copper traces and pads (silver plating)
- High performance design for LED applications
- Bus trace lines for LED power connections.
- Mounting holes
- Multi-purpose, integrated design



PCR module connected to LED array. Auto on/off and LED current regulator.

## **Technical Specifications:**

| Printed circuit board: |                  |
|------------------------|------------------|
| Thickness:             | 1/16"            |
| Material:              | FR4 glass fibre  |
| Plating:               | 2 oz copper      |
| Layers:                | Double-sided     |
| Finish:                | Silver-plating   |
| Soldermask:            | Green both sides |
| Routing:               | V-Scored         |

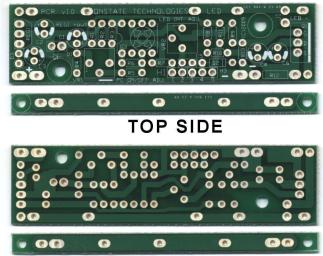
The PCR is a high-quality, multi-purpose LED controller with photocell and current regulator PCB for LED lighting applications. It has a photocell and a linear LED current regulator circuit to automatically control a LED array for day/night operation. The PCB is a double-sided and through-hole design using thick copper pads for high reliability and performance.

## **Benefits:**

- Reduce design and assembling time.
- Extends LED life.

#### Applications:

- Landscape and area lighting
- LED controller
- Replace old photocell/LED controllers.
- Configurable for external LED/electronic uses



# BOTTOM SIDE

Top and bottom sides of PCR PCB. Detachable bus bar for LED connections.

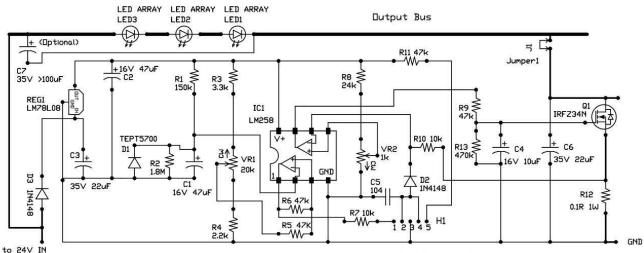
Dimension:

Weight: Soldering: Mounting hole: Compliance: PCB- 3.8"x0.82" Bus bar-3.8"x0.22" 6 grams (0.21 Oz) Through-hole plated 2x0.15", 2x 0.1" holes. ROHS, lead-free power



Turn Night Into Light <sup>™</sup>

### **PCR Design**



+12 to 24V IN

H1: Output control.

VR1: Photocell on/off control. 6.95-0.81V. VR2: LED current control. All resistors are 1/8W at 0.2" spacing. All capacitors are 0.1" spacing. H1: Pins ½ for AUTO mode. Pins ¾ for LED ON. Pins 4/5 for LED OFF.

| Line | Part       | Qty. | Description   | Manufacturer               | Man. Part Number |
|------|------------|------|---|----------------------------|------------------|
| 1    | R1         | 1    | Resistor, 150k Ohms, 1/8W 5% carbon film                  | Yageo                      | CFR-12JB-150K    |
| 2    | R2         | 1    | Resistor, 1.8M, 1/8W 5% carbon film                       | Yageo                      | CFR-12JB-1M8     |
| 3    | R3         | 1    | Resistor, 3.3k, 1/8W 5% carbon film                       | Yageo                      | CFR-12JB-3K3     |
| 4    | R4         | 1    | Resistor, 2.2k, 1/8W 5% carbon film                       | Yageo                      | CFR-12JB-2K2     |
| 4    | R5,R6,R9   | 3    | Resistor, 47k, 1/8W 5% carbon film                        | Yageo                      | CFR-12JB-47K     |
| 5    | R7,R10,R11 | 3    | Resistor, 10k, 1/8W 5% carbon film                        | Yageo                      | CFR-12JB-10K     |
| 5    | R8         | 1    | Resistor, 24k, 1/8W 5% carbon film                        | Yageo                      | CFR-12JB-24K     |
| 6    | R12        | 1    | Resistor, 0.10 Ohm, 1W 1% wirewound, mini                 | Ohmite                     | WHBR10FET        |
| 7    | R13        | 1    | Resistor, 470k, 1/8W 5% carbon film                       | Yageo                      | CFR-12JB-470K    |
| 8    | C1,C3,C4   | 3    | Capacitor, 16V 47uF, Ø6.3x7Lx2P mm, electrolytic          | Panasonic                  | ECE-A1CKG470     |
| 9    | C2,C4,C6   | 3    | Capacitor, 35V 22uF, Ø6.3x7Lx2P mm, electrolytic          | Panasonic                  | ECE-A1VKG220     |
| 10   | C5         | 1    | Capacitor, 50V 0.1uF (104), 0.1" ceramic X7R 10%          | Vishay/BC<br>Components    | K104K15X7RF5TL2  |
| 11   | D1         | 1    | Transistor, TEPT5700, photo 570nm light sensor, T 1-3/4   | Vishay                     | TEPT5700         |
| 12   | D2, D3     | 2    | Diode, 1N4148T, Si 100V 0.2A, 500mW DO-35                 | Fairchild                  | 1N4148           |
| 13   | REG1       | 1    | Regulator, LM78L08, 8V 100mA, TO-92                       | On Semi.                   | MC78L08ABPG      |
| 14   | IC1        | 1    | IC, LM258, dual op-amp, 8-pin DIP                         | On Semi.                   | LM258N           |
| 15   | VR1        | 1    | Resistor, 20k, 1/4" cer pot, top adj.                     | Bourns                     | 3362R-1-203LF    |
| 16   | VR2        | 1    | Resistor, 1k, 1/4" cer pot, top adj.                      | Bourns                     | 3362R-1-102LF    |
| 17   | Q1         | 1    | MOSFET, IRFZ44Z N-HEXFET, 55V 51A 0.0139 Ohm,<br>TO-220AB | International<br>Rectifier | IRFZ44ZPBF       |
| 18   | J1         | 1    | 22 AWG bare jumper  |                            |                  |
| 19   | J2         | 1    | 22 AWG bare jumper, 2-pin jumper header                   |                            |                  |
| 20   |            |      | H1: pin #1 and pin #2.                                    |                            |                  |
|      | H1         | 1    | Optional, connector, 1X5 header                           |                            |                  |

All parts are available from Digi-key (www.digi-key.com).