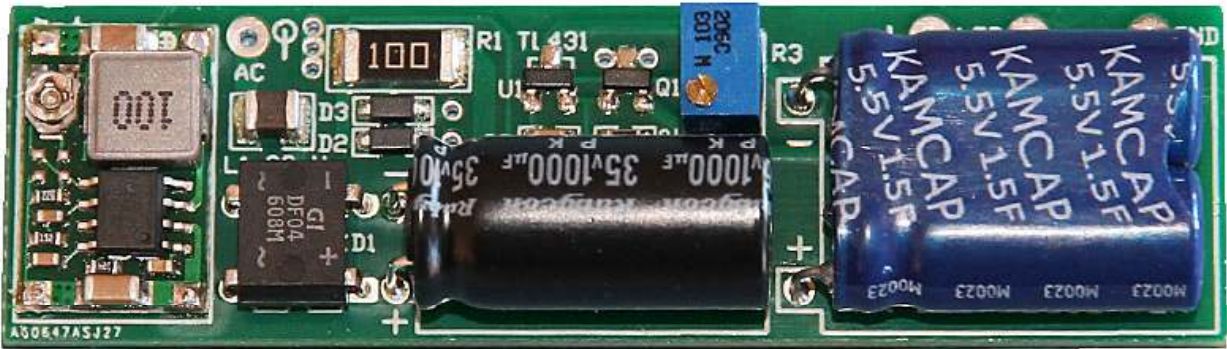


LED Light Strip Voltage Regulator



The LED Light Strip Voltage Regulator will maintain constant brightness of a 5V LED light strip installed in a model railroad passenger car. It uses a super capacitor to provide up to 10 seconds of constant power even if track power is interrupted for block control. It eliminates any blinking as cars traverse switches or have intermittent pick-up contact.

A switching pre-regulator minimizes dissipation as track voltage varies. Once the super capacitor is charged, the LED Regulator consumes less than 1/4 watt itself. Total consumption including the LED light strip is essentially constant over the full range of track voltage.

Dimensions: 2 3/4" long, 3/4" wide, 1/2" high. Weight <0.5 ounce

Operation:

Because a LED light strip is excessively bright for illuminating the interior of a model railroad passenger car at 5V, The output can be adjusted over the range from 3V to 4V with the blue trimpot. Clockwise rotation increases the voltage.

I found that 3.2V to 3.4V works best with the warm white LED light strips installed in my own O Gauge passenger cars.

The length of time the regulated voltage is maintained will decrease as the output voltage is increased. The LED light strip will gradually dim over several minutes as the super capacitor discharges.

When track power is first applied, the regulator can pull 1/4 amp to charge the super capacitor. The charging current will gradually decrease as the capacitor becomes charged.

The tiny trimpot on the pre-regulator has been set to 5.0V, and should not be changed. Increasing it will damage the super capacitor.

Recommended track voltage range is 6V to 18V, with 20V absolute maximum. LED load 100mA maximum. The LED Regulator should not be used when the track voltage is set higher than 18V.