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CAT4104AEVB

CAT4104 LED Driver Evaluation Board User's Manual



ON Semiconductor®

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EVAL BOARD USER'S MANUAL

Introduction

This document describes the CAT4104AEVB evaluation board for the ON Semiconductor CAT4104 quad channel constant current LED driver. The functionality and major parameters of the CAT4104 can be evaluated with the CAT4104AEVB board.

The CAT4104 is a LED driver with four matched current sinks capable of driving up to 175 mA per channel. All current sinks are programmed by a single resistor from the RSET pin to GND. Enable and dimming control is available via the EN/PWM pin. Additional details and electrical characteristics can be found in the CAT4104 data sheet.

Board Hardware

The evaluation board contains one CAT4104 in a typical application circuit. Four test points labeled T4 through T7 are available to connect the cathode side of an LED string to the CAT4104.

The VIN test point (T1) is connected to the VIN supply of the CAT4104. The voltage between test points VIN and GND (T2) should not exceed 6.0 V.

The EN/PWM test point is the enable and PWM input for the CAT4104. The control signal should be connected between test points EN/PWM and GND.

Trimmer potentiometer R2 can be adjusted to change the LED current. The RSET pin of the CAT4104 is a fixed 1.2 V reference and the LED current is set by changing the current through the RSET resistor (R1 + R2). The CAT4104 has a typical dropout voltage of 400 mV for 175 mA LED current.

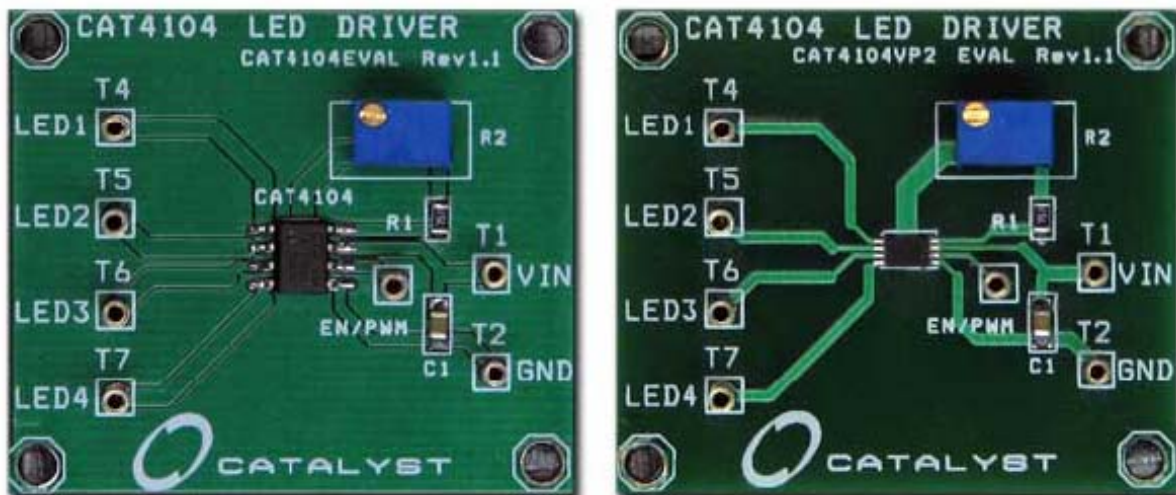


Figure 1. CAT4104AEVB Board (SOIC Package) and CAT4104VP2 Board (TDFN Package)

CAT4104AEVB

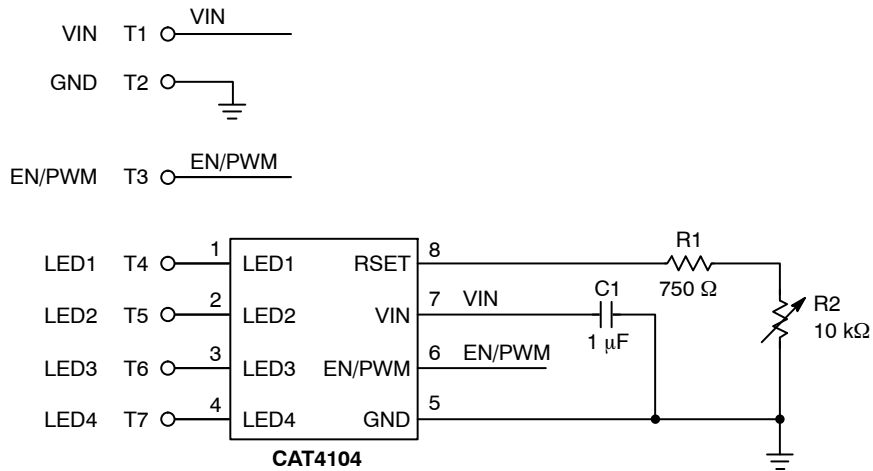



Figure 2. CAT4104AEVB Board Schematic

Table 1. CAT4104AEVB BOARD LIST OF COMPONENTS

| Name | Manufacturer | Description | Part Number | Units |
|------|------------------|---|------------------------|-------|
| U1 | ON Semiconductor | Quad Channel LED Driver in SOIC-8 or TDFN-8 package | CAT4104V or CAT4104VP2 | 1 |
| C1 | Taiyo Yuden | Ceramic Capacitor 1 µF/10 V, 10%, X7R, Size 0805 | LMK212B7105KD-T | 1 |
| R1 | Yageo | SMT Resistor 1/8 W, 750 Ω, Size 0805 | RC0805FR-07560RL | 1 |
| R2 | Vishay | Trimmer Potentiometer, 10 kΩ | T63YB103K | 1 |

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