

CAT4103AGEVB

CAT4103 LED Driver Evaluation Board User's Manual



ON Semiconductor®

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EVAL BOARD USER'S MANUAL

Introduction

This document describes the CAT4103AGEVB evaluation board for the ON Semiconductor CAT4103 three channel RGB LED driver. The functionality and major parameters of the CAT4103 can be evaluated with the CAT4103AGEVB board.

The CAT4103 is a three channel constant-current LED driver for RGB LEDs. Individual current settings are set by connecting a single resistor from each RSET pin to GND. A four-wire serial interface and output data pins allow for programming one or multiple CAT4103 devices cascaded together. Additional details and electrical characteristics can be found in the CAT4103 data sheet.



Figure 1. CAT4103AGEVB Board

Board Hardware

The evaluation board contains one CAT4103 in a typical application circuit driving a RGB LED. The six pin header connector (K1) and receptacle (K2) allows for easy cascading of multiple boards. Simply connect K1 from one board to K2 of another.

Jumper J1 sets the VDD supply of the CAT4103. In the right position (pin 2 and pin 3 shunt), VDD is connected to VBUS (K1 pin 1). To power VDD from an external source place J1 in the left position (pin 1 and pin 2 shunt) and connect the external source between test points T1 and T2.

Jumper J2 sets the power supply for the onboard RGB LED. In the left position (pin 1 and pin 2 shunt), the LED anodes are connected to VBUS. To power the RGB LED from an external source place J2 in the right position (pin 2 and pin 3 shunt) and connect the external source between test points T3 and T4.

Jumpers J3 to J5 connect the onboard RGB LED cathodes to the CAT4103 while in the left position (pin 1 and pin 2 shunt). To connect external LEDs, place the desired jumper in the right position (pin 2 and pin 3 shunt) and connect the LED cathode to the appropriate test point (T5, T6, or T7).

Trimmer potentiometers R1, R2, R3 control the current setting for each LED channel respectively LED1, LED2, LED3. The channel current can be adjusted from 10 mA to 150 mA.

CAT4103AGEVB

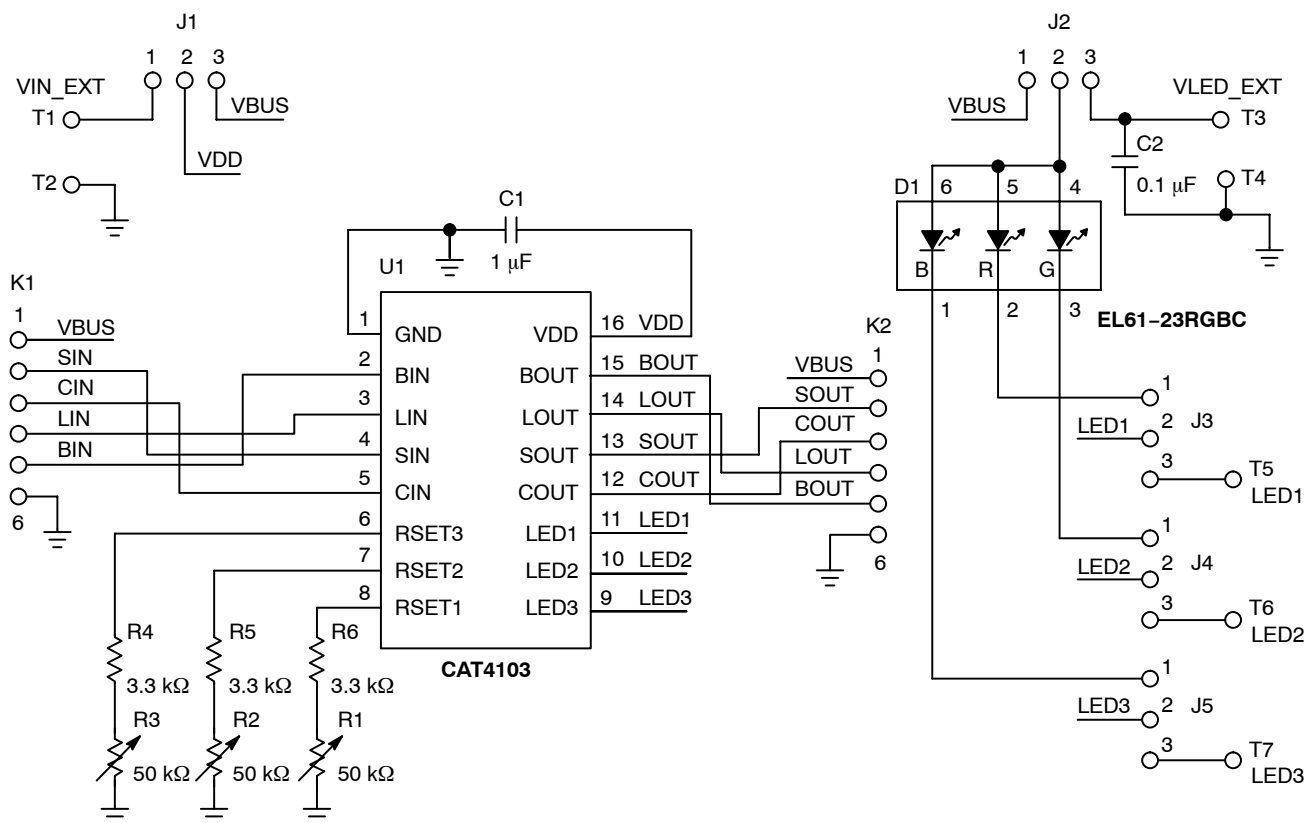



Figure 2. CAT4103AGEVB Board Schematic

Table 1. CAT4103AGEVB BOARD LIST OF COMPONENTS

Name	Manufacturer	Description	Part Number	Units
U1	ON Semiconductor	3-Channel RGB LED Driver	CAT4103W	1
C1	AVX	Ceramic Capacitor 1 µF/10 V, X5R, Size 0603	0603ZD105KAT2A	1
C2	AVX	Ceramic Capacitor 0.1 µF/25 V, X5R, Size 0603	06033D104KAT2A	1
R1 to R3	Murata	Trimmer Potentiometer 50 kΩ	PV36Y503C01B00	3
R4 to R6	Yageo	SMT Resistor 1/10 W, 3.30 kΩ, 1%, 0603	RC0603FR-073K3L	3
D1	Everlight	RGB LED, SMD	EL61-23RGBC	1
J1 to J5	Tyco	3 Pin Header Connector 0.1" pitch	640452-3	5
K1	Tyco	6 Pin Header Connector 0.1" pitch	640453-6	1
K2	Tyco	6 Pin Header Receptacle 0.1" pitch	535676-5	1
T1 to T7		Test Points		7

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