

CAN(FD) Transceiver Evaluation Board User's Manual

NCV7344A3V1GEVB

Introduction

This document describes the CAN(FD) evaluation board for the onsemi family of CAN transceivers in SOIC8 package. The board provides basic connections for wide range of transceivers.

Evaluation Board Features

- One-Row Pin Header, Providing Access to All the Device Pins, Enables Easy Insertion of the Evaluation Board into a More Complex Application Setup
- On-Board 5 V LDO for VCC Supply (Can Be Disconnected)
- On-Board 3.3 V LDO for VIO Supply (Can Be Disconnected)
- Standard CAN Termination
- Position for Optional Common Mode Choke
- Position for Optional ESD Protection

List of Supported CAN Transceivers

- NCV7340
- NCV7342
- NCV7344
- NCV7349
- NCV7351

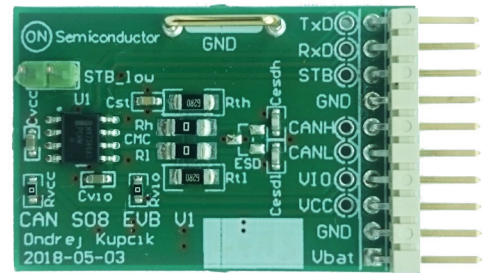


Figure 1. CAN(FD) Evaluation Board

NCV7344A3V1GEVB

SCHEMATIC

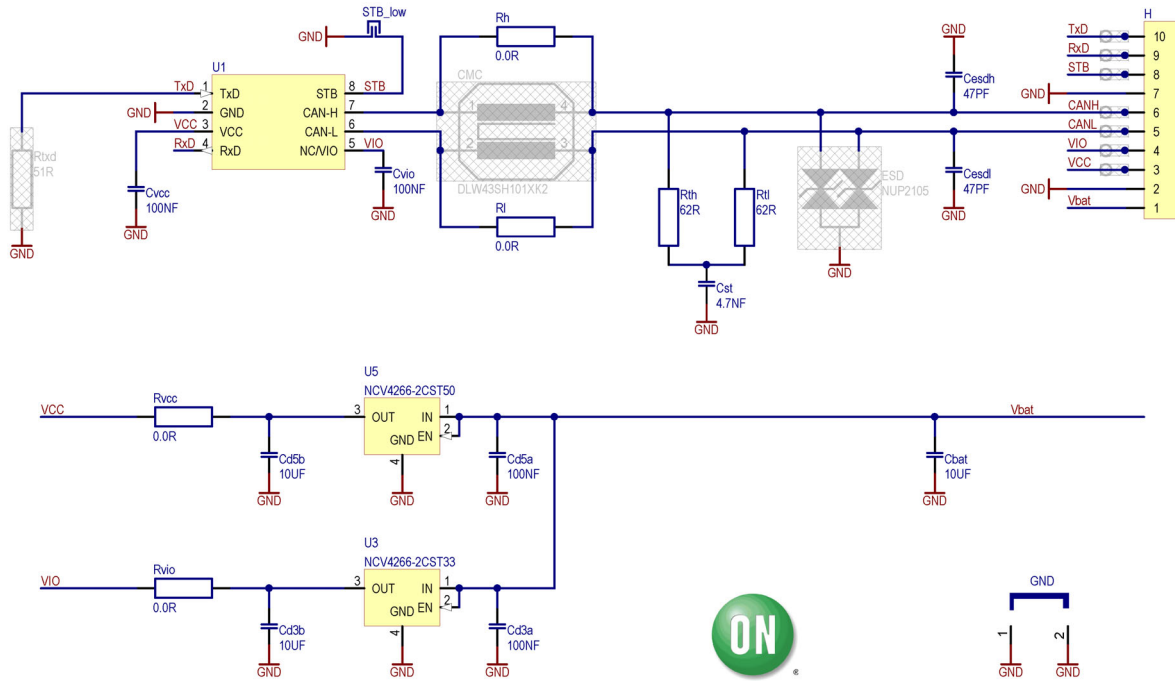


Figure 2. CAN(FD) Transceiver Evaluation Board Schematic

ABSOLUTE MAXIMUM RATINGS

Rating	Pins	Min.	Max.	Unit
Battery Supply Voltage	Vbat	-40	40	V
Transceiver Supply Voltage	VCC, VIO (Rvcc and Rvio Not Used)	-0.3	6	V
Digital Inputs / Outputs Voltage	TxD, RxD, STB	-0.3	6	V
CAN Bus Line Voltage	CANH, CANL · NCV7340 / 42 / 49 / 51 · NCV7344	-50 -42	50 42	V
CAN Transceiver Junction Temperature		-40	+170	°C
Board Temperature		-40	+125	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

RECOMMENDED BOARD OPERATING CONDITIONS

Rating	Pins	Min.	Max.	Unit
Battery Supply Voltage	Vbat	6	28	V
Transceiver Supply Voltage	VCC (Rvcc Not Used)	4.75	5.25	V
Transceiver Supply Voltage	VIO (Rvio Not Used)	2.8	5.5	V
Digital Inputs / Outputs Voltage	TxD, RxD, STB	0	VIO	V
CAN Bus Line Voltage	CANH, CANL · NCV7340 / 42 / 49 / 51 · NCV7344	-50 -42	-50 -42	V
CAN Transceiver Junction Temperature		-40	+170	°C
Board Temperature		-40	+125	°C

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Operational Guidelines

CAN EVB board allows easy evaluation of CAN transceivers in SOIC8 packages. It provides connection to all the device's pins as well as positions for all the necessary CAN bus external components.

Configurations and assembly options are listed in Table 1. For more information please check datasheet of the assembled CAN transceiver.

Table 1. ASSEMBLY OPTIONS AND CONFIGURATIONS

Component	Default	Function
Rth, Rtl, Cst	2x 62 R, 4.7 nF	CAN bus termination
ESD	none	Position for optional NUP2105 ESD protection
Cesdh, Cesdl	47 pF	ESD capacitors. Should be selected per application needs and ESD used
Rvcc, Rvuo	0 R	Connection of on-board LDOs to VCC and VIO. If removed, external supplies can be used.
STB_low	Open	STB pin connection Open = STB weak internal pull-up = Standby mode Close = STB shorted to GND = Normal mode

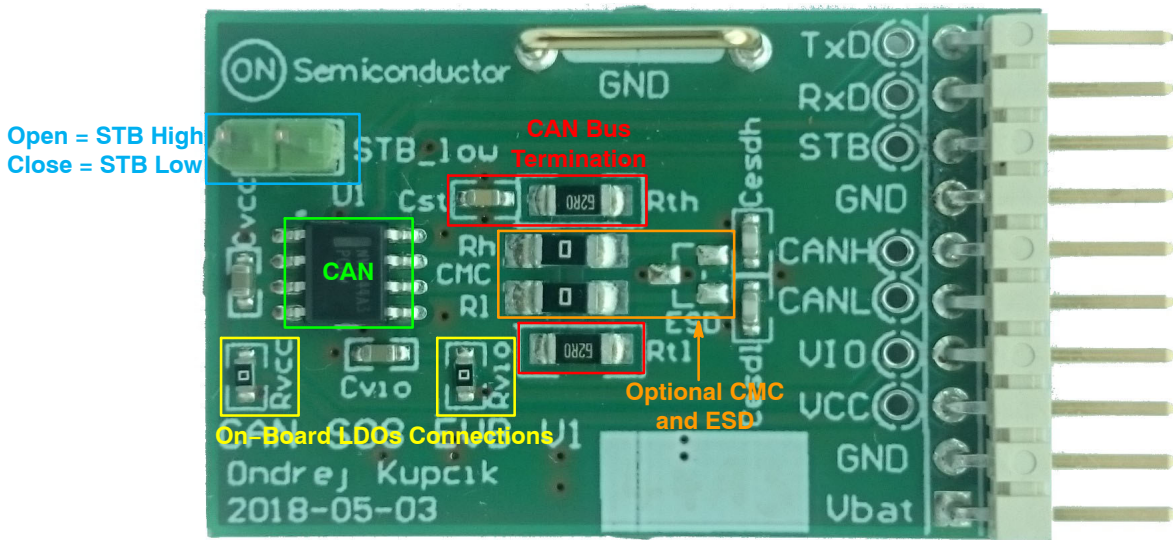


Figure 3. CAN(FD) Evaluation Board Picture, Top Side

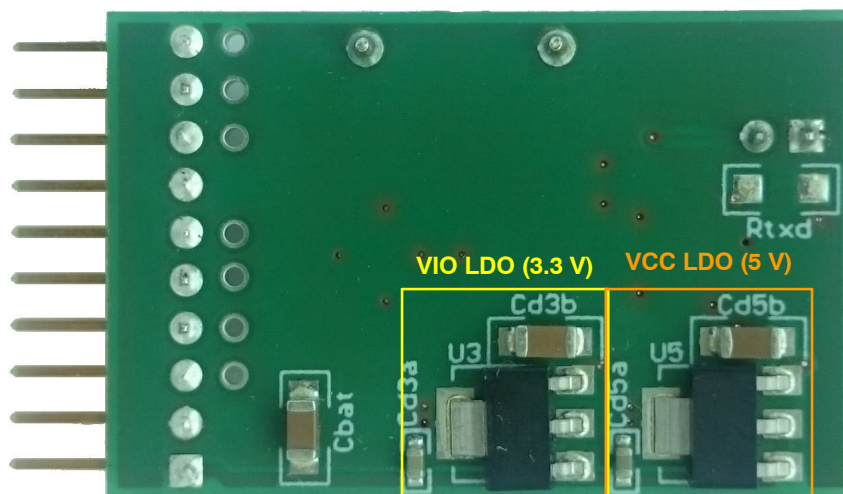


Figure 4. CAN(FD) Evaluation Board Picture, Bottom Side

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PCB DRAWINGS

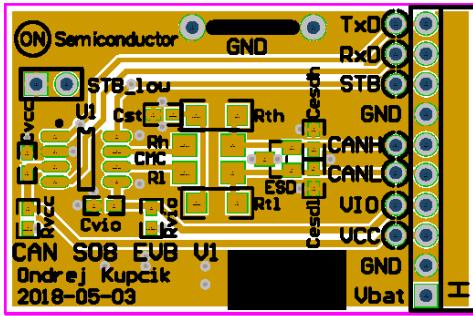


Figure 5. CAN EVB PCB Top Drawing

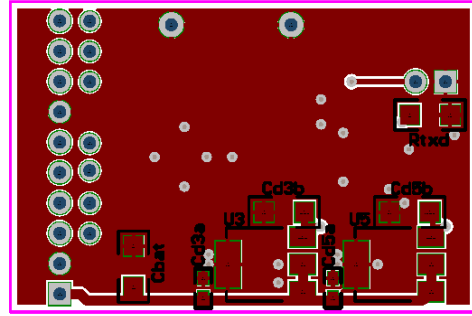


Figure 6. CAN EVB PCB Bottom Drawing (Bottom View)

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