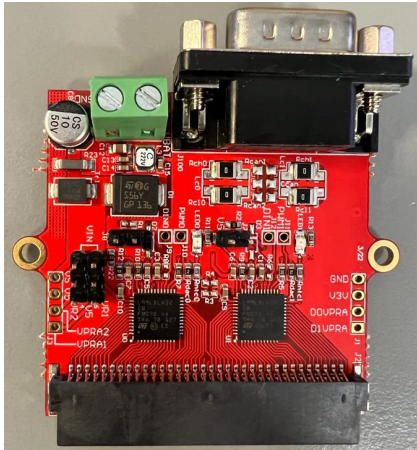


L99LDLH32 evaluation board



Features

Channel	V _{CC}	I _{OUT}
0-63	5.5 to 40 V	1 to 15 mA

- **General**
 - Application board with two L99LDLH32
 - Designated to drive generic OLED panel
 - CAN FD light compatible serial interface, protocol handler, draft specification proposal (DSP) available from CAN in automation (CiA)
 - High precision oscillator integrated, no external quartz required
 - QFN48L 7x7 with exposed pad
 - Time out watchdog with limp-home
 - Low standby current
 - Stand-alone/fail-safe and bus mode operation
 - Direct drive (one direct input), for one function group supporting ASIL requirements
 - Widest configurability by embedded non-volatile and volatile memories
 - Operating supply voltage range from 5.5 V to 40 V
 - Operating temperature range from -40 °C to 150 °C
- **Linear regulators section**
 - 32 constant current output channels, high-side configuration
 - Output current from 1 mA to 15 mA, parallelizable outputs
 - Output voltage up to 35 V
 - Feedback voltage to external pre-regulator, to optimize the regulation voltage minimizing overall power dissipation
 - Current setting per channel by 8-bit DAC
 - Analog dimming, 8-bit PWM channel individual exponential brightness control and 8-bit global PWM dimming
 - Programmable PWM frequency
 - Slow turn on/off time, gradual outputs delay and dithered clock, for better EMC performances
- **Protection and diagnostic**
 - Integrated 8-bit ADC, for full and flexible diagnostic
 - One dedicated line for fault bus
 - Temperature warning (one threshold)
 - Overtemperature shutdown
 - Short circuit and open load detection and protection
 - Automatic LED current derating, through external NTC measurement and device junction temperature (T_J)

Product status link

[EV-L99LDLH32GEN](#)

Product summary

Order code	EV-L99LDLH32GEN
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Applications

- Automotive exterior OLED rear lighting applications

Description

The EV-L99LDLH32GEN board provides an easy way to connect L99LDLH32 into the existing system. To connect a lighting load, it is necessary to design a specific adapter board according to the chosen OLED panel.

1 Overview

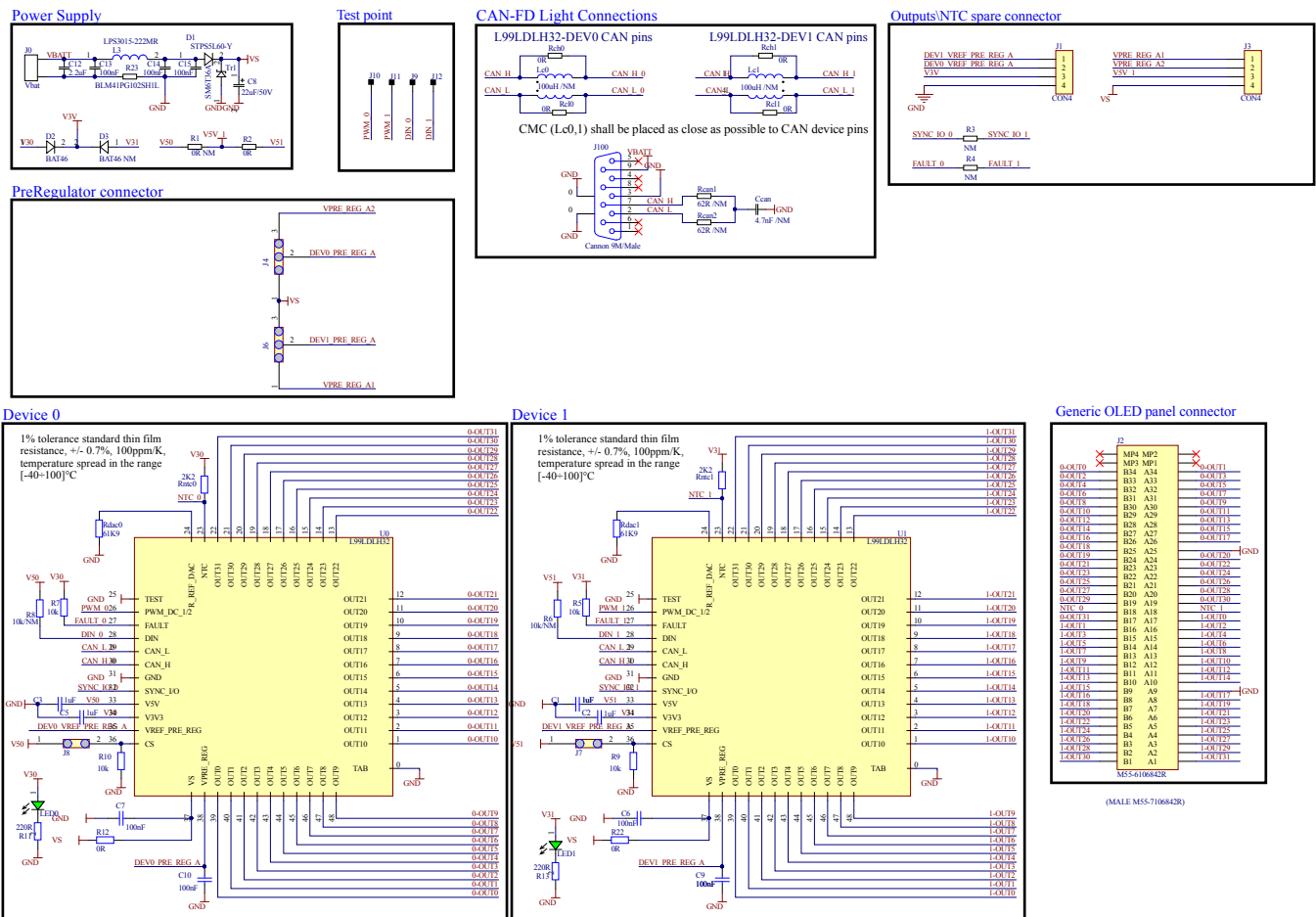
The EV-L99LDLH32GEN comes pre-assembled with 2x L99LDLH32. On board, the minimum set of electrical components (as for device datasheet recommendation) is enabling the user to connect the load, the power supply and the microcontroller.

The L99LDLH32 is a monolithic 32-channel linear current regulator specifically designed for automotive exterior OLED rear lighting applications. Thanks to the high side configuration of the output channels, the L99LDLH32 is suitable to drive the OLED panel with the common cathode. It guarantees up to 35 V output driving capability - to cover the OLED forward voltage wide spread - and features 32 regulated current sources able to provide from 1 mA up to 15 mA individually programmable current to drive each pixel of the OLED panel independently.

The L99LDLH32 integrates a robust purely automotive CAN FD light compatible communication interface, which allows a high rate data transmission (up to 1 Mbit/s) and uses the CAN FD structure for long frames. Besides the CAN FD light compatible physical layer, the device also integrates the protocol handler, so no additional external devices are needed to facilitate communication with the commander ECU. The L99LDLH32 can operate in bus mode using the CAN FD light compatible interface or in stand-alone/fail-safe mode using internal few time programmable (FTP) memory registers.

Below are shown the board schematics.

Figure 1. Board schematics



2 Board connections

The Figure 2 shows the placement of the connectors to be used for supplying the evaluation board, connecting the load, and controlling the functionality and diagnostic of the device.

Figure 2. Evaluation board connections

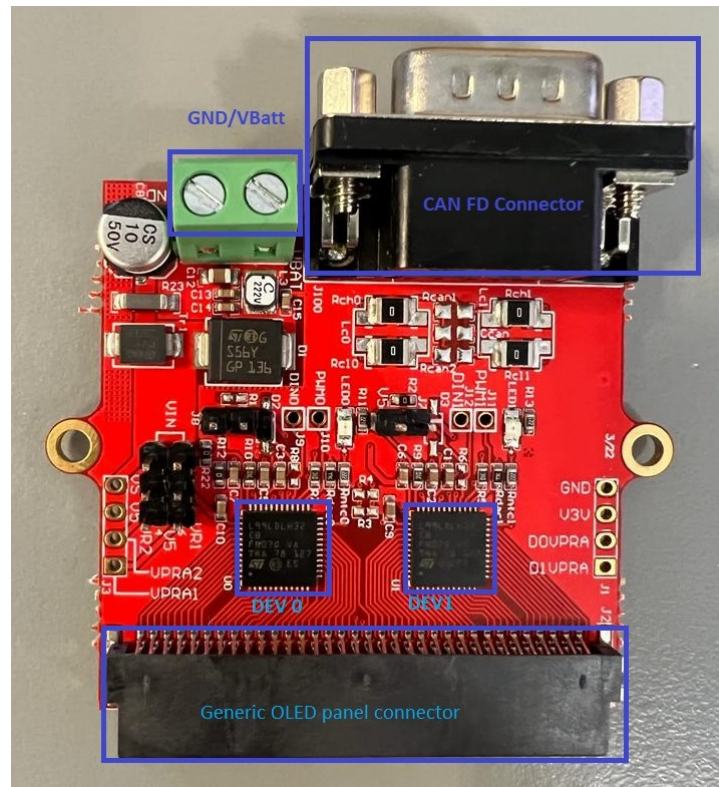


Figure 3. CAN FD connector

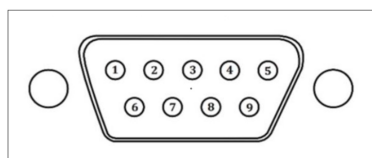


Table 1. CAN FD connector details

Pin number	Signal
1	N.C.
2	CAN_L
3	GND
4	N.C.
5	N.C.
6	N.C.
7	CAN_H
8	N.C.
9	VBATT

Figure 4. OLED generic connector



Table 2. OLED generic connector details

Pin number	Signal
A1	1-OUT31
A2	1-OUT29
A3	1-OUT27
A4	1-OUT25
A5	1-OUT23
A6	1-OUT21
A7	1-OUT19
A8	1-OUT17
A9	GND
A10	1-OUT14
A11	1-OUT12
A12	1-OUT10
A13	1-OUT8
A14	1-OUT6
A15	1-OUT4
A16	1-OUT2
A17	1-OUT0
B1	1-OUT30
B2	1-OUT28
B3	1-OUT26
B4	1-OUT24
B5	1-OUT22
B6	1-OUT20
B7	1-OUT18
B8	1-OUT16
B9	1-OUT15
B10	1-OUT13
B11	1-OUT11
B12	1-OUT9
B13	1-OUT7
B14	1-OUT5
B15	1-OUT3
B16	1-OUT1

Pin number	Signal
B17	0-OUT31
A18	NTC1
A19	0-OUT30
A20	0-OUT28
A21	0-OUT26
A22	0-OUT24
A23	0-OUT22
A24	0-OUT20
A25	GND
A26	0-OUT17
A27	0-OUT15
A28	0-OUT13
A29	0-OUT11
A30	0-OUT9
A31	0-OUT7
A32	0-OUT5
A33	0-OUT3
A34	0-OUT1
B18	NTC0
B19	0-OUT29
B20	0-OUT27
B21	0-OUT25
B22	0-OUT23
B23	0-OUT21
B24	0-OUT19
B25	0-OUT18
B26	0-OUT16
B27	0-OUT14
B28	0-OUT12
B29	0-OUT10
B30	0-OUT8
B31	0-OUT6
B32	0-OUT4
B33	0-OUT2
B34	0-OUT0

Revision history

Table 3. Document revision history

Date	Revision	Changes
09-Aug-2022	1	Initial release.
30-Mar-2023	2	Updated Description . Added Section 1 Overview and Section 2 Board connections .

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