

MCD multichannel driver

Application

MCD driver is a utility board that unites several functions:

- power supply of LED matrices comprising of up to 8 LEDs;
- synchronisation of LED signals with a one photodiode;
- photodiode signal processing.

Features

- LED driving at pulse mode (mode that provides maximum peak optical power).
- Built-in 8-channel synchronous detector, which provides synchronisation with a one photodiode.
- Two MCD configurations are available:
 - with a built-in preamplifier circuitry;
 - without preamplifier circuitry for operation with an external photodiode preamplifier.
- Parameters adjusted by manufacturer for every MCD for most optimal performance:
 - current amplitudes;
 - for modification with a built-in preamplifier circuitry - preamplifier is adjusted for the exact photodiode model.

Compatibility table

MCD driver is oriented for operation with multielement LED matrices comprised of up to 8 independently powered LED chips or with up to 8 standard one-element LEDs. Compatibility with different LED matrices (or set of standard one-element LEDs) used in a pair with LMSNT photodiodes can be defined using the following table.

LED/Photodiode	Lms24PD-03 Lms25PD-05 Lms25PD-10	Lms24PD-03-R(W)-PA Lms25PD-05-R(W)-PA Lms25PD-10-R(W)-PA	Lms36PD-03 Lms36PD-05 Lms36PD-03-CG Lms36PD-05-CG	Lms36PD-03-R(W)-PA Lms36PD-05-R(W)-PA Lms36PD-03-CG-R-PA Lms36PD-05-CG-R-PA
Lms10LED, ... Lms23LED	✓ (MCD with a built-in preadjusted preamp.)	✓ (MCD without preamp.)	×	×
Lms27LED, ... Lms34LED Lms27LED-CG, ... Lms34LED-CG	×	×	✓ (MCD with a built-in preadjusted preamp.)	✓ (MCD without preamp.)

Photodiode series Lms40PD/ Lms41PD, Lms43PD, Lms49PD are not compatible with MCD board because of the inability to detect emission with 20 μ s pulse duration properly.

Question of compatibility of custom matrices and photodiodes with the MCD board should be discussed with the manufacturer in advance.

Technical characteristics

Parameters	Value	Parameters	Value
Input voltage	Stabilised +12 V	Pulse duration	20 μ s
Voltage tolerance	-5 to +5%	Repetition rate (per channel)	0.5 kHz
Input current	max. 0.25 A	Repetition rate (8 channels)	4 kHz
Board dimensions	105 \times 70 \times 15 mm	Output current amplitude	adjusted by manufacturer*
Signal output voltage amplitude	11 V (-4 V for inverted constant signal)	Output signal gain (adjustable)	1x - 10x

*Current values are to be preadjusted by manufacturer depending on the LED matrix (set of LEDs) and photodiode that are to be used with MCD.



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