



Product Brief

CDM10V

0-10 V dimming interface IC

The compact and highly integrated CDM10V allows designers to replace many of the discrete components used in conventional 0-10 V dimming schemes with a single device.

Analog 0-10 V to digital PWM converter for dimming

Infineon's CDM10V is the industry's first single-chip lighting interface IC dedicated for lighting applications capable of transforming an analog 0-10 V input into a PWM or dimming input signal required by a lighting controller IC. The signal is delivered in the form of a 5 mA optocoupler-ready 0 to 100 percent PWM output. One-time configuration of key parameters such as minimum duty cycle (1 to 10 percent), PWM output frequency (200 Hz to 2 kHz), dimmer/resistor bias current (50 μ A to 500 μ A) and "dim-to-off" functionality allows the CDM10V to be used across a variety of different commercial and industrial LED lighting applications. Furthermore, with "dim-to-off" enabled the IC also provides the option of accepting PWM input signals.



High level of integration, achieving low BOM cost

Supplied in an ultra-miniature 6-pin SOT package, the CDM10V is ideally suited for use on small PCBs with high component densities. Beside the optocoupler, no additional components are needed to realize the analog to PWM conversion.



Supporting wide range of supply power

A supply voltage of 11 V to 25 V ensures compatibility with all common LED lighting applications including luminaries, troffers, downlights, sconces, office lighting and signage.



Configurable

To configure CDM10V, eFuses are used which can be one time burned to set the desired parameters. This allows adaptations to different application requirements. The device comes with default settings. The configuration is easy to understand. One byte will be sent to the UART interface. An optional configuration board is available to perform the configuration.

Key features

- > Small SOT-23 package
- > Active dimming (0-10 V)
- > Passive dimming (resistor)
- > PWM input
- > Supply voltage 11-25 V
- > Configurable PWM frequency 200-2000 Hz
- > Configurable minimum duty cycle 1-10 percent
- > Configurable R-DIM bias current 50-500 μ A
- > Configurable dim-to-off
- > Embedded digital signal processing maintains minimum variations from device to device

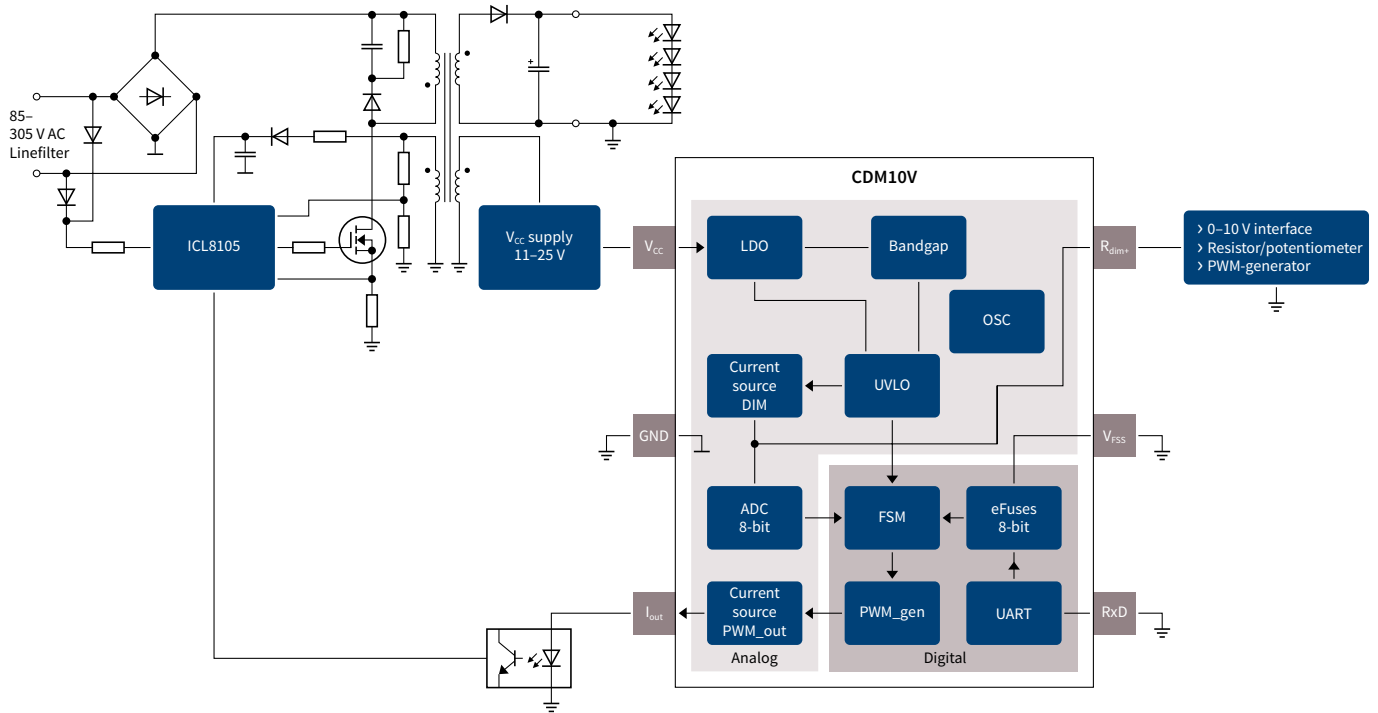
Key benefits

- > Single device solution
- > One solution for various applications with one time configuration possibility
- > Transparent PWM mode to transfer PWM signals from secondary to primary side

Applications

- > 0-10 V dimming
- > Isolated signal transfer


Typical application schematic using CDM10V



Product portfolio

| Product | I _{OUT} [mA] | Min. duty cycle [%] | PWM output frequency [kHz] | Dimmer/Resistor Bias Current [µA] | Dim-to-off | OPN | SP Number |
|----------|-----------------------|---------------------|----------------------------|-----------------------------------|------------------|--------------|-------------|
| CDM10V | 5 | 1/2/5/10 | 0.2/0.5/1.0/2.0 | 50/100/200/500 | Disabled/Enabled | CDM10VXTSA1 | SP001424754 |
| CDM10V-2 | 5 | n.a. | 1 | 200 | Enabled | CDM10V2XTSA1 | SP001684884 |
| CDM10V-3 | 5 | 1 | 1 | 200 | Disabled | CDM10V3XTSA1 | SP001715882 |
| CDM10V-4 | 5 | n.a. | 2 | 100 | Enabled | CDM10V4XTSA1 | SP001727960 |

CDM10V configuration board

| Type | Description | Ordering code | |
|-------------------|--|---------------|---|
| COOLDIM_PRG_BOARD | This is a configuration board for the one time configuration of the CDM10V | SP001493166 |  |

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