



16-Channel Fm+ I²C-Bus 57 MA Constant-Current LED Driver

PCA9952_PCA9955

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The PCA9952 and PCA9955 are I²C-bus controlled 16-channel constant current LED driver optimized for dimming and blinking 57 mA Red/Green/Blue/Amber (RGBA) LEDs in amusement products. Each LEDn output has its own 8-bit resolution (256 steps) fixed frequency individual PWM controller that operates at 31.25 kHz with a duty cycle that is adjustable from 0 % to 99.6 % to allow the LED to be set to a specific brightness value. An additional 8-bit resolution (256 steps) group PWM controller has both a fixed frequency of 122 Hz and an adjustable frequency between 15 Hz to once every 16.8 seconds with a duty cycle that is adjustable from 0 % to 99.6 % that is used to either dim or blink all LEDs with the same value.

Each LEDn output can be off, on (no PWM control), set at its individual PWM controller value or at both individual and group PWM controller values. The PCA9952 and PCA9955 operate with a supply voltage range of 3 V to 5.5 V and the constant current sink LEDn outputs allow up to 40 V for the LED supply. The output peak current is adjustable with an 8-bit linear DAC from 225 μ A to 57 mA.

These devices have built-in open, short load and overtemperature detection circuitry. The error information from the corresponding register can be read via the I²C-bus. Additionally, a thermal shutdown feature protects the device when an internal junction temperature exceeds the limit allowed for the process.

The PCA9952 and PCA9955 devices have Fast-mode Plus (Fm+) I²C-bus interface. Fm+ devices offer higher frequency (up to 1 MHz) or more densely populated bus operation (up to 4000 pF).

The PCA9952 is identical to PCA9955 except for the following differences:

- The PCA9952 has only three hardware address pins compared to four on PCA9955
- The PCA9952 has an output enable pin (OE) and the PCA9955 does not

View additional information for [16-Channel Fm+ I²C-Bus 57 MA Constant-Current LED Driver](#).

Note: The information on this document is subject to change without notice.

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