Product Overview

NCV7685: 12 Channels 60 mA LED Linear Current Driver I2C Controllable for Automotive Applications

For complete documentation, see the data sheet.

The NCV7685 consists of twelve linear programmable constant current sources with common reference. The part is designed for use in the regulation and control of LED for automotive applications. The NCV7685 allows 128 different duty cycle levels adjustable using pulse width modulation (PWM) independently for each output channel programmable via I2C serial interface. PWM frequency can be chosen in four different configurations up to 1200 Hz. The device can be used with micro-controller applications using the I2C bus or in stand-alone applications where a choice could be done in between 2 different static configuration settings. The IC also provides 3.3 V voltage reference to the application for loads up to 1 mA. LED brightness level is easily programmed using an external resistor. Each channel has an internal circuitry to detect open-load conditions with an optional auto-recovery mode. If one driver is in open-load condition, all other channels could be turned off according to the programmable bit setting. The device is available in small body size SSOP24-EP package.

Features

- 12 Common Current Programmable Sources up to 60 mA
- Independent PWM Duty Cycle Control for each Channel via PC
- Common PWM Duty Cycle Control via I2C
- On-Chip 150, 300, 600 and 1200 Hz PWM
- Open LED String Diagnostics
- Low Dropout Operation for Pre-Regulator Applications
- Single Resistor for Current Set Point
- Voltage Reference 3.3 V/1 mA
- 8 Bits I2C Interface with CRC8 Error Detection
- OTP Bank for Stand-Alone Operation (2 Configurations)

  For more features, see the data sheet

Applications

- Entry Level LED Tail Lights. NCV7685 used without MCU
- Option Level LED Tail Lights with Sequential Turn Indicator. NCV7685 controlled by Low End MCU
- High End Pixelized LED Tail Light with Full Animation Capabilities
- Turn Signal and Other Externally Modulated Applications
- RGB LED driver (4 x RGB per NCV7685)

End Products

- Exterior Lighting (Low Power)
- Interior Lighting

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	V_I Max (V)	I_O Max (mA)	LEDs in Series, Max #	LEDs in Parallel, Max #	Package Type
NCV7685DQR2G		AEC Qualified PPAP Capable Pb-free Halide free	Active	40 28	60	4	12	SSOP-24 NB EP

For more information please contact your local sales support at www.onsemi.com.

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