



New Product Announcement

AL5887

36-Channel Linear LED Driver with I2C/SPI and Diagnostics Simplifies RGB LED Lighting

The DIODES™ AL5887 is a 36-channel, linear current LED driver using SPI or I2C for a wide and dynamic range of programmable LED currents.

Each channel has an internal 12-bit PWM for color and brightness control, making it ideal for up to 12 RGB LED modules or 36 single-color LED lighting applications.

The device has built-in programmable registers, with three programmable banks (A, B, C) for software control of each color. This enables users to easily customize the device to accommodate the following functions:

- Independent color-mixing register per channel
- Independent brightness control register per RGB module
- 3-bit dithering function to enhance the PWM resolution
- Pre-UVLO (undervoltage lockout) and pre-OTP (overtemperature protection) warning to pull fault-pin low for early system protection

The AL5887 automatically enters its power saving mode of 15 μ A (max) when all LEDs are off for >30ms.

The device is available in the wettable W-QFN6060-52/SWP package.

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The DIODES™ Advantage

The SPI/I2C AL5887 provides precise adjustment of brightness and color in commercial and industrial applications.

- **6-Bit Global LED Output Current**
Features programmable registers through I2C/SPI interface
- **Diagnostic and Protection Functions**
Includes open-drain fault-indication pin for individual LED channel open/short detection, UVLO, and overtemperature conditions
- **Internal 16MHz Oscillator for PWM Dimming**
Eliminates the need for an external PWM clock
- **Dimming Using Both PWM (3%) and Analog (<3%)**
Supports brightness control better than 1%
- **Device-to-Device and Channel-to-Channel Current Accuracy Better Than 5%**
Provides precise color mixing and uniform color distribution across lamps and displays

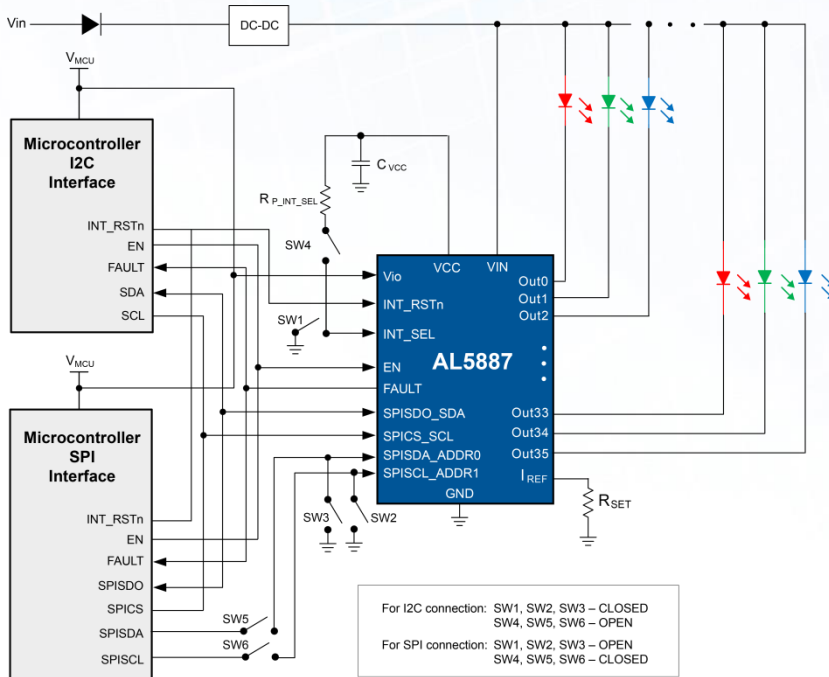
Applications

- Electric vehicle charging stations
- Smart Home Appliances
- Infotainment displays
- IoT information indicators
- RGB LED lighting
- Architectural lighting
- Industrial LED lighting
- Computing hardware



AL5887

Typical Application



Programmable-Current, Linear LED Driver Portfolio

Part Number	Channels	Min. Input Voltage	Max. Input Voltage	Max. Output Current Per Channel	Reference Voltage Accuracy	Operating Temp. Range	Dimming Mode		Digital Interface	Package
		V	V	mA	±%	°C	Analog	PWM		
AL5887	36	2.7	5.5	70	-	-40 to +85	Internal Register	Internal Register	I2C/SPI	W-QFN6060-52/SWP (Type A1)
AL5873	3	5	55	250	2	-40 to +125	Yes	Yes	-	TSSOP16-EP
AL5810	1	2	60	200	3	-40 to +105	No	Yes	-	W-DFN2020-3/SWP TO-252 (DPAK)

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAPs)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
AL5887JAZW52-13	Standard	W-QFN6060-52/SWP (Type A1)	MSL-3	4,000	13" Tape and Reel