The 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 15µA (max) when all LEDs are off for >30ms.

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

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

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New Product Announcement

AL5887

Typical Application

Programmable-Current, Linear LED Driver Portfolio

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Ordering Information

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