



# New Product Announcement

## AL58263

### 16-Channel LED Driver with 16-Bit Dimming and Diagnostics for LED Display Applications

The AL58263 is a 16-channel constant current LED driver with 16-bit grayscale adaptive pulse density modulation (APDM), and supports error diagnostics, power-saving function, and current gain control.

This distinctive APDM technology abates non-ideal IOUT distortion due to non-symmetric transient responses, and enhances refresh rate by efficiently separating the frame waveform.

The AL58263 operates over a 3V to 5.5V input voltage range with a 15V output channel voltage. A fast 25MHz data clock (DCK) serial input delivers up to 55mA of high-accuracy current to each string of LEDs.

Each channel output current is individually programmable via a digital interface. The output currents are set by one external sensing resistor along with a 6-bit global current control register.

The AL58263 has built-in diagnostics with LED-open/-short detection and protection features. Any resulting errors are stored in the image-shift register for the MCU to read.

The AL58263 is available in the thermally enhanced TSSOP-24EP (Type A1-B) package.



#### The DIODES Advantage

The AL58263 16-channel LED driver, with its 16-bit adaptive pulse density modulation dimming, provides a reliable and effective high-resolution display solution.

- Built-in Diagnostics and Protection Features**  
 Detects LED-open, LED-short, output short-to-GND, output short-to-power, and REXT short-to-GND, storing the results for a more robust solution
- Pre-Overtemperature (OTP) +155°C Thermal Warning**  
 Provides a pre-thermal shutdown warning, enabling the system to respond before display shuts down
- Increased display refresh rate up to 16MHz external grayscale clock (GCK) frequency**  
 Improved display refresh rate and transient response
- 15V Operating Output Channel Voltage**  
 Drives more LED in a series than device power rail allows
- Supports Daisy Chaining**  
 Cascades up to 1,440 devices; maximum 23,040 LED strings

#### Applications

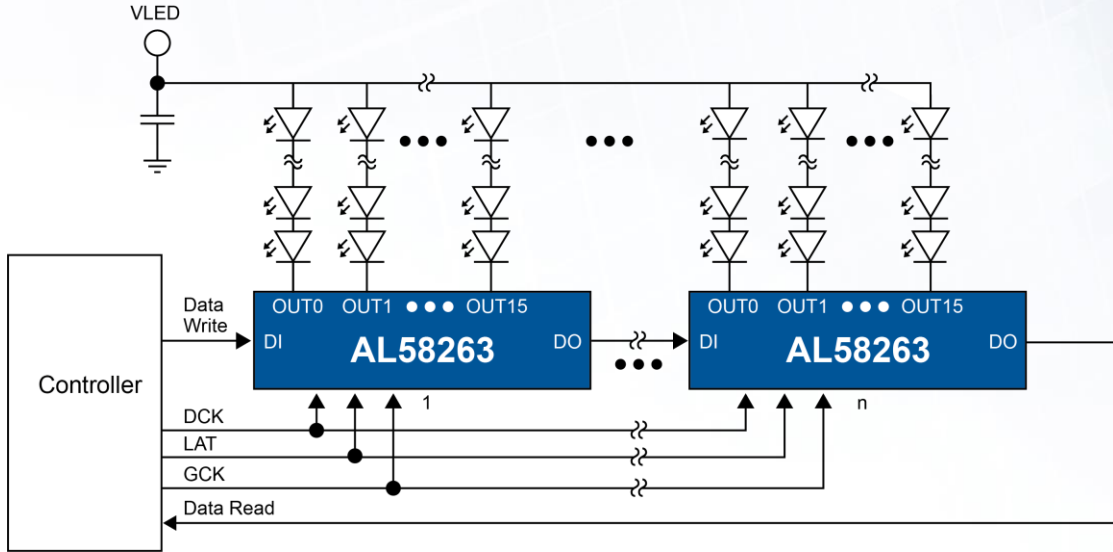
- Indoor and outdoor LED video displays
- Variable message signs (VMS)
- Traffic signs
- Outdoor billboard signage
- LCD display backlighting

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### Typical Application



### Multi-Channel LED Driver Portfolio

Part Number	Min. Supply Voltage	Max. Supply Voltage	Max. V <sub>OUT</sub>	Number of Channels	Channel Max. Output Current	Accuracy	Dimming	Temp. Range	Package
	V	V	V		mA	%		°C	
<a href="#">AL58263</a>	3.0	5.5	15	16	55	±1.5	PWM dimming thru Serial Interface	-40 to +85	TSSOP-24EP (Type A1-B)
<a href="#">AL5887</a>	2.7	5.5	5.5	36	70	±2.0	PWM dimming thru I2C/SPI	-40 to +85	W-QFN6060-52/SWP

### Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
<a href="#">AL58263T24E-13</a>	<a href="#">Standard</a>	TSSOP-24EP (Type A1-B)	MSL-3	2,500	13" Tape & Reel