



# New Product Announcement

## AL58221

### 12-Channel, RGB LED Driver Reduces EMI with Register Programmable Output Current Rise/Fall Time

The AL58221 is a 12-channel, constant-current, adaptive pulse density modulation (APDM) LED driver which operates over a 3V~5.5V input voltage range.

The device provides 12 open-drain constant-current sinking outputs that are rated to 24V and deliver up to 60mA of high-accuracy current to each string of LED.

The AL58221's 12 outputs are split into three groups of four channels, with each group's output current set by three external resistors. Each channel's average output current can be individually programmable through its two-wire digital interface.

The device's two-wire serial interface (DI, DCKI) is used to send data and control commands stored in registers. It controls dimming resolution, clock frequency, and latch function. These signals are also shifted out via DO and DCKO, enabling the AL58221 to support cascading.

The AL58221 provides typical  $\pm 1\%$  channel-to-channel LED current accuracy, with  $\pm 0.1\%$  regulated output current capability and fast output transient response.

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



#### The DIODES Advantage

**The AL58221 is a 12-channel LED driver targeted for signage and display applications.**

- **Three Groups of Four Channels for Current Setting**  
Sets RGB output current by three external resistors
- **24V Output Channel Voltage**  
Supports longer LED strings
- **High-Speed (20Mbps) Two-Wire Serial Interface Inputs and Outputs (DI, DCKI; DO, DCKO)**  
Ensures faster data transfer
- **Adaptive Pulse Density Modulation**  
Reduces output current waveform distortion and increases refresh rate for better viewing with less flickering
- **Supports up to 100 Daisy-Chain Devices**  
Support larger sized and higher resolution displays

#### Applications

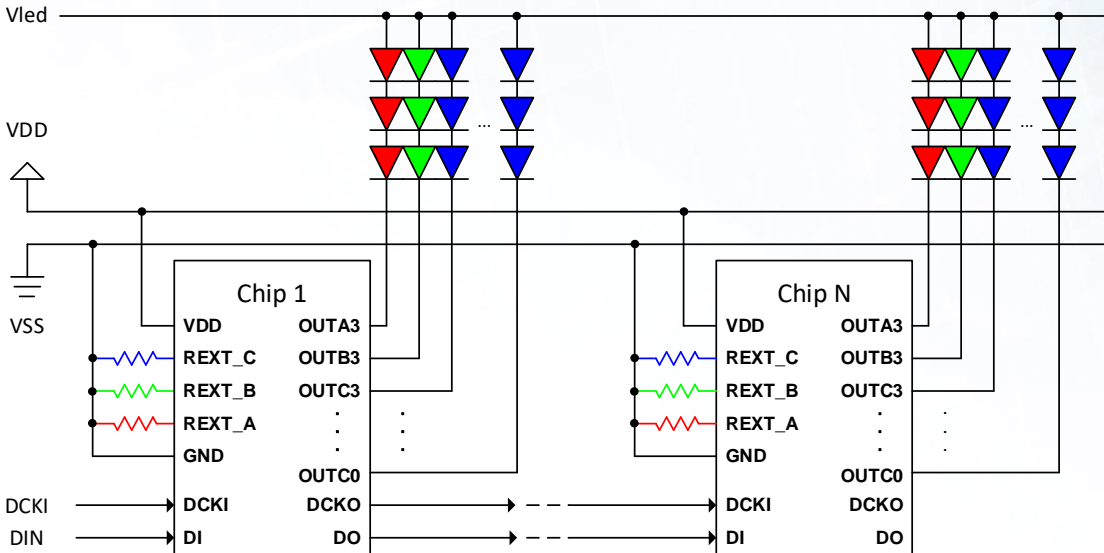
- Indoor and outdoor LED video displays
- Architectural and decorative lighting
- Digital signage and billboard applications
- LCD display backlighting
- Transportation signs

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## Typical Application



## Multi-Channel LED Driver Portfolio

Part Number	Supply Voltage Range	Max. $V_{OUT}$	Number of Channels	Output Current	Channel Max. Output Current	Channel-to-Channel Accuracy	Dimming	Temp. Range	Package
	V							°C	
<a href="#">AL58221</a>	3.0 to 5.5	24	12	60	62	±1.0	PWM Dimming through Serial Interface	-40 to +85	TSSOP-24EP (Type A1-B)
<a href="#">AL58263</a>	3.0 to 5.5	15	16	55	60	±1.5	PWM Dimming through Serial Interface	-40 to +85	TSSOP-24EP (Type A1-B)
<a href="#">AL5887</a>	2.7 to 5.5	5.5	36	70	160	±2.0	PWM Dimming through I2C/SPI	-40 to +85	W-QFN6060-52/SWP (Type A1)

## Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
<a href="#">AL58221T24E-13</a>	<a href="#">Standard</a>	TSSOP-24EP (Type A1-B)	MSL-3	2,500	13" Tape & Reel