Automotive-grade
12-Channel LED Driver for advanced rear lighting solutions

High-flexibility LED driver with independent brightness control for smart automotive rear and interior lighting solutions

Designed for state-of-art rear and interior lighting systems in premium vehicles, the ALED1262ZT provides a wide range of features to unleash any graphics implementation and at same time meet reliability requirements. With an input voltage supply range up to 38 V, this highly flexible 12-channel linear LED driver is fully compliant with direct plug-and-play car battery solutions. With complete diagnostics, protection circuits and improved radiated emissions, the ALED1262ZT is a fully tailored solution for automotive applications.

KEY FEATURES
• 12 independent output channels
• Supply voltage: 5.5 to 38 V
• 19 V rated current generators
• Each channel current from 6 to 60 mA
• 7-bit PWM local brightness control
• Slow turn on/off time for EMI reduction
• Gradual output delay
• Standalone and bus-driven modes
• Error detection for open LEDs
• Custom configuration by OTP
• 400 kHz fast I²C interface with selectable extended Hamming encoding
• Wired OR error flag connection
• Thermal shutdown and over-temperature alert

KEY APPLICATIONS
• Automotive exterior rear lighting
• Automotive interior lighting
MAIN DESCRIPTION

In Bus-driven mode, the ALED1262ZT communicates with the 400 kHz I²C interface to support advanced local dimming requiring high-speed data transmission performance. To improve communication robustness, the extended Hamming code can be selected. The ALED1262ZT can work in Stand-alone mode using pre-programmed configurations without the support of I²C communication.

With 7-bit individual non-linear grayscale brightness control and high data rate transmission ensured by a clock frequency up to 400 kHz, the ALED1262ZT offers an extended graphics experience.

Thanks to a gradual output current delay and over-temperature alert functions as well as embedded power management features, the ALED1262ZT is further strengthened thanks to full diagnostics with a wired OR error flag connection to meet the most demanding automotive robustness requirements. Moreover, each channel benefits from an individual smooth turn-on/off time and clock spread spectrum function for 7-bit PWM dimming which help make the device extremely noise-proof.

Available in a 6.4 x 7.8 mm HTSSOP24 package, the ALED1262ZT is fully AEC-Q100 Grade 1 compliant.

EVALUATION & DEVELOPMENT KIT

![Block diagram of ALED1262ZT]

PRODUCT TABLE

<table>
<thead>
<tr>
<th>Part Number</th>
<th>$V_{in}$ (V)</th>
<th>$I_{out}$ (mA)</th>
<th>Package</th>
<th>Packaging</th>
<th>Evaluation board order code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALED1262ZT</td>
<td>5.5 to 38</td>
<td>6 to 60</td>
<td>HTSSOP24</td>
<td>Tube</td>
<td>STEVAL-LLL002V1</td>
</tr>
<tr>
<td>ALED1262ZTR</td>
<td></td>
<td></td>
<td>Exposed pad</td>
<td>Tape &amp; reel</td>
<td></td>
</tr>
</tbody>
</table>