Elmos Semiconductor AG reserves the right to change the detail specifications as may be required to permit improvements in the design of its products.

1 CHANNEL SWITCHED MODE CONSTANT CURRENT CONTROLLER

Features
- Switched-Mode, PWM LED Controller
- 5V to 55V input voltage range, up to 80V boosted output voltage
- Boost-, SEPIC, Buck-Boost- or Buck Topology supported
- Constant Current Regulation implemented
- High-Precision Differential High-Side Sense up to 60V
- High-Frequency PWM Dimming Capability for constant LED Color
- Analog 10:1 Dimming Capability for LED Binning
- Integrated Softstart
- Advanced Error Detection (e.g. Over-Voltage, Open-Load Detection, different Shorts or GND Loss)
- Integrated Automotive LDOs for 5V & 3.3V
- AEC-Q100 Qualified
- Junction temperature range -40°C to +150°C

Applications
- Automotive LED lighting Applications (daytime running light, indicator, front- and rear light, interior lighting etc.)
- General Indoor and Outdoor Lighting and -Signals
- TFT Backlighting
- General Current driven Applications

General Description
E522.31 and E522.33 are part of a family of fixed frequency switched-mode high voltage LED power supplies and controllers with high efficiency. Integrated high-side sensing allows topologies related to the supply input (Boost-to-Battery) or to GND (Boost-to-GND).

The device is suitable for operation in boost-, buck-boost-, SEPIC- and buck-topologies, particularly in harsh automotive environments.

The constant switching frequency is adjustable up to 600kHz by an external resistor or can be synchronized in Master-Slave configurations with other devices.

Multiple control- and monitoring functions, e.g. short- and open load detection, over-temperature shutdown and under-voltage lockdown are implemented.

Ordering Information

<table>
<thead>
<tr>
<th>Ordering-No.</th>
<th>Oscillator Spectrum</th>
<th>Softstart Ramping</th>
<th>Package</th>
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<tbody>
<tr>
<td>E52231A61C</td>
<td>spread</td>
<td>Slow Ramping (SR)</td>
<td>QFN32L5</td>
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<tr>
<td>E52231A61CXFR</td>
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<td>Slow Ramping (SR)</td>
<td>QFN32L5</td>
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<tr>
<td>E52233A61CXFR</td>
<td>narrow</td>
<td>Fast Ramping (FR)</td>
<td>QFN32L5</td>
</tr>
</tbody>
</table>

Typical Application Circuit

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