

# LED drivers for automotive applications



**A complete offer of AEC-Q100-qualified ICs meeting automotive industry requirements with high precision current control and minimum power consumption**

ST offers a selection of multi-channel and multi-row driver constant-current LED manufactured and qualified to meet and exceed automotive industry requirements. These LED array drivers are 20 V rated for the best fit with automotive ratings. They are available with either 8 or 16 independent channels. They embed automatic power saving, error detection and thermal shutdown features. ALED7707 is a monolithic boost regulator driving LEDs for LCD backlighting and consisting of a high-efficiency boost converter and six integrated PWM-dimmable current generators with excellent dimming performance.

### Key features of ALED1642, STAP16, and STAP08 LED array drivers

- PWM dimming for grayscale brightness control and programmable current gain for wide design flexibility (ALED1642 only)
- Automatic power-saving feature shuts down device when outputs are off for maximum efficiency (not available for STAP08)
- 4-wire SPI enabling daisy chain connection
- Short and open error detection modes with read-back status in real-time to ensure fast response to fault conditions

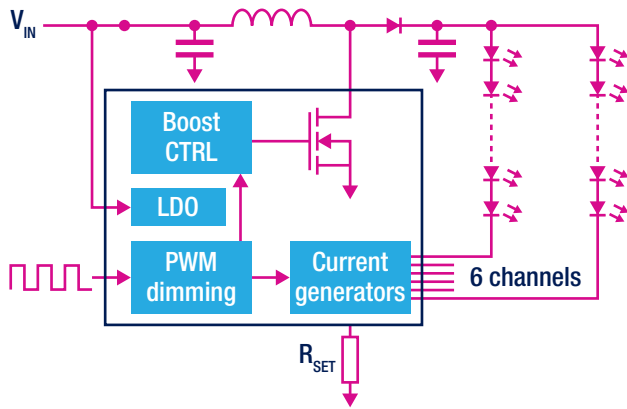
### Key features of ALED7707 LED multi-row driver

- Up to 36 V input voltage range with internal power MOSFET
- Six parallelable rows of up to 85 mA each
- LED failure (open and short circuit) detection

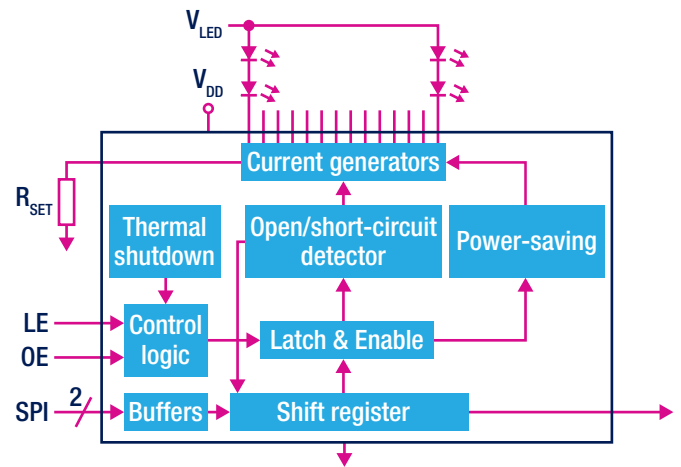
### KEY APPLICATIONS

- ALED1642, STAP08, STAP16: array drivers for rear and interior lights
- ALED7707 multi-row driver for infotainment TFT panel backlights

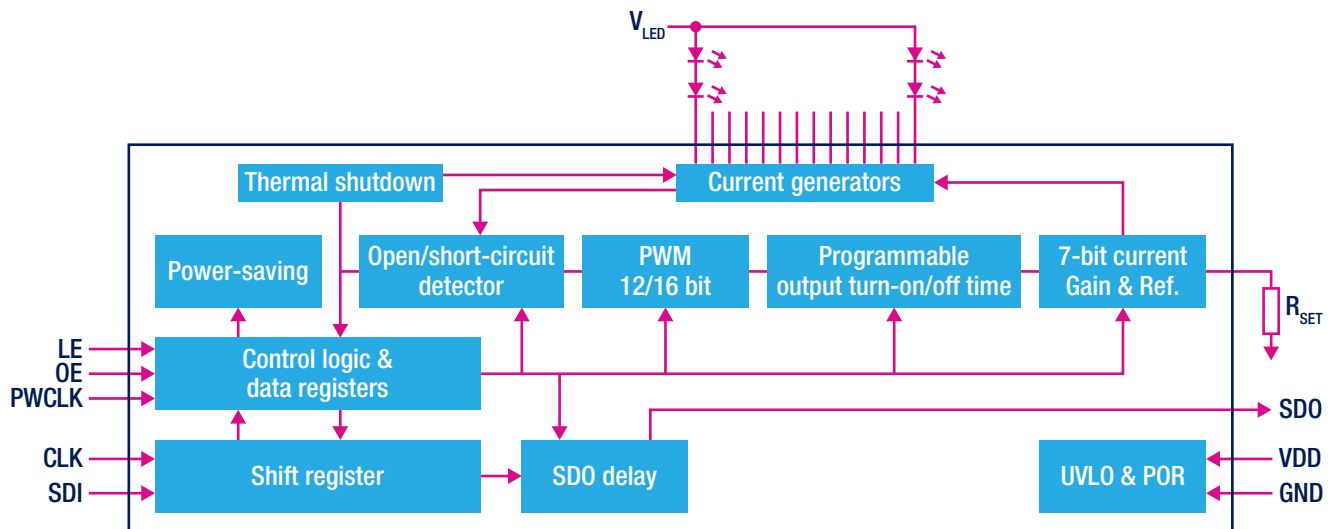
## ALED7707



## STPAP08/16



## ALED1642GW



## DEVICES

Order code	Input voltage (V)	Output voltage (V)	# of channels	I <sub>OUT</sub> per channel (mA)	Current accuracy typ (%) (ch-to-ch/IC-to-IC)	Error detection	Auto. power-saving	PWM dimming	package
ALED1642GW	3 to 5.5	20	16	3 to 40	± 1 / ± 3	Yes	Yes	Yes	TSSOP24 exposed pad
STAP16DPPS05					± 0.5 / ± 4	Yes	Yes	No	TSSOP24 exposed pad
STAP16DPS05			8	5 to 100	± 1.5 / ± 5	Yes	Yes	No	TSSOP24 exposed pad
STAP08DP05					± 0.5 / ± 4	Yes	No	No	TSSOP16 exposed pad

Part Number	Input voltage (V <sub>in</sub> ) min (V)	Input voltage (V <sub>in</sub> ) max (V)	Output current (I <sub>OUT</sub> ) max (mA)	Output current accuracy typ (%)	Max. no. of output channels	Switching frequency typ (kHz)	Max. no. of LEDs	LED configuration	Other features	Package
ALED7707	4.5	36	6 x 85	3	6	250 - 1000	60	Serial	External sync	VFQFPN 24L x 5 x 1 mm

