STEVAL-ISA056V1

6 rows - 30 mA LEDs driver with boost converter for LCD panels backlight evaluation board based on the PM6600

Data Brief

Features

- Boost section
  - 4.5 V to 28 V input voltage range
  - Internal Power MOSFET
  - Internal +5 V LDO for device supply
  - Up to 36 V output voltage
  - Constant frequency peak current-mode ctrl
  - 200 kHz to 1 MHz adjustable switching frequency
  - External sync for multi-device application
  - Pulse-skip power saving mode at light load
  - Programmable soft-start
  - Programmable OVP protection
  - Single ceramic output capacitor
  - Latched thermal shutdown
- Backlight driver section
  - Six rows with 30mA maximum current capability (adjustable)
  - Up to 10 W LEDs per row
  - Rows disable option
  - Less than 500 ns minimum dimming time (1% minimum dimming duty-cycle at 20 kHz dimming frequency)
  - ±2.0% current matching between rows
  - LED failure (open and short circuit) detection

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Description

This evaluation board based on the PM6600 consists of a high efficiency monolithic boost converter and six controlled current generators (rows) specifically designed to supply LEDs arrays used in the backlight of LCD panels. The device can manage an output voltage up to 36 V (i.e. ten white-LEDs per row).

The generators can be externally programmed to sink up to 30 mA and can be dimmed via a PWM signal (1% dimming duty-cycle at 20 kHz can be managed). The device allows to detect and manage the open and shorted LED faults and to let unused rows floating. Basic protections (output over-voltage, internal MOSFET over-current and thermal shutdown) are provided.

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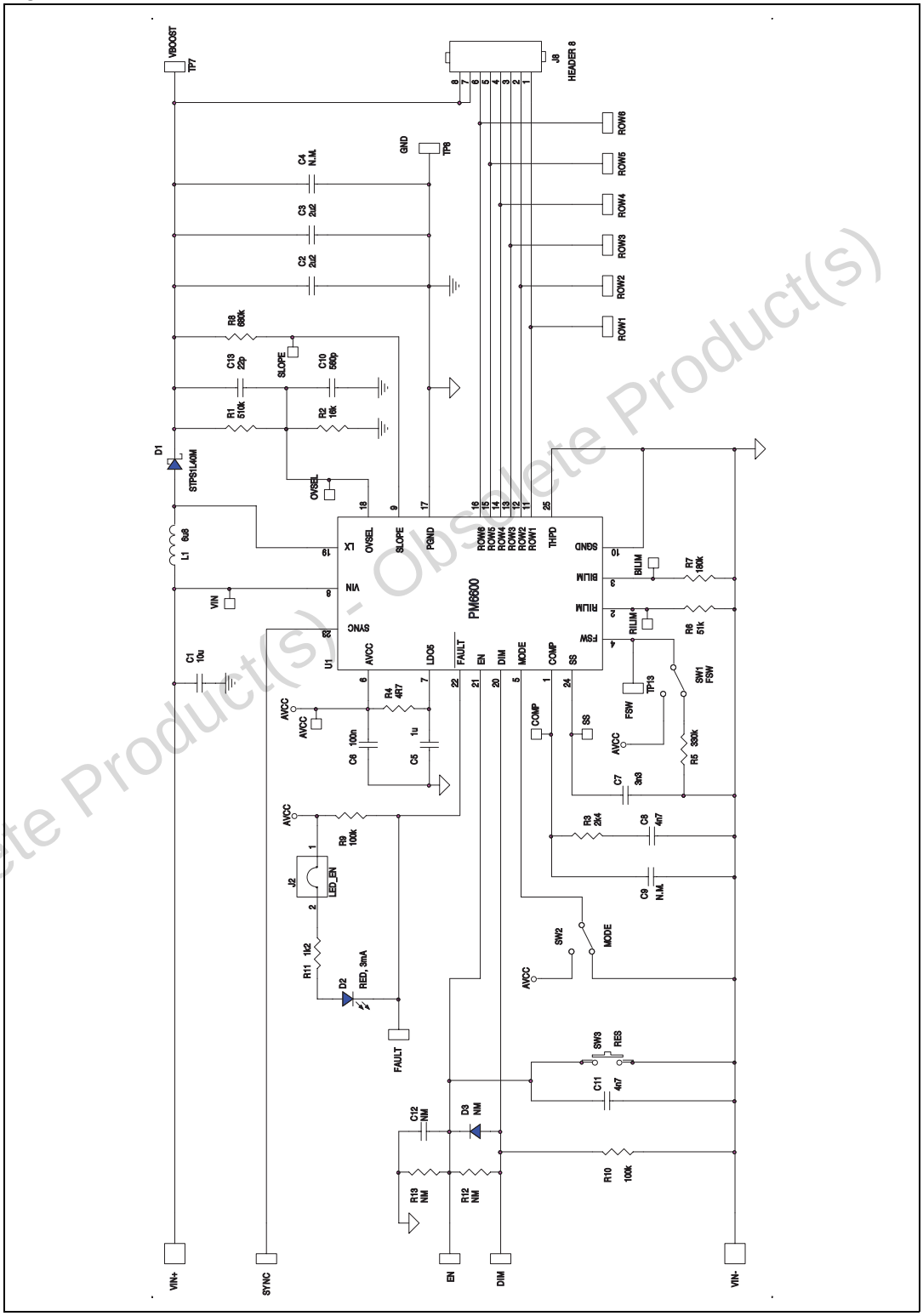
1 Circuit schematic

Figure 1. Schematic



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2 Revision history

Table 1. Document revision history

Date	Revision	Changes
10-Mar-2008	1	Initial release.

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