

Monitor LCD Panel PMIC with AVDD Boost, Level-Shifter, GPM, VCOM Calibrator and OP-Amp

Features

- 2.6 V to 6.5 V Input Supply Voltage Range
- High-Efficiency Step-up Regulator
 - . Peak-Current Mode Control – Fast Transient
 - . 330 kHz to 1.25 MHz Adjustable
 - . Built-in 20 V, 4.0 A, 0.12 Ω MOSFET
 - . High Performance Load / Line Regulation
- High-Voltage Level Shifter
 - . Logic Level Inputs
 - . -15 V to 35 V Output Rails
 - . Gate Pulse Modulator
- VCOM Calibrator
 - . 128-Step Adjustable Sink Current Output
 - . I2C interface – Address : 01010A1A0
- High-Speed OP-Amp
 - . 20 MHz, -3 dB Bandwidth
 - . 35 V / μ s Slew Rate
 - . 300 mA Output Current
- Protections
 - . Thermal Shutdown
 - . Short Circuit / Over-Voltage Protection (by VAVDD)

Applications

- LCD TV and Monitor Panels

Description

The SM4028 consists of a high performance step-up switching regulator (boost converter), a high-voltage level-shifting scan driver (level-shifter) with gate pulse modulator (GPM), a VCOM calibrator and a high-speed operational amplifier (op-amp). The step-up DC-DC converter provides the regulated supply voltage for the panel source driver ICs. The high switching frequency of the converter makes it possible to use ultra-small inductors and ceramic capacitors. The high-voltage level-shifting scan drivers with the GPM are fitted for capacitive loads and work well with panels that contain row drivers on the panel glass. The gate pulse modulator modulates the output voltage of the level shifter. The VCOM calibrator replaces mechanical potentiometers so that it significantly reduces labor costs, increases reliability and enables automation. The high-speed op-amp is designed to drive the LCD backplane (VCOM) with the capability of high current and wide bandwidth. The device is optimized for thin-film transistor (TFT) liquid-crystal display (LCD) applications.

Device Information

Part	Package	Size
SM4028	48 QFN	7 mm x 7 mm

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