ISL24837A

Programmable TFT-LCD V_{REF} Generator

FN7645
Rev 1.00
August 25, 2010

The ISL24837A contains a programmable 10-bit, 8-channel gamma DAC generator, a programmable 10-bit, 4-channel level shifter reference generator with external gain control, a trimmed bandgap voltage reference, and a digitally-controlled V_{COM} calibrator. The reference voltage of ISL24837A is set by the bandgap and two external feedback resistors, so the output voltages are independent of A_{VDD}. The V_{COM} calibrator is the sink-current output that attaches to an external voltage divider. The desired V_{COM} setting is controlled by the I^2C interface. Two banks of channels with external pin or I^2C control enable fast switching between 2 different gamma curves stored in internal EEPROM.

The ISL24837A is available in a 32 Ld QFN package and is specified for operation over the -40°C to +85°C temperature range.

Related Literature

- See FN6842,"8-Channel Programmable I^2C TFT-LCD Reference Voltage Generator with Band Gap Trimmed Reference, 4-Channel Programmable Amps with Negative Feedback Inputs, 1-Channel V_{COM} Op Amp, Integrated V_{COM} Calibrator and 2 Banks of Integrated EEPROM"

Features

- 8 Programmable 10-bit Gamma Voltages with Bandgap-Trimmed Reference
- 4-Channel, 10-bit Programmable Amps with Feedback Inputs for Level Shifter Reference Voltages
- Integrated Programmable V_{COM} Calibrator
- 1 V_{COM} Op Amp
- 2 Banks of EEPROM Storage, Rewriteable >300 Times
- 10-bit Resolution on all DACs
- 20ms DAC Loading Time at Power-On
- Analog Supply: 12V to 18V @ 15mA (Unloaded)
- Digital Supply: 2.5V to 3.3V @ 1mA (Unloaded)
- I^2C Interface
- Pb-free (RoHS Compliant)

Applications

- TFT-LCD Column Driver Reference Generator
- General-Purpose Reference Voltage Generators

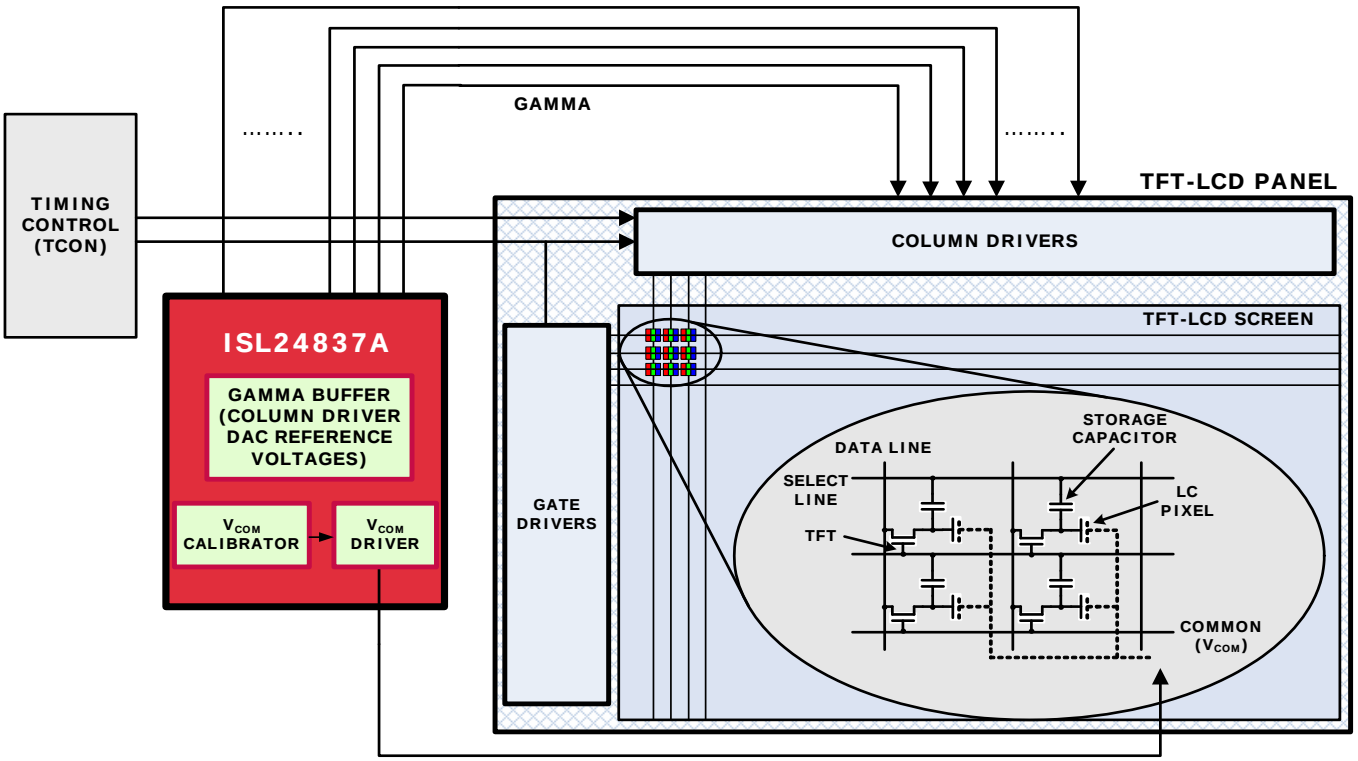

FIGURE 1. TYPICAL APPLICATION