

15-Channel I²C Programmable TFT-LCD Reference Voltage Generator with Dual-Bank, DVR V_{COM}, and Integrated EEPROM

ISL24853A

The ISL24853A is a 15-channel I²C programmable reference voltage generator for TFT-LCDs featuring ultra-low power operation. It features 14 general purpose 10-bit DACs with buffered dual bank outputs, which can be used to set the column driver reference voltages of a TFT-LCD panel (gamma correction). The device also has an 8-bit current-sink DAC for V_{COM} calibration, and a high output current V_{COM} amplifier. The integrated EEPROM, for storing all reference voltage data, features an endurance of 10,000 write cycles and is read/write capable over the digital supply voltage range.

The dual bank outputs are capable of fast switching between different sets of voltage reference data. Bank switching is ideal to quickly change between gamma curves for 2D/3D TFT-LCD applications. The device's outputs are double buffered, which allows for updating data in one bank while data is simultaneously output from the other bank.

Combining gamma and V_{COM} reference voltage generators, with low power operation, and EEPROM, the ISL24853A provides a complete reference voltage solution ideal for TFT-LCD applications.

The ISL24853A is available in a 32 Ld 5mmx5mm TQFN thermally enhanced package. It is specified for operation over the -40°C to +85°C ambient temperature range.

Features

- 15-channel reference voltage outputs, I²C programmable
 - 14-channel gamma references, 10-bit resolution, with buffered dual-bank outputs
 - 1-channel V_{COM} calibrator ("DVR"), 8-bit current-sink DAC
- High output current V_{COM} amplifier
- Fast output bank switching
- Dual bank gamma
- EEPROM endurance: 10,000 write cycles
 - Read/write capable over 2.25V to 3.6V V_{DD} range
- 6.3V to 19V analog operating supply range
- 2.25V to 3.6V digital operating supply range
- 32 Ld 5mmx5mm TQFN package
- Pb-free (RoHS compliant)

Applications

- HD and FHD TFT-LCD TVs and monitors - Gamma and V_{COM}
- 2D/3D TFT-LCD
- General-purpose reference voltage generator

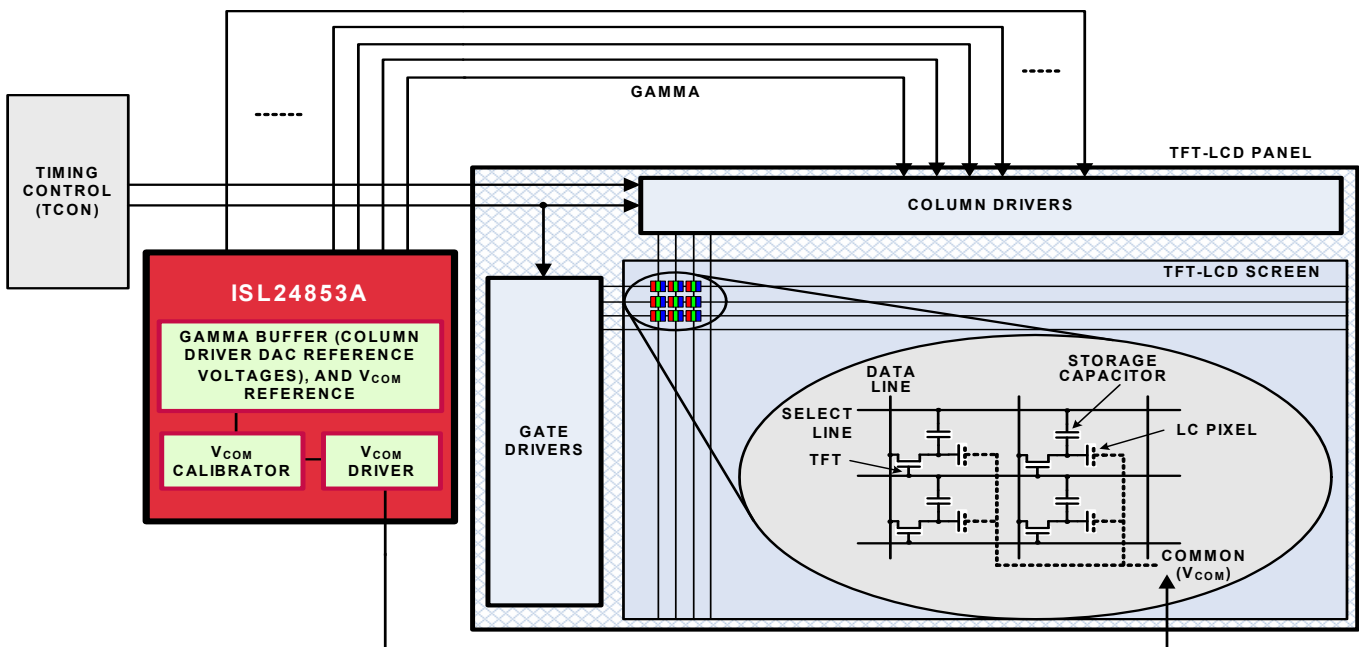


FIGURE 1. TYPICAL APPLICATION: TFT-LCD REFERENCE VOLTAGE GENERATOR

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