

17-Channel I²C Programmable TFT-LCD Reference Voltage Generator, with Dual Bank Outputs and Integrated EEPROM

ISL24832

The ISL24832 is a power optimized programmable reference voltage generator for TFT-LCDs. It contains an I²C programmable, 16-channel, 10-bit reference voltage generator with buffered dual bank outputs, an I²C programmable, 1-channel, 10-bit V_{COM} calibrator with V_{COM} amplifier, and internal EEPROM. The ISL24832 provides two inputs (REFX_{IN}) to set the high/low reference voltages for the DACs.

There are two output banks capable of fast switching (<1μs) between two different sets of voltage reference data. Bank switching is ideal to quickly change between two gamma curves or operation modes in TFT-LCD applications. The device's outputs are double buffered, which allows for updating data in one bank while simultaneously outputting data from the other bank. The ISL24832 also integrates two banks of EEPROM storage capable of storing all reference voltage data. The EEPROM is capable of >300 write cycles.

Combining gamma and V_{COM} reference voltage generators with low power operation and EEPROM, the ISL24832 provides a complete reference voltage solution ideal for tablet, monitor, and mobile TFT-LCD applications.

The ISL24832 is available in a 32-LD 5x6mm QFN thermally enhanced package. It is specified for operation over the -40°C to +85°C ambient temperature range.

Features

- 17-Channel Reference Voltage Outputs, I²C Programmable with 10-bit Resolution:
 - 16-Channel Gamma References, with Buffered Dual Bank Outputs
 - 1-Channel V_{COM} Calibrator, with Amplifier Output
- Low Power: Ideal for Tablet and Mobile TFT-LCD Applications, I_{AVDD} = 5mA @ 15V
- Two Banks of EEPROM: Re-writable >300 times
- Fast Output Bank Switching Time: <1μs Typical
- 10.8V to 19V Analog Operating Supply Range
- 2.25V to 3.6V Digital Operating Supply Range
- Pb-free (RoHS Compliant)

Applications

- TFT-LCD Tablet PC, Monitors
- Mobile, 2D/3D TFT-LCD
- General-Purpose Reference Voltage Generator

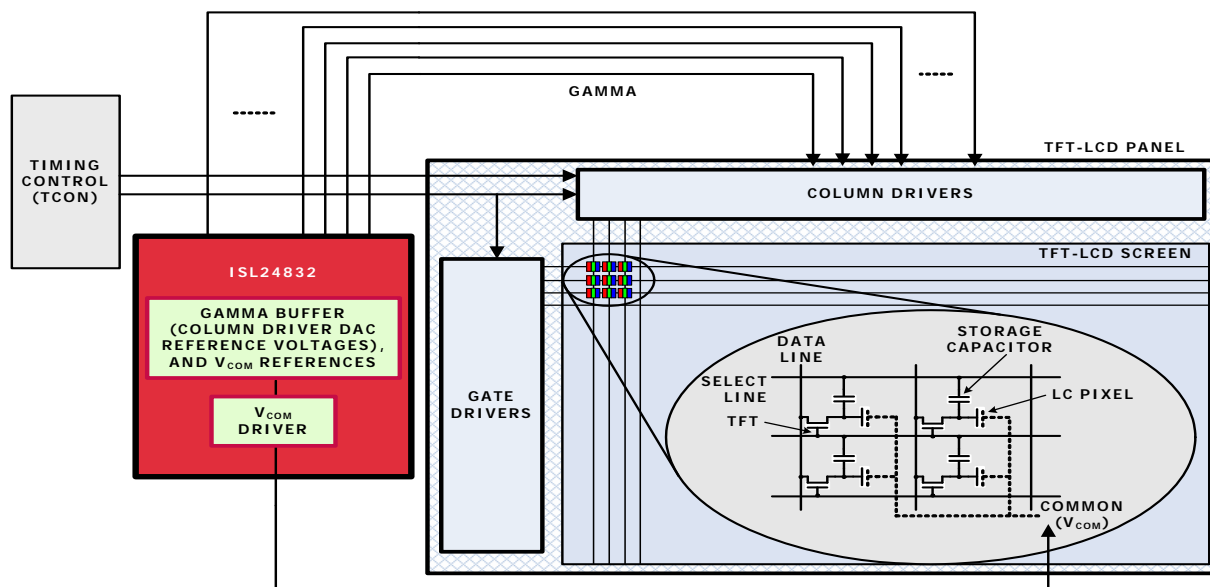


FIGURE 1. TYPICAL APPLICATION: TFT-LCD REFERENCE VOLTAGE GENERATOR

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