MAX5679

Digitally Programmable LCD Gamma Reference Generator with Digital Voltage Reference

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Status

Active: In Production.

Description

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The MAX5679 digitally programmable LCD gamma reference generator provides 18 buffered channels for biasing LCD column drivers. The device provides 14 outputs of 8-bit programmable gamma reference voltage derived from four externally applied reference voltages, and four buffered outputs of the same externally applied reference voltages. An I²C serial interface programs the 14 upper and lower range gamma buffer outputs independently.

The MAX5679 features a digitally programmable voltage reference (DVR) with 7-bit adjustable current sink to set the LCD common backplane (VCOM) voltage. The MAX5679 includes a power-on reset (POR) function that configures all 14 programmable gamma outputs to predetermined levels upon initial power-up.

The MAX5679 is available in a 5mm x 5mm, 32-pin TQFN package and is specified over the -40°C to +85°C extended temperature range.

Key Features

- 7-Bit Adjustable VCOM Calibrator (DVR)
- 14 Programmable Gamma Outputs for LCD
  - Column Driver ICs
  - 8-Bit DAC Resolution for Upper and Lower Range Outputs
  - Maximum Output Swing of (AV_{DD} - 0.2V) (OUT1–OUT7)
  - Minimum Output Swing of (GND + 0.2V) (OUT8–OUT14)
- Four Independent Reference Inputs
- Four Independent Buffered Reference Outputs
- 9V to 20V Analog Supply
- 2V to 5.5V Digital Supply
- 400kHz I²C-Compatible Serial Interface
- Pin-Selectable I²C Address Bit Allows Two Slave IDs
- Backward Compatible with the MAX5678

Applications/Uses

- TFT-LCD Panels for Desktop Monitors
- TFT-LCD Panels for Flat Screen TVs

Key Specifications: Programmable Gamma Buffers

Part Number	Total Channels	Programmable Channels	Resolution (bits)	Integrated Nonvolatile Memory	Memory Banks	VCOM Calibrator	VCOM Buffer	Interface	V_{SUPPLY} (V)	I_Q (mA)	Package/Pins	Oper. Temp. (°C)
MAX5679	18	14	8	No	1	Yes	No	I^2C	9 to 16.5	12.5	See Data Sheet/	-40 to +85

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