MAX9668 LCD Gamma Buffer

Description

The MAX9668 outputs eight voltage references for gamma correction in TFT LCDs and one voltage reference for VCOM. Each gamma reference voltage has its own 10-bit digital-to-analog converter (DAC) and buffer to ensure a stable voltage. The VCOM reference voltage has its own 10-bit DAC and an amplifier to ensure a stable voltage when critical levels and patterns are displayed. The MAX9668 features integrated multiple-time programmable (MTP) memory to store gamma and VCOM values on the chip, eliminating the need for external EEPROM. The MAX9668 supports up to 100 write operations to the on-chip nonvolatile memory.

The gamma outputs can drive 200mA peak transient current and settle within 1µs. The VCOM output can provide 600mA peak transient current and also settles within 1µs. The analog supply voltage range extends from 9V to 20V, and the digital supply voltage range extends from 2.7V to 3.6V.

Gamma values and the VCOM value are programmed into registers through the I²C interface.

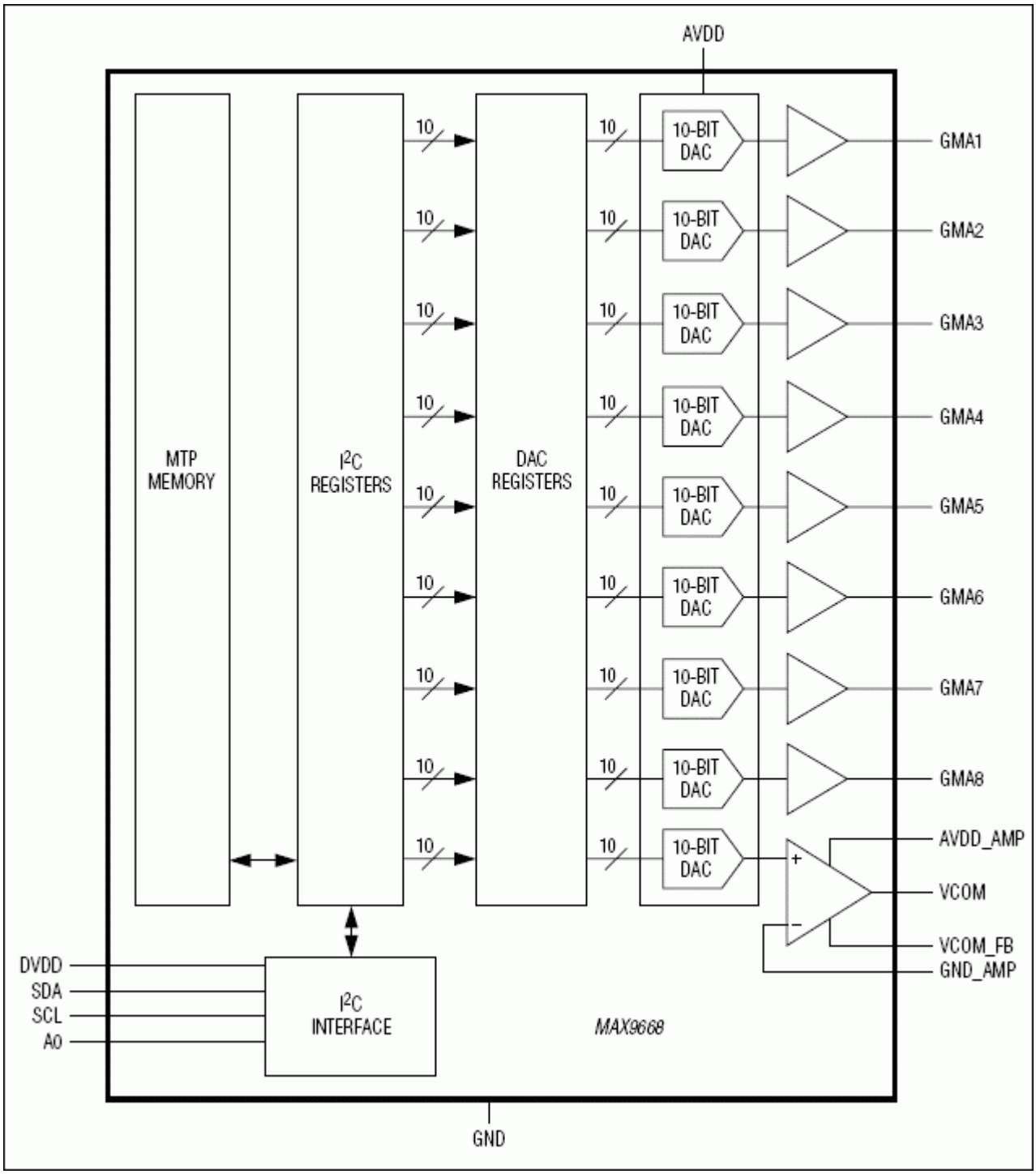
Key Features

- 8-Channel Gamma Correction 10-Bit Resolution
- VCOM Driver
- Integrated MTP Memory
- One Memory Banks
- Programmable VCOM Limits
- VCOM Buffer
- Interface I^2C
- 1µs Settling Time
- 20V Maximum Analog Supply Voltage (V_{SUPPLY}: 9 to 20V)
- 200mA Peak Current on Gamma Channels
- 600mA Peak Current on VCOM Channel
- Oper. Temp. -40 to +125
- Package/Pins: TQFN/20

Applications/Uses

- TFT LCDs

Diagram


AVDD
MTP MEMORY
I²C REGISTERS
DAC REGISTERS
10
10-BIT DAC
GMA1
GMA2
GMA3
GMA4
GMA5
GMA6
GMA7
GMA8
AVDD_AMP
VCOM
VCOM_FB
GND_AMP
DVDD
SDA
SCL
A0
I²C INTERFACE
MAX9668
GND