

## Programmable Multi-Output TFT LCD Bias Power

### Features

- Input Supply Range: 8V ~ 14V
- Current Mode Sync-Boost Converter for AVDD
  - Fixed 750kHz Switching Frequency
  - 2.2A to 5A Programmable Current Limit
  - 13.5V to 19.8V Programmable Output
  - Integrated 20V/0.1Ω Switching N-MOSFET
- Buck Converter for VLOGIC
  - Fixed 750kHz Switching Frequency
  - 2.2V to 3.7V Programmable Output
  - Integrated 12V/0.2Ω Switching N-MOSFET
- Positive Charge-Pump Regulator for VGH
  - 20V to 35V Programmable Output
  - Thermal Compensation
- Negative Charge-Pump Regulator for VGL
  - -4.5V to -13.5V Programmable Output
- Built-in Power-On Sequence and Soft-Start Function
- Isolation Switching PMOS for AVDD
- Protection Function
  - Input Under Voltage Lockout (UVLO)
  - Over-Temperature Protection (OTP)
  - Over-Voltage Protection (OVP)
  - Over-Current Protection (OCP)
  - Output Under Voltage Protection (UVP)
  - Short Circuit Protection (SCP)
- 2-Wire I<sup>2</sup>C Slave Mode Interface
- Available in QFN6X6-40 Package

### Applications

- TFT LCD Displays

### General Description

The G2561 DC-DC converter provides regulated voltages required by thin-film transistor (TFT) liquid crystal displays (LCD) panels in QFN6X6-40 package. One synchronous step-up converter, one asynchronous step-down converter, and two charge pumps regulators convert the 8V to 14V input voltage into four output voltages with 1 channel OPAMP. These features complete the power-supply requirements of large screen LCD panels. The step-up converter provides source voltages  $V_{AVDD}$  and the step-down converter provides logic voltage  $V_{LOGIC}$  for the system. The dual charge pumps regulators independently generate adjustable regulated output voltages VGL and VGH to bias the LCD using external charge pump attached to the switching node. The step-up converter and step-down converter operate with a fixed switching frequency of 750kHz, and all output are programmable.

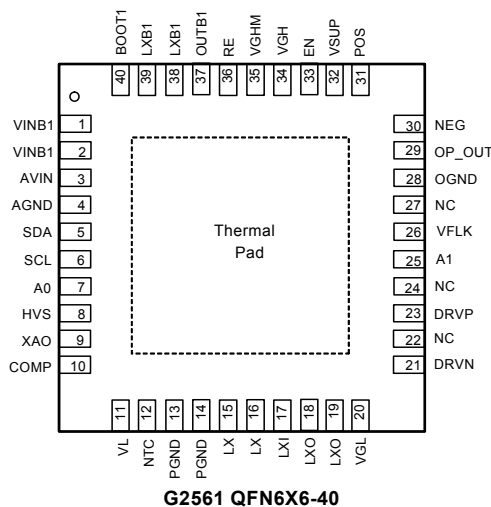
The G2561 is available in a 40-pin QFN (6mm x 6mm) package.

### Ordering Information

ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE (Green)
G2561QG1U	2561	-40°C to 85°C	QFN6X6-40

Note: QG: QFN6X6-40  
 1: Bonding Code  
 U: Tape & Reel

### Pin Configuration



Note: Recommend connecting the Thermal Pad to the Ground for excellent power dissipation