

## Quad-Output TFT LCD Bias DC-DC Converter

### Features

- 8V to 14V Input Voltage Range
- $V_S$  Output Voltage Range up to 19 V
- 1% Accurate Boost Converter with 3A Switch Current
- 1.5% Accurate 2.3A Step-Down Converter
- 500kHz/750kHz Fixed Switching Frequency
- 150mA Negative Charge Pump Driver for VGL
- 150mA Positive Charge Pump Driver for VGH
- Adjustable Sequencing for VGL, VGH
- Gate Drive Signal to Drive External MOSFET
- Internal and Adjustable Soft Start
- Cycle-by-Cycle Over Current Protection
- Short-Circuit Protection
- Overvoltage Protection
- Thermal Shutdown
- Available in TSSOP-28 Package

### General Description

The G5561A DC-DC converter provides regulated voltages required by thin-film transistor (TFT) liquid crystal displays (LCD) panels in TSSOP package. One step-up converter, one step-down converter, and two charge pumps convert the 8V to 14V input voltage into four output voltages. These features complete the power-supply requirements of large screen LCD panels. The step-up converter provides source voltages  $V_S$  and the step-down converter provides logic voltage for the system. The dual charge pumps independently generate adjustable regulated output voltages VGL and VGH to bias the LCD. These four blocks operate with a fixed switching frequency of 500kHz or 750kHz.

Both step-up and step-down converters operate in asynchronous switch mode. Current mode control provides fast transient response and eases loop stabilization. Fault protection includes cycle-by-cycle current limit, thermal shutdown, overvoltage protection of the step-up converter and short-circuit protection of the step-down converter.

Current mode control is used for both charge pumps to regulate its output voltage, which minimizes output ripple and capacitor sizes.

The G5561A is available in an 28-pin TSSOP package.

### Applications

- TFT LCD Displays

### Ordering Information

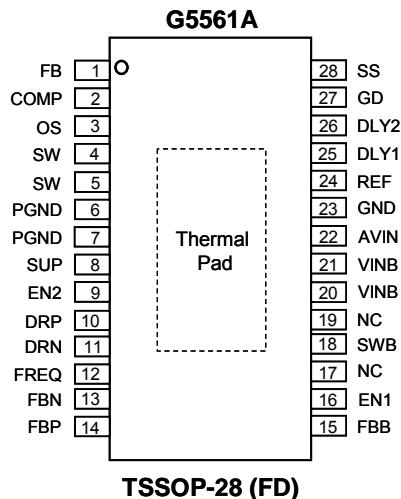
ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE (Green)
G5561AF41U	G5561A	-40°C~ +85°C	TSSOP-28 (FD)

Note: F4: TSSP-28 (FD)

1: Bonding Code

U: Tape & Reel

### Pin Configuration



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

## Quad-Output TFT LCD Bias DC-DC Converter

### Features

- 8V to 14V Input Voltage Range
- $V_S$  Output Voltage Range up to 19 V
- 1% Accurate Boost Converter with 3A Switch Current
- 2% Accurate 2.3A Step-Down Converter
- 500kHz/750kHz Fixed Switching Frequency
- 150mA Negative Charge Pump Driver for VGL
- 150mA Positive Charge Pump Driver for VGH
- Adjustable Sequencing for VGL, VGH
- Gate Drive Signal to Drive External MOSFET
- Internal and Adjustable Soft Start
- Cycle-by-Cycle Over Current Protection
- Short-Circuit Protection
- Overvoltage Protection
- Thermal Shutdown
- Available in TSSOP-28 Package

### General Description

The G5561B DC-DC converter provides regulated voltages required by thin-film transistor (TFT) liquid crystal displays (LCD) panels in TSSOP package. One step-up converter, one step-down converter, and two charge pumps convert the 8V to 14V input voltage into four output voltages. These features complete the power-supply requirements of large screen LCD panels. The step-up converter provides source voltages  $V_S$  and the step-down converter provides logic voltage for the system. The dual charge pumps independently generate adjustable regulated output voltages VGL and VGH to bias the LCD. These four blocks operate with a fixed switching frequency of 500kHz or 750kHz.

Both step-up and step-down converters operate in asynchronous switch mode. Current mode control provides fast transient response and eases loop stabilization. Fault protection includes cycle-by-cycle current limit, thermal shutdown, overvoltage protection of the step-up converter and short-circuit protection of the step-down converter.

Current mode control is used for both charge pumps to regulate its output voltage, which minimizes output ripple and capacitor sizes.

The G5561B is available in an 28-pin TSSOP package.

### Applications

- TFT LCD Displays

### Ordering Information

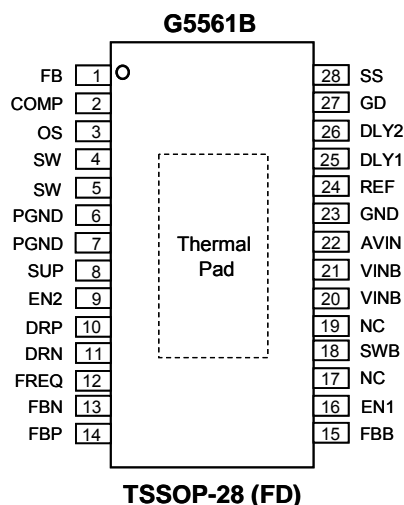
ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE (Green)
G5561BF41U	G5561B	-40°C~ +85°C	TSSOP-28 (FD)

Note: F4: TSSP-28 (FD)

1: Bonding Code

U: Tape & Reel

### Pin Configuration



Recommend connecting the Thermal Pad to the Ground for excellent power dissipation.