

## TFT-LCD DC/DC Converter with Operational Amplifiers

### Features

- 2.5V to 5.5V Input Supply Range
- 1.2MHz Current Mode Boost Converter
  - ◆ Fast Transient Response
  - ◆ 1.6% Accurate Output Voltage
  - ◆ 18V/2.5A, 0.16Ω n-channel MOSFET
  - ◆ 91% High Efficiency
- Linear-Regulator Controllers for  $V_{GON}$  and  $V_{GOFF}$
- High-Performance Operational Amplifiers
  - ◆ ±150mA Output Short-Circuit Current
  - ◆ 12V/μs Slew Rate
  - ◆ 12MHz, -3dB Bandwidth
  - ◆ Rail-to-Rail Input and Outputs
- Internal Soft Start
- Logic-Controller, High-Voltage Switch with Adjustable Delay
- Multiple Overload Protection
- Thermal Shutdown
- Small 32-pin 5mmX5mm TQFN package

### Applications

- LCD Monitor Panels
- Notebook Computer Displays
- LCD TVs

### General Description

The G5519 includes a high-performance boost converter, two linear-regulator controllers, and high current operational amplifiers for TFT-LCDs. Also included is a logic controlled, high-voltage switch with adjustable delay.

The boost converter provides the regulated supply voltage for the panel source driver ICs. It is a high-frequency (1.2MHz) current-mode regulator with an integrated 18V n-channel MOSFET that allows the use of ultra-small inductors and ceramic capacitors. It provides fast transient response to pulsed loads while achieving efficiencies over 86%.

Using external low-cost transistors, the linear-regulator controllers provide tight regulation  $V_{GON}/V_{GOFF}$  for the panel gate drivers with fault protection.

The operational amplifier are ideal for  $V_{COM}$  and  $V_{GAMMA}$  applications. They features high output current (±150mA), fast slew rate (12V/μs), wide bandwidth (12MHz), and rail-to-rail inputs and outputs.

The G5519 is available in a 32-pin TQFN package for ultra-thin LCD panels.

### Ordering Information

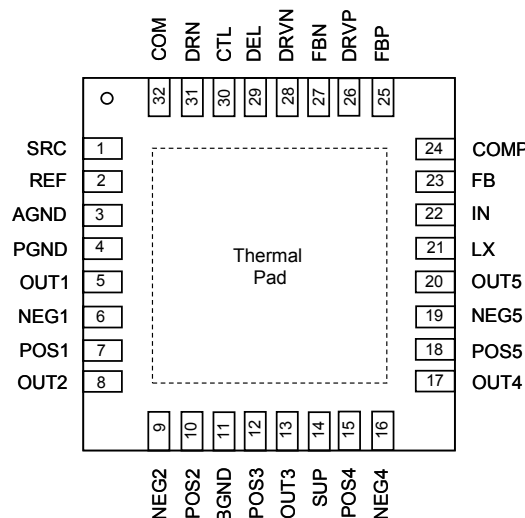
ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE (Green)
G5519RA1U	5519	-40°C to +85°C	TQFN5X5-32

Note: RA: TQFN5X5-32

Bonding Code: 1

U: Tape & Reel

### Pin Configuration



**G5519 TQFN5X5-32**

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