

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

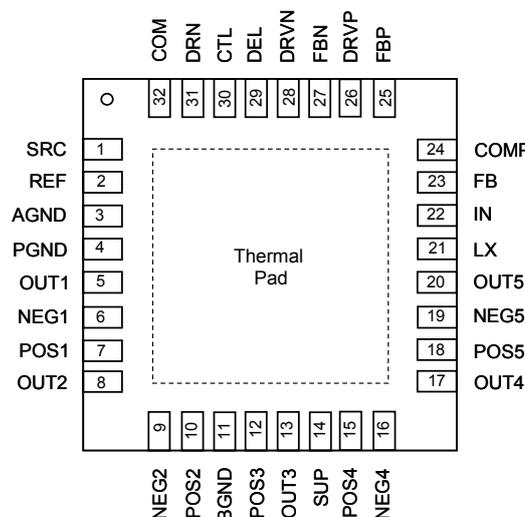
ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE (Green)
G5519RA1U	5519	-40°C to +85°C	TQFN5X5-32

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.