

ISL98602

5 Channel DC/DC Converter + V_{ON} Slice + Power Good

FN7699
Rev 3.00
March 7, 2012

The ISL98602 represents a high-power, integrated LCD supply IC targeted at large panel LCD displays. The ISL98602 integrates a high-power boost converter for AVDD generation, V_{ON} and V_{OFF} charge pump drivers, one synchronous buck regulator, and one synchronous buck controller for two logic voltages. The V_{ON} slicing circuitry and power good function are also included.

Operating at 1.3MHz, the AVDD boost converter features a 5.5A boost FET. Feedback is taken from the far side of the delay FET for improving regulation. The OVP circuit protects output side components.

The logic synchronous buck converter features two 2.3A FETs operating at 1.3MHz internal clock. The output voltage is set by the IC internally or with a feedback resistor. The soft-start circuitry is also integrated with the buck.

The second logic voltage is generated from a synchronous buck converter with MOSFET controllers. The overcurrent protection is also integrated with the buck.

The charge pump of V_{ON} and V_{OFF} uses the full switching frequency and integrates the driver for high current capability. V_{ON} is further processed through an integrated V_{ON} slice circuit in order to reduce flicker.

Alternative fixed voltages at the boost, Buck1, Buck2, V_{ON} charge pump, and V_{OFF} charge pump are available in ISL98602.

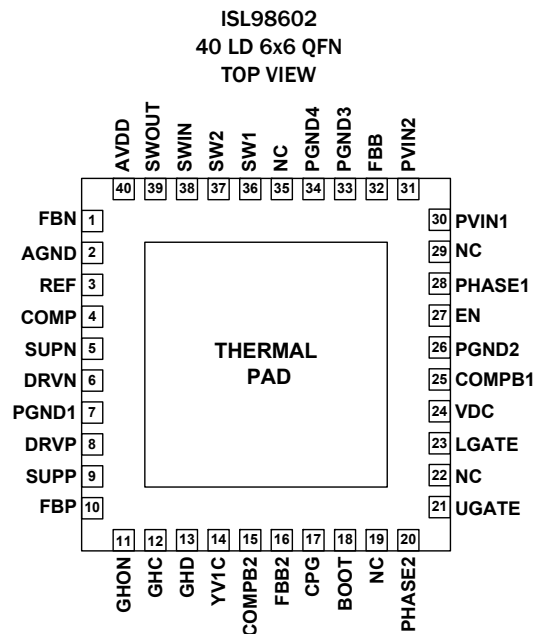
Features

- 9.5V to 15.0V Input Supply
- 1.3MHz Switching Frequency
- 5.5A Integrated Boost for Up to 19V A_{VDD}
- V_{ON} Charge Pump, Up to 36V and 120mA
- V_{OFF} Charge Pump, Down to -10V and 120mA
- Synchronous Buck1 for 3.3V/2.5V with 2.0A Peak FET
- Synchronous Buck2 Controller Output from 0.9V to 2.0V
- On-board AVDD Delay Switch
- V_{ON} Slice Function Integrated
- Power Good Function for TCON Enable
- Automatic Start-Up Sequencing
- UVLO, UVP, OVP, OCP, and OTP Protection
- 40 Ld 6x6 QFN
- Specified for Ambient Operation Over the -40°C to +85°C Temperature Range
- Pb-Free (RoHS Compliant)

Applications

- LCD TV

Pin Configuration



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