

# 5 Channel DC/DC Converter + V<sub>ON</sub> Slice + Power Good

## ISL98602

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<sub>ON</sub> and V<sub>OFF</sub> charge pump drivers, one synchronous buck regulator, and one synchronous buck controller for two logic voltages. The V<sub>ON</sub> 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<sub>ON</sub> and V<sub>OFF</sub> uses the full switching frequency and integrates the driver for high current capability. V<sub>ON</sub> is further processed through an integrated V<sub>ON</sub> slice circuit in order to reduce flicker.

Alternative fixed voltages at the boost, Buck1, Buck2, V<sub>ON</sub> charge pump, and V<sub>OFF</sub> charge pump are available in ISL98602.

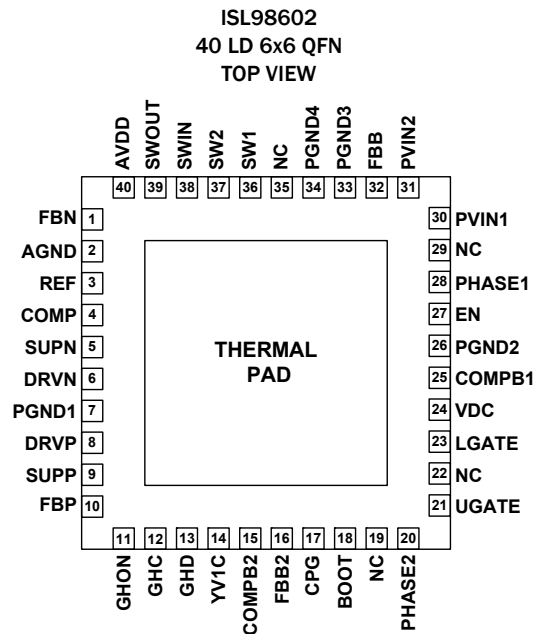
## Features

- 9.5V to 15.0V Input Supply
- 1.3MHz Switching Frequency
- 5.5A Integrated Boost for Up to 19V A<sub>VDD</sub>
- V<sub>ON</sub> Charge Pump, Up to 36V and 120mA
- V<sub>OFF</sub> 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<sub>ON</sub> 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



For additional products, see [www.intersil.com/product\\_tree](http://www.intersil.com/product_tree)

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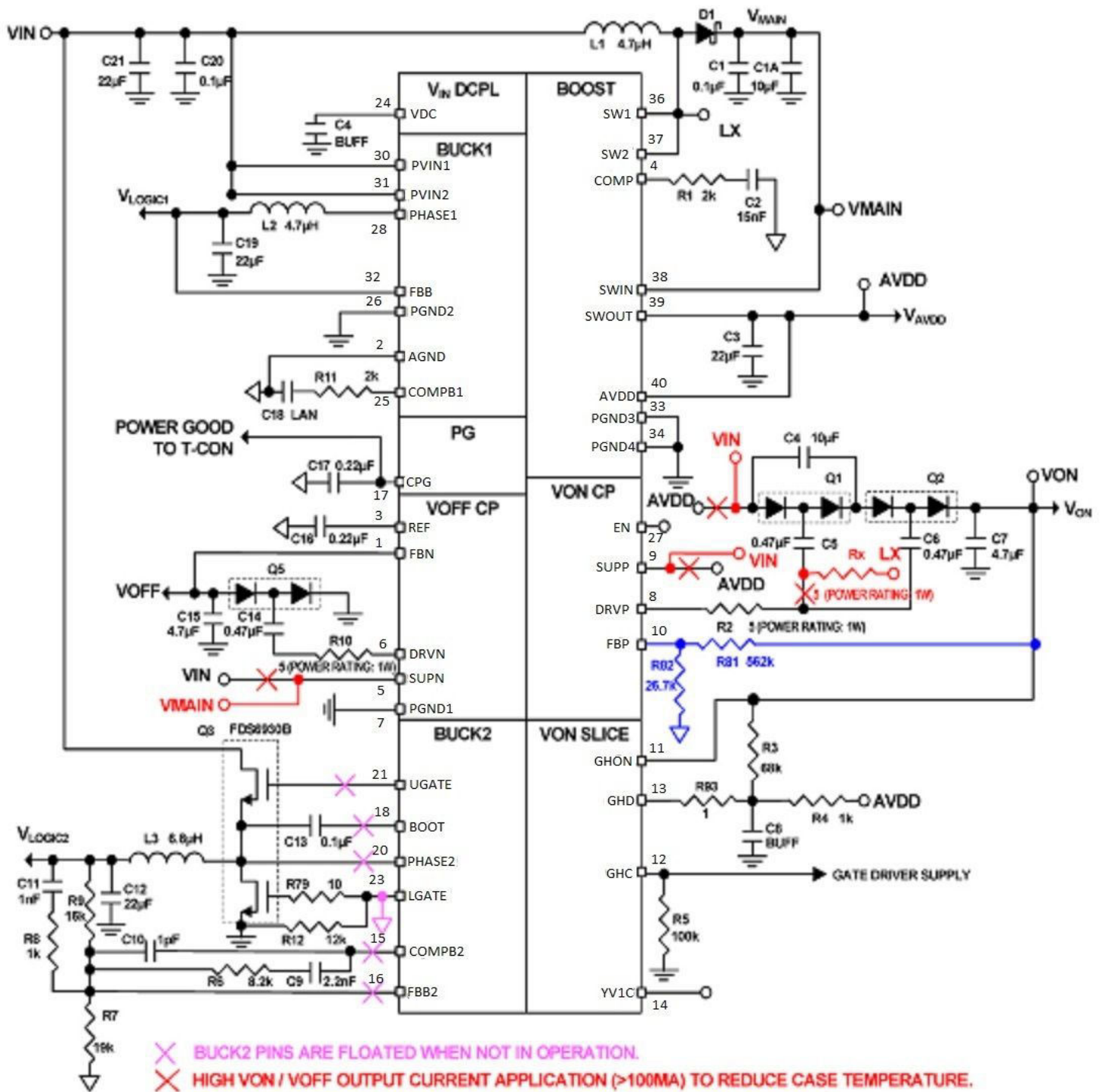
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# Typical Diagram



- ✗ BUCK2 PINS ARE FLOATED WHEN NOT IN OPERATION.
- ✗ HIGH VON / VOFF OUTPUT CURRENT APPLICATION (>100MA) TO REDUCE CASE TEMPERATURE.
- EXAMPLE OF EXTERNAL FEEDBACK OPTION SHOWN ON V<sub>ON</sub> IN BLUE. SIMILAR FLEXIBILITY IS AVAILABLE FOR AVDD, V<sub>LOGIC1</sub>, AND VOFF. PLEASE CONTACT INTERSIL MARKETING FOR THE EXTERNAL FEEDBACK OPTION.