

## Device Information

### ISL98602

[Print Page](#)

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

- [Features Description](#)
- [Technical Documentation](#)
- [Pricing / Samples](#)
- [iSim Design Simulation](#)
- [Tools And Support](#)
- [Related Devices](#)

#### Datasheet



#### ISL98602

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

|                              |  |
|------------------------------|--|
| Input Voltage (V)            | 9.5 to 15  |
| V <sub>BOOST</sub> (V)       | 10.83 to 19  |
| Boost Current Limit (A)      | 5.5  |
| V <sub>ON</sub> (V)          | up to 36   |
| V <sub>OFF</sub> (V)         | down to -10  |
| V <sub>LOGIC</sub> (V)       | (V <sub>logic1</sub> ) 2.5 to 3.3<br>(V <sub>logic2</sub> ) 0.9 to 2.0 |
| # of V <sub>COM</sub>        | N/A  |
| # of Gamma                   | N/A  |
| Features                     | Automatic Start-Up Sequencing, fault protection                        |
| Input Voltage (min) (V)      | 9.5  |
| Input Voltage (max) (V)      | 15   |
| V <sub>BOOST</sub> (min) (V) | 10.83  |
| V <sub>BOOST</sub> (max) (V) | 19   |
| V <sub>ON</sub> (min) (V)    | *  |
| V <sub>ON</sub> (max) (V)    | 36   |
| V <sub>OFF</sub> (min) (V)   | -10  |
| V <sub>OFF</sub> (max) (V)   | *  |
| V <sub>LOGIC</sub> (min) (V) | 2.5, 0.9   |
| V <sub>LOGIC</sub> (max) (V) | 3.3, 2   |

#### Product Information

##### Key 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)

##### Description

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  $V_{ON}$  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; please contact Intersil Marketing via e-mail at [rmonteir@intersil.com](mailto:rmonteir@intersil.com).

## Pricing / Packaging / Samples / Ordering






















 iBuy direct from Intersil

 iBuy direct - out of stock

 Request samples

 Check distributor inventory

 Available in RoHS/Pb-Free

| Part No.          | Design-In Status | Temp. | Package       | MSL | Price US \$ |    |    |   |
|-------------------|------------------|-------|---------------|-----|-------------|---|---|--|
| ISL98602IRAAZ     | Active           | Ind   | 40 Ld QFN     | 3   | 2.50        |    |    |   |
| ISL98602IRAAZ-T   | Active           | Ind   | 40 Ld QFN T+R | 3   | 2.50        |    |    |  |
| ISL98602IRAAZ-T7A | Active           | Ind   | 40 Ld QFN T+R | 3   | 2.75        |    |    |  |
| ISL98602IRAAZ-TK  | Active           | Ind   | 40 Ld QFN T+R | 3   | 2.50        |    |    |  |
| ISL98602IRABZ     | Active           | Ind   | 40 Ld QFN     | 3   | 2.50        |   |   |  |
| ISL98602IRABZ-T   | Active           | Ind   | 40 Ld QFN T+R | 3   | 2.50        |  |  |  |
| ISL98602IRABZ-T7A | Active           | Ind   | 40 Ld QFN T+R | 3   | 2.75        |  |  |  |
| ISL98602IRABZ-TK  | Active           | Ind   | 40 Ld QFN T+R | 3   | 2.50        |  |  |  |

The price listed is the manufacturer's suggested retail price for quantities of 1K units. However, prices in today's market are fluid and may change without notice.

MSL = Moisture Sensitivity Level - per IPC/JEDEC J-STD-020

SMD = Standard Microcircuit Drawing

## Technical Documentation

Datasheet(s):

 [5 Channel DC/DC Converter +  \$V\_{ON}\$  Slice + Power Good](#)

Technical Homepage:

[Display Products](#)

## Tools And Support

### iSim Design Simulation

No Models Available

### Application Block Diagrams

[LCD-TV Panel](#)

### Applications

LCD TV

### Related Devices

[EL7515](#) High Frequency PWM Step-Up Regulator

[EL7520](#) 4-Channel DC/DC Controller

 [Parametric Table](#)

|           |   |
|-----------|---|
| EL7520A   | 4-Channel DC/DC Controller  |
| EL7581    | 3-Channel DC/DC Converter   |
| EL7583    | 3-Channel DC/DC Converter   |
| EL7586    | TFT-LCD Power Supply  |
| EL7586A   | TFT-LCD Power Supply  |
| EL7640    | TFT-LCD DC/DC with Integrated Amplifiers                                  |
| EL7640A   | TFT-LCD DC/DC with Integrated Amplifiers                                  |
| EL7641    | TFT-LCD DC/DC with Integrated Amplifiers                                  |
| EL7641A   | TFT-LCD DC/DC with Integrated Amplifiers                                  |
| EL7642    | TFT-LCD DC/DC with Integrated Amplifiers                                  |
| EL7642A   | TFT-LCD DC/DC with Integrated Amplifiers                                  |
| ISL78010  | Automotive Grade TFT-LCD Power Supply                                     |
| ISL78020  | Automotive Grade TFT-LCD DC/DC with Integrated Amplifiers                 |
| ISL78022  | Automotive Grade TFT-LCD DC/DC with Integrated Amplifiers                 |
| ISL97516  | 600kHz/1.2MHz PWM Step-Up Regulator                                       |
| ISL97519  | 1% Output Accuracy 600kHz/1.2MHz PWM Step-Up Regulator                    |
| ISL97519A | 600kHz/1.2MHz PWM Step-Up Regulator                                       |
| ISL97522  | 4-Channel TFT-LCD Supply  |
| ISL97536  | Monolithic 1A Step-Down Regulator with Low Quiescent Current              |
| ISL97642  | TFT-LCD DC/DC with Integrated Amplifiers                                  |
| ISL97645  | Boost + $V_{ON}$ Slice + $V_{COM}$  |
| ISL97645A | Boost + $V_{ON}$ Slice + $V_{COM}$ + Reset                                |
| ISL97646  | Boost + LDO + $V_{ON}$ Slice + $V_{COM}$                                  |
| ISL97649A | TFT-LCD Supply + DCP + $V_{COM}$ Amplifier + Gate Pulse Modulator + RESET |
| ISL97649B | TFT-LCD Supply + DCP + $V_{COM}$ Amplifier + Gate Pulse Modulator + RESET |
| ISL97650  | 4-Channel Integrated LCD Supply   |
| ISL97650B | 4-Channel Integrated LCD Supply   |
| ISL97651  | 4-Channel Integrated LCD Supply   |
| ISL97652  | 4-Channel Integrated LCD Supply with Dual $V_{COM}$ Amplifiers            |
| ISL97653A | 5-Channel Integrated LCD Supply   |
| ISL97656  | Integrated 4A Switch PWM Step-Up Regulator                                |
| ISL98012  | 1.8V Input PWM Step-Up Regulator  |
| ISL98603  | 5 Channel DC/DC Converter + $V_{ON}$ Slice + Power-Good                   |