

ISL91302B

Dual/Single Output Power Management IC

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The [ISL91302B](https://www.renesas.com/en/products/power-management-integrated-circuits/isl91302b) is a highly efficient, dual or single output, synchronous multiphase buck switching regulator that can deliver up to 5A per phase continuous output current. The ISL91302B features four integrated power stages and has the capability to assign its power stages to either output. This flexibility allows seamless design-in for a wide range of applications where dual, triple, or quad phase outputs are needed, such as CPU and GPU core power mobile applications.

The ISL91302B features integrated low ON-resistance MOSFETs, programmable PWM frequency, and automatic diode emulation, which maximizes efficiency while minimizing the external component count and solution size.

Using Renesas’s proprietary R5 modulator technology, the ISL91302B delivers a highly robust power solution capable of ultra-fast transient response, excellent loop stability, and seamless DCM/CCM transitions without requiring external compensation.

The ISL91302B is widely configurable through the factory OTP settings. Available features which can be used include:

- SPI or I<sup>2</sup>C interface
- External signal telemetry with an internal ADC
- Dynamic Voltage Scaling (DVS) with selectable slew rate

Please contact [support](#) for additional configurations.

**Related Literature**

For a full list of related documents, visit our website

- [ISL91302B](https://www.renesas.com/en/products/power-management-integrated-circuits/isl91302b) product page

**Features**

- Dual output 3+1 or 2+2, or single output 4-phase
- 2.5V to 5.5V supply voltage
- 5A per phase output current capability
- Small solution size (7x10 mm<sup>2</sup>)
  - 4 phase design requires only 12 components
- High efficiency (94% peak)
- Low I<sub>Q</sub> in low power mode
- Supports 50A/μs per phase transients with <150μF nominal output capacitance
- Voltage, current, and temperature telemetry through integrated ADC plus auxiliary inputs
- ±0.7% system accuracy with remote voltage sensing
- OTP Programmable PWM frequency from 2MHz to 6MHz
- I<sup>2</sup>C and SPI programmable output from 0.3V to 2.0V
- Independent Dynamic Voltage Scaling (DVS) for each output
- Soft-start and fault detection (UV, OV, OC, OT), short circuit protection
- 2.551mm x 3.670mm 54 ball WLCSP with 0.4mm pin pitch

**Applications**

- Smart phones, tablets
- FPGA and ASIC power
- Industrial MPU power
- Human machine interface

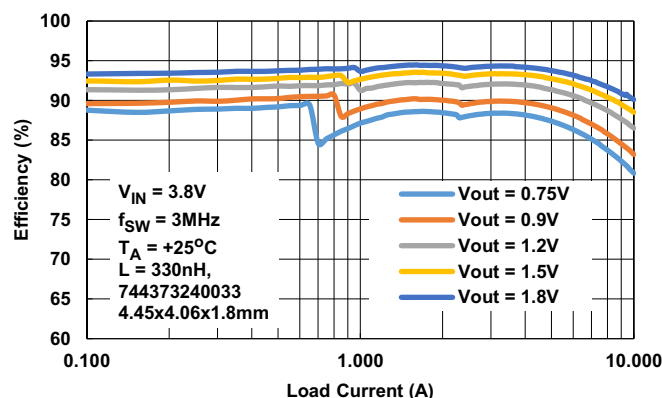


Figure 1. 2-Phase Configuration Efficiency

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