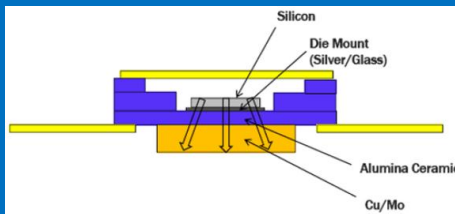


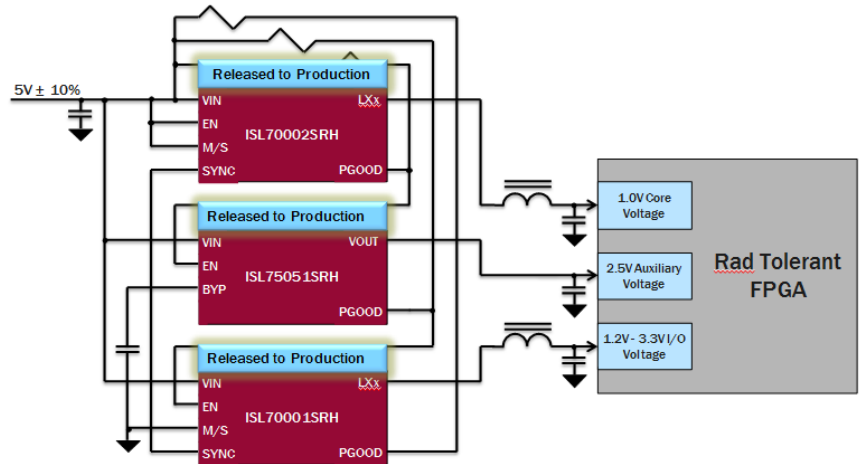
Thermally enhanced Packages

- Additional thermally conductive heat pad
 - ISL70001SEH: 9mm x 9mm
 - ISL70002SEH: 10mm x 10mm
 - ISL70003SEH: 10mm x 10mm
- Cu30%/Moly70% Floating pad
- Improved thermal resistance (θ_{JC})
 - 48ld: 3°C/W -> 1.3°C/W
- New Part Numbers:
 - ISL70001SEHVFE (48ld CQFP)
 - ISL70002SEHVFE (64ld CQFP)
 - ISL70003SEHVFE (64ld CQFP)
- QML Qualified per MIL-PRF-38535



How to power FPGAs with Intersil

Below full Intersil solution to Power FPGAs with POLs and LDOs



ISL75051SRH 3A LDO

The ISL75051SRH is a radiation hardened low-voltage, high-current, single-output LDO specified for up to 3.0A of continuous output current. These devices operate over an input voltage range of 2.2V to 6.0V and are capable of providing output voltages of 0.8V to 5.0V adjustable based on resistor divider setting. Dropout voltages as low as 65mV can be realized using the device. The OCP pin allows the short circuit output current limit threshold to be programmed by means of a resistor from the OCP pin to GND.



The OCP setting range is from 0.5A minimum to 8.5A maximum. The resistor sets the constant current threshold for the output under fault conditions. The thermal shutdown disables the output if the device temperature exceeds the specified value. It subsequently enters an ON/OFF cycle until the fault is removed. The ENABLE feature allows the part to be placed into a low current shutdown mode that typically draws about 1µA. When enabled, the device operates with a typical low ground current of 11mA, which provides for operation with low quiescent power consumption.

The device is optimized for fast transient response and single event effects. This reduces the magnitude of SET seen on the output. Additional protection diodes and filters are not needed. The device is stable with tantalum capacitors as low as 47µF and provides excellent regulation all the way from no load to full load. Programmable soft-start allows the user to program the inrush current by means of the decoupling capacitor value used on the BYP pin.

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ISL70001SRH 6A POL

The ISL70001SRH is a radiation hardened and SEE hardened high efficiency monolithic synchronous buck regulator with integrated MOSFETs. This single chip power solution operates over an input voltage range of 3V to 5.5V and provides a tightly regulated output voltage that is externally adjustable from 0.8V to ~85% of the input voltage. Output load current capacity is 6A for $T_j < +145^\circ\text{C}$.

New ITAR free Intersil Components

ISL70218SEH (Precision Dual OpAmp)
ISL70227SEH (Precision Dual OpAmp)
ISL70417SEH (Precision Quad OpAmp)
ISL71090SEH (Voltage Reference)

Other New Intersil Components

ISL70444SEH (Precision Quad OpAmp)
ISL71590SEH (Temperature Sensor)

Intersil Components Coming soon

ISL70244SEH (Precision Dual OpAmp)
ISL75052SEH (LDO)
ISL70003SEH (POL for DDR)

If you are interested in more Information on the above mentioned parts, please let us know.

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85521 Ottobrunn-Riemerling

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<http://www.protec-semi.de>

Telefon: 089/6602923

The ISL70001SRH utilizes peak current-mode control with integrated compensation and switches at a fixed frequency of 1MHz. Two ISL70001SRH devices can be synchronized 180° out-of-phase to reduce input RMS ripple current. These attributes reduce the number and size of external components required, while providing excellent output transient response. The internal synchronous power switches are optimized for high efficiency and good thermal performance.

The chip features a comparator type enable input that provides flexibility. It can be used for simple digital on/off control or, alternately, can provide under voltage lockout capability by using two external resistors to precisely sense the level of an external supply voltage.

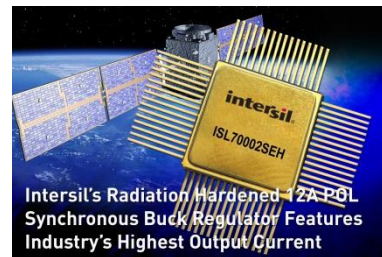
A power-good signal indicates when the output voltage is within $\pm 11\%$ typical of the nominal output voltage.

Regulator start-up is controlled by an analog soft-start circuit, which can be adjusted from approximately 2ms to 200ms by using an external capacitor. The ISL70001SRH incorporates fault protection for the regulator. The protection circuits include input under voltage, output under voltage, and output overcurrent.

High integration makes the ISL70001SRH an ideal choice to power many of today's small form factor applications. Two devices can be synchronized to provide a complete power solution for large scale digital ICs, like field programmable gate arrays (FPGAs), that require separate core and I/O voltages.

ISL70002SEH 12A POL with Current Share

The ISL70002SEH is a radiation hardened and SEE hardened high efficiency monolithic synchronous buck regulator with integrated MOSFETs. This single chip power solution operates over an input voltage range of 3V to 5.5V and provides a tightly regulated output voltage that is externally adjustable from 0.8V to $\sim 85\%$ of the input voltage. Output load current capacity is 12A for $T_j \leq +150^\circ\text{C}$. Two ISL70002SEH devices configured to current share can provide 19A total output current, assuming $\pm 27\%$ worst-case current share accuracy.



The ISL70002SEH utilizes peak current-mode control with integrated error amp compensation and pin selectable slope compensation. Switching frequency is also pin selectable to either 1MHz or 500kHz. Two ISL70002SEH devices can be synchronized 180° out-of-phase to reduce input RMS ripple current.

Two devices can be synchronized to provide a complete power solution for large scale digital ICs, like field programmable gate arrays (FPGAs), that require separate core and I/O voltages.