Voltage Regulators Intended for Space Applications

International Rectifier today introduced the first in a series of high current, ultra-low dropout (ULDO) RAD-Hard hybrid linear voltage regulators for space applications including satellites and launch vehicles.

The space level screened devices, designed for point-of-load and post DC-DC power conversion, offer a low dropout voltage of only 0.4 V at full 3 A load. The new regulators feature a Silicon On Insulator (SOI) CMOS Regulator IC, latch-up and SEU immunity, as well as outstanding TID and ELDRS testing in excess of 100 Krad with negligible effect on regulation tolerance. In addition, the devices provide fast transient response, timed latch-off over-current protection and internal thermal protection, and on/off control via shutdown pin.

“Leveraging IR’s extensive heritage in the military and space market sectors, IR has developed an innovative control IC and bypass transistor for the new ULDO family, resulting in significant performance improvements over alternative solutions, making them well suited for use in power-restricted applications requiring high density,” said Michael Toland, marketing manager for IR’s HiRel Business Unit.

“In addition to benefiting from shorter lead times, customers receive enhanced support as a result of our comprehensive understanding of the functionality of the components in these products to minimize issues such as gain and phase margin stability,” he added.

The new ULDO devices’ adjustable regulators provide output voltages as low as 0.8 V compatible with the newer FPGA used in space equipment.

Specifications

Part Number	V_{IN} (V)	V_{OUT} (V)	I_{OUT} (A)	Package
RUH330118AK	3.3	1.8	3	3-Lead Flat Pack
RUH330118AP	3.3	1.8	3	3-Lead Flat Pack
RUH330125AK	3.3	2.5	3	3-Lead Flat Pack
RUH330125AP	3.3	2.5	3	3-Lead Flat Pack
RUH330133AK	3.3	3.3	3	3-Lead Flat Pack
RUH330133AP	3.3	3.3	3	3-Lead Flat Pack
RUH3301A1AK	3.3	ADJ	3	3-Lead Flat Pack
RUH3301A1AP	3.3	ADJ	3	3-Lead Flat Pack
RUH3301A2AK	3.3	ADJ	3	3-Lead Flat Pack
RUH3301A2AP	3.3	ADJ	3	3-Lead Flat Pack

Datasheets, TID radiation report and an application note within the datasheet are available on the International Rectifier website at www.irf.com [1].

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[1] http://www.irf.com/