DC-DC voltage regulators designed for space applications

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

The new Defense Logistics Agency (DLA), Land and Maritime certified voltage regulators are also included in IR's Radiation Hardness Assurance (RHA) program certified by DLA Land and Maritime division (formerly DSCC) that guarantees the devices' radiation performance down to the component level.

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. They are available in two industry standard package styles, a 5-pins MO-078AA and an 8-pins flat pack, each with multiple lead bend options. The new regulators feature a Silicon

On Insulator (SOI) CMOS Regulator IC, latch-up and SEU immunity with LET of 84 MeV.cm^2/mg, as well as outstanding TID rating of 300 Krad(Si) and ELDRS testing in excess of 100 Krad(Si) 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.

“In addition to offering DLA-certification, these voltage regulators using a standard microcircuit drawing (SMD) part number are included in IR’s RHA program to offer customers a highly reliable, government approved solution. The new devices augment IR’s space hybrid product line and complement our DC-DC converters to provide a one-stop power management solution supplier for the space community,” said Tiva Bussarakons, Marketing Director for IR’s HiRel DC-DC Converter Products.

Design analyses including worst case (WCA), electrical stress, thermal, stability with respect to additional output capacitors, and DFMEA are available at no-charge for standard models.

Product Overview

Part Number*	DLA SMD Number*	Description
IRUH3301A1xK	5962F1023501KxA	3.3V input, adjustable output (0.8V min
IRUH3301A2xK	5962F1023502KxA	5.0V input, adjustable output (0.8V min
IRUH330118xK	5962F1023503KxA	3.3V input, 1.8V fixed output
IRUH330125xK	5962F1023504KxA	3.3V input, 2.5V fixed output
IRUH330133xK	5962F1023505KxA	5.0V input, 3.3V fixed output

Availability and pricing

Pricing starts from US $964 each in mid-volume quantities. Flight models are available immediately. Prices are subject to change. This product is subject to U.S. export control laws and regulations.

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