

Teledyne e2v HiRel Expands its Microelectronics Portfolio by Unveiling New, Fully Integrated Point-of-Load Converter Modules for Space Applications

The TD5 Series of DC-DC converter module components are space-qualified, rad-tolerant, and simplify the design process

MILPITAS, CA – October 15, 2018 – [Teledyne e2v HiRel Electronics](#), part of the [Teledyne Defense Electronics Group](#), today announced new, integrated module capabilities for demanding space and satcom applications. This ‘plug and play’ option has no external passive components, and is the newest product innovation from e2v HiRel’s rapidly expanding microelectronics operations.

The new designs are embedded in the TD5 Series, a family of point-of-load DC-DC converter modules engineered specifically for harsh radiation environments which require low voltages and tight regulation.

The modules cover an input voltage range of 4.6 to 6.0V and are available in 2, 6, and 10 A output surface-mount options. Where conventionally a designer implementing regulated voltage conversion for a space application would be required to choose, specify, purchase and inventory up to a dozen space-qualified passive components to achieve a complete solution, this new integrated module removes those responsibilities and costs, simplifying design, implementation and reducing time to market.

The TD5 Series uses the Teledyne/Psemi PE9915X family of radiation tolerant synchronous buck regulators to provide high power density, fast transient response, and up to 90% efficiency. The PE9915X are characterized for Total Ionizing Dose (TID) of 100krad (Si). The Single Event Effects (SEE) performances for the PE9915X die are >90 MeV-cm²/mg.

“The high radiation tolerance of the TD5 Series is powered by the Psemi patented UltraCMOS® technology,” said Hector Rivera Integrated Solutions Product Line Manager for Teledyne e2v HiRel. “The product design provides a plug and play option for the designers of modern space digital electronics, which is especially important as digital power rail tolerances continue to shrink.”

Additional features of the TD5 Series include power good signal and shutdown pin for power sequencing. Full power operation of the TD5 Series is rated for -40° C to +85° C. [Click here to view the datasheet](#) and more information.

“Space systems have increased the use of digital processing components that require low-voltage, tightly regulated point of load converters,” explained Mont Taylor, VP of Business Development for Teledyne e2v HiRel. “Bottom line, this new module family greatly simplifies the job of space designers. This new capability showcases our growing footprint in microelectronics design and production, and is owed in part to the decades of experience we have leveraged working with our Teledyne sister company, Teledyne Advanced Electronics Systems (AES). Engineering units of the TD5 series are available today.

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Media Contact:

Darek Porter, Director of Marketing

Teledyne Defense Electronics

(404)-368-9714 darek.porter@teledyne.com

