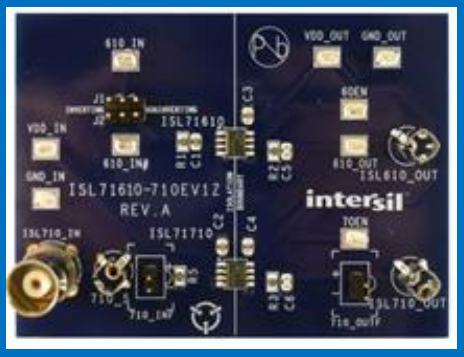
Protec GmbH
Vertrieb elektronischer Bauteile

RENESAS
BIG IDEAS FOR EVERY SPACE

SPACE COMPONENTS NEWSLETTER FEBRUARY 2019

AppNotes:

- GMR Isolation ➔ [download]
- Digital Isolation ➔ [download]



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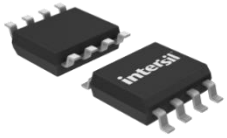
Intersil / Renesas Introduces Digital Isolators for Space Environments



Renesas' digital isolators aid in the design of discrete isolated power supply designs as well as isolated serial communications interfaces. There is a tremendous need for reliable isolator products in the satellite market. These isolators represent the highest data rate isolators available for radiation tolerant applications. Their isolation barrier is made using Giant Magneto Resistive (GMR) technology which provides superior isolation and radiation tolerance with lower dynamic current consumption; unlike transformer based isolator technology, there are no EMI concerns; and, GMR is superior to optocoupler based isolators, as the optics in the optocouplers are susceptible to “greying” or clouding over time due to radiation.

The ISL71610M and ISL71710M bring this isolation function to the customers in the space market, providing up to 600VRMS at 85 °C. The electrical specifications have been characterized over the temperature range of -55 °C to +125 °C. These products have been characterized for radiation performance up to 30krad(Si) for Total Ionizing Dose. The ISL71610M and ISL71710M have both been characterized for SEE up to LET 43MeV•cm2/mg.

Key Features

- The isolation barrier is made using Giant Magneto Resistive (GMR) technology
- Provides superior radiation performance, specifically for Singe Event Effects (SEE)
- The technology does not use a frequency matched transformer, resulting in lower EMI
- Allows for higher throughput and is the highest data rate in the space industry
- Fully radiation characterized for Low Dose Rate (TID) and SEL/SEB
- The ISL71610M can operate up to 100Mbps and the ISL71710M can operate up to 150Mbps

There are two main applications for these products

- Isolated Power Stages
- Isolated Serial Communications (CAN, RS-422, RS-485, SPI)

Evalboards and Samples are available now.