

RIC70115

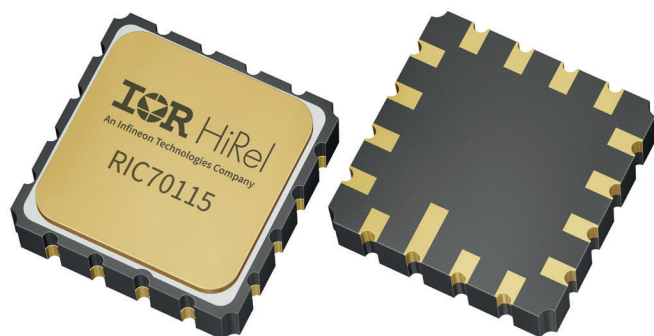
Radiation hardened gate-driver engineered for GaN HEMTs and logic level FETs in high- and low-side configurations

RIC70115 sets a new standard in space-grade power management, providing robust gate drive capabilities for extreme radiation environments. Designed for high reliability applications, RIC70115 is the only radiation hardened, Gallium Nitride (GaN)-based gate driver on the market supporting both high- and low-side configuration.

The RIC70115 offers flexible power options, supporting a tightly regulated 4.8 V drive voltage with a 5 V or 12 V source. With Single Event Effects (SEE) characterized to a Linear Energy Transfer (LET) of 81.9 MeV·cm²/mg and a Total Ionizing Dose (TID) of 100 krad(Si), RIC70115 is engineered to sustain reliable and robust electrical performance throughout mission lifetime. Available in a hermetically sealed 16-pin LCC package, the device operates across the full military ambient temperature range of -55°C to 125°C.

RIC70115 is optimized for driving both GaN HEMTs and logic-level Silicon (Si) FETs, such as Infineon HiRel's R8 rad hard MOSFETs, supporting both high-side and low-side configurations. The gate driver ensures safe operation independent of the bias voltage through an integrated linear regulator that provides optimal gate drive voltage across a wide bias range. The independent Miller Clamp and truly differential input (TDI) logic dramatically improve noise immunity, a crucial factor in the electrically noisy environment of a spacecraft. The device's integrated low dropout (LDO) regulator offers additional flexibility in power supply design.

Choose RIC70115 for satellite bus and payload applications, such as within power conditioning units, power distribution units, and DC-DC converters. RIC70115EVAL1, the device's evaluation board, is available now. RIC70115 is planned for electrical screening and qualification to MIL-PRF-38535, Class V.



16-pin LCC

Key features

- Wide supply voltage range of 4.75 V to 15 V
- Regulated 4.8 V drive voltage
- Source current of 1.5 A
- Sink current of 2.5 A
- Low matching propagation delay 2.9 ns (abs max)
- TID of 100 krad(Si)
- SEE: SEL, SEB, SEGR free and SET characterized up to LET 81.9 MeV·cm²/mg

Benefits

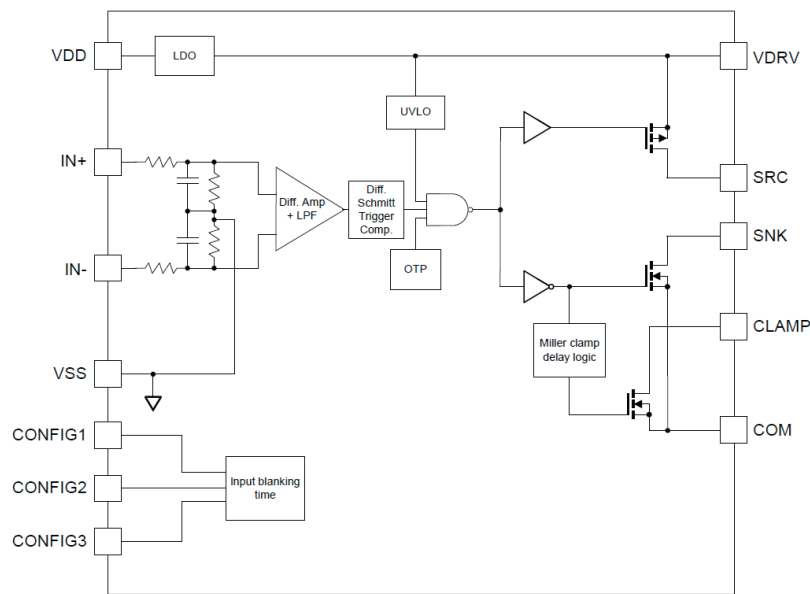
- Integrated low dropout (LDO) regulator
- Separate source and sink pins
- Dedicated Miller Clamp pin
- Dedicated gate drive return COM pin
- Truly differential input logic

Potential applications

- Satellite bus and payload
- Power conditioning unit
- Power distribution unit
- DC-DC converter

PRODUCT BRIEF

The RIC70115 delivers robust switching performance tailored for high-speed electronic payloads and advanced FPGA interfaces, driving both GaN HEMTs and logic-level Si FETs. By combining flexible power architecture with best-in-class rad hard engineering, the gate driver ensures optimal efficiency across modern power designs and reliable operation in complex electronic systems.



Ordering information

Orderable part number	Package type	Device level	Total ionizing dose level
5962R2420701Vxx	16-pin LCC	Level V _{1,3}	100 krad(Si)
RIC70115G	16-pin LCC	COTS ₂	
RIC70115EVAL1	Evaluation board		

¹ Per MIL-PRF-38535

² Intended for engineering evaluation only, devices are only tested at 25°C and for hermeticity

³ MIL-PRF-38535 QMLV certification pending

Published by
International Rectifier HiRel
Products, Inc.
An Infineon Technologies Company
El Segundo, California 90245 USA

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Public

Date: 5/2026



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