



PS4157N

Low R_{ON} , 2:1 SPDT Switch for Negative Signal/Power Rails with 1.8V Logic Control Simplifies PA Control

The DIODES™ PS4157N is a single-channel, bidirectional, single-pole double-throw (SPDT) switch that operates with a -4V to -12V negative supply voltage, making it suitable for switching RF amplifier bias voltages.

While the PS4157N supports negative voltages on its supply pin and the signal path, its logic input pin is controlled with a positive voltage. The logic input pin has 1.8V logic compatible thresholds allowing interface with typical control logic circuitry such as a GPIO signal.

Its low capacitance and wide 200MHz bandwidth also allow it to be used in negative voltage signal chain applications. The device's fast switching times and break-before-make characteristic allow it be used for dynamic PA control in 5G AAU applications.

The PS4157N operates across the extended industrial temperature range of -55°C to +125°C and is available in the SOT363 package.



The DIODES™ Advantage

Negative operating voltage SPDT analog switch for GaN PA control in 5G AAU applications.

- **Negative Operating Voltage Range for Bias/Enable Control in GaN Power Amplifiers/Transistors**
Designed for new GaN PA control in 5G AAU application
- **Low 3Ω ON-State Resistance**
Limits signal loss and degradation
- **1.8V Logic-Compatible Control Input Pin Enables Operation in Systems with 1.8 V I/O Rails**
Compatible with latest microprocessor/controller interface voltages, saving separate level shifter costs
- **Extended Industrial Temperature Range: -55°C to +125°C**
Designed for outdoor industrial instruments or equivalents, which need to work in high-temperature environments

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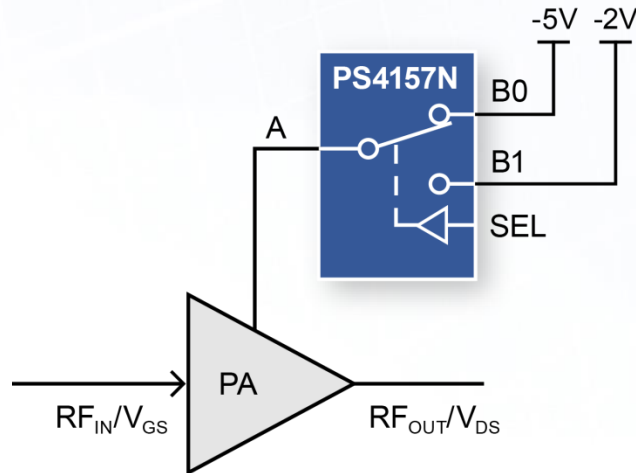
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Applications

- Analog and digital switching
- GaN power amplifier gate switching
- Remote radio units
- Active antenna units (AAU)
- Baseband units (BBU)

Typical Application Circuit



Key Electrical Characteristics

Part Number	Configuration	Signal Type	Rail To Rail	Type	Operating Voltage (V)	-3dB Bandwidth (MHz)	Isolation (COM-NC/O, NC-NO) (dB)	Crosstalk (Ch-Ch) (dB)	Package
PS4157N	1-Channel	Single-Ended	Yes	SPDT	-12V to -4V	200	-33	-42	SOT363

Ordering Information

Part Number	Package Code	Package	Moisture Sensitivity	Carrier	Quantity
PS4157NCEX	C	SOT363	MSL-1	7" Tape and Reel	3,000

Cross Reference

Competitor	Part Number	Package	Diodes Orderable Part Number	Type of Cross*
Texas Instruments	TMUX4157NDCKR	SC70-6	PS4157NCEX	Pin-to-Pin
onsemi	NLHV4157N	SC70-6	PS4157NCEX	Pin-to-Pin

*PP = Pin-to-Pin Replacement; Form, function, and electrical specifications are identical
PE = Pin Equivalent; Electrical specifications are not identical