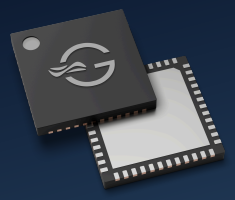
TAGORE

GaN T/R switch for cellular and IFF

TS8029N

A GaN transmit / receive switch for 100 W CW and over 630 W peak from 0.5 to 5 GHz in one 5 × 5 mm chip.



631 W
Peak power (100 W CW)

0.5–5 GHz
UHF to C-band

0.23 dB
TX insertion loss, 500–800 MHz

1.2 µs
Switching time

What it does for your design

- **Built for the highest peaks.** At least 631 W peak (58 dBm) at 1% duty cycle for LTE and 5G.
- **Fewer parts, low power signature.** PIN diode switches need a large bill of materials to generate their bias, and that bias draws power. Here it is built in, under 1 mW: ideal for secure communications that need a low power signature.
- **Low loss, high isolation.** 0.23 dB on transmit and 52 dB isolation to the receiver at 500 – 800 MHz.
- **Tune the isolation.** Tuning inductor pins let you place an isolation notch where you need it.
- **Use the supply you already have.** One 2.6 – 5.5 V rail, no negative supply and no DC blocking capacitors.
- **Fast switching.** 1.2 µs between transmit and receive.

Key specifications

Parameter	Typical
Frequency range	500 MHz – 5.0 GHz
TX insertion loss	0.23 dB @ 0.5 – 0.8 GHz · 0.44 dB @ 3.3 – 3.8 GHz
RX isolation	52 dB @ 0.5 – 0.8 GHz · 36 dB @ 3.3 – 3.8 GHz
Power handling	100 W CW · 631 W peak (1% duty)
Supply	2.6 – 5.5 V, no negative supply
Configuration	Asymmetric SPDT (TX / RX)
Switching time	1.2 µs
Package	32-pin QFN, 5.0 × 5.0 mm

Built for

Cellular infrastructure: small cells and macrocells · LTE and 5G transmit / receive switching · ADS-B and IFF systems

Why move from PIN diodes

A typical high-power T/R switch today

PIN diodes with a high-voltage bias network, many parts and power drawn all the time.

With the TS8029N

One 5 × 5 mm chip handles over 630 W peaks from a single low-voltage supply.

Choose the right switch for your design

Part (click for datasheet)	Type	Power (CW)	Frequency	Package
TS8029N ↗	**SPDT, T/R**	**100 W · 631 W peak**	**500 MHz – 5.0 GHz**	**QFN 5 × 5**
TS8028N ↗	SPDT, T/R	100 W · 500 W peak	500 MHz – 5.0 GHz	QFN 5 × 5
TS8329K ↗	SPDT, T/R	100 W peak	500 MHz – 8.5 GHz	QFN 3 × 3
TSL8028N ↗	Switch + LNA	100 W	2.0 – 5.0 GHz	QFN 5 × 5

Need the highest peaks? Choose the **TS8029N**. 500 W peak is enough? Choose the TS8028N. Want the switch and LNA in one part? Choose the TSL8028N.

Part numbers with an extra 0 have the charge pump disabled for ultra-quiet operation and need an external −18 V bias supply.

Get started

STEP 1

Read the datasheet

Scan the code or visit
tagoretech.com/Product_Doc/TS8029N.pdf

STEP 2

Order samples

TS8029N

TS8029N-EVB · evaluation board

From DigiKey, Richardson RFPD or your TagoreTech representative.

STEP 3

Talk to an expert

Our applications team will help you design it in.

support@tagoretech.com

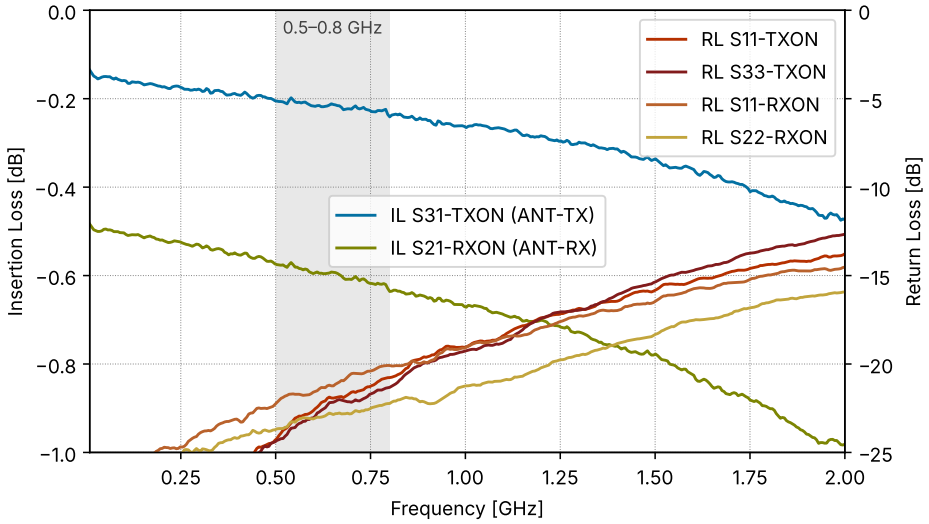
© 2026 TagoreTech Inc. · Specifications from datasheet Rev 3.00 (Oct 2026), subject to change.

Typical performance

Measured curves from the TS8029N datasheet, T_A = 25 °C, 50 Ω.

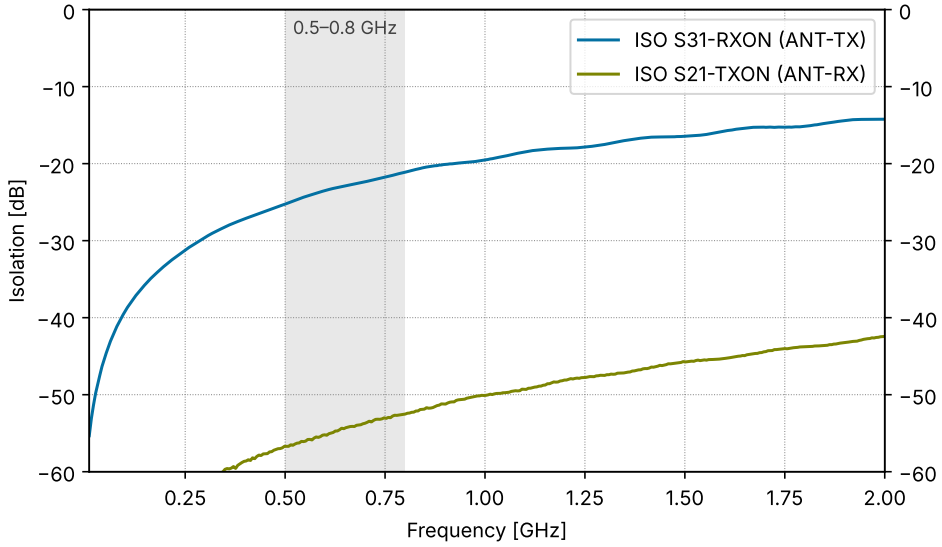
Insertion loss and return loss

ANT to TX and ANT to RX, unmatched



Isolation

The non-active port, ANT to TX and ANT to RX



Typical values

Parameter	500–800 MHz	2.3–2.6 GHz	3.3–3.8 GHz
TX insertion loss (dB)	0.23	0.54	0.44
RX isolation (dB)	52	39	36

Full data, S-parameters and evaluation board details in the datasheet at tagoretech.com/Product_Doc/TS8029N.pdf.

© 2026 TagoreTech Inc. · Specifications from datasheet Rev 3.00 (Oct 2026), subject to change.