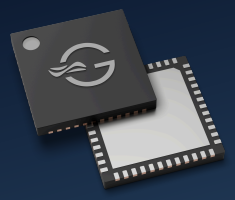
TAGORE

GaN SP4T RF power switch · also as TS80430N (charge pump off)

TS8043N

A GaN SP4T power switch for 100 W from 1 MHz to 3 GHz in one 5 × 5 mm chip, with 250 W peak.



100 W
CW power (250 W peak)

4 paths
Single pole four throw

0.18 dB
Insertion loss at 30 MHz

60 dB
Isolation at 30 MHz

What it does for your design

- **Four paths at 100 W.** Antenna, band or filter selection at real transmit power in a 5 × 5 mm package.
- **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.
- **Ready for Link 16 and IFF.** Matching examples in the datasheet for Link 16, IFF and 1.3 – 1.6 GHz.
- **Ultra-quiet option.** The TS80430N is the same switch with the charge pump off and an external −18 V supply.
- **Use the supply you already have.** One 3.3 V or 5 V rail. No negative supply and no DC blocking capacitors.
- **Safe states.** An isolation mode with all RF ports off.

Key specifications

Parameter	Typical
Frequency range	1 MHz – 3.0 GHz
Insertion loss	0.18 dB @ 30 MHz · 0.40 dB @ 1 GHz
Isolation	60 dB @ 30 MHz · 37 dB @ 1 GHz
Power handling	100 W CW · 250 W peak
P0.1dB	51 dBm CW @ 800 MHz
Supply	2.6 – 5.25 V, no negative supply
Control	CMOS
Switching time	12 µs (t_{ON})
Package	32-pin QFN, 5.0 × 5.0 mm

Built for

Private mobile and defence radios · Link 16 and IFF · Public safety handsets · Cellular infrastructure · Satellite terminals · Datalinks

Why move from PIN diodes

A typical 100 W PIN diode SP4T today
Around 50 parts, a high-voltage bias supply and watts of power just to hold the switch.

With the TS8043N
One 5 × 5 mm chip and one low-voltage supply, under 1 mW.

Choose the right switch for your design

Part (click for datasheet)	Type	Power (CW)	Frequency	Package
TS8043N ↗ / TS80430N ↗	**SP4T**	**100 W**	**1 MHz – 3.0 GHz**	**QFN 5 × 5**
TS86436P ↗	SP4T	200 W	1 MHz – 1.32 GHz	QFN 7 × 7
TS8541L ↗ / TS85410L ↗	SP4T	50 W	1 MHz – 4.3 GHz	QFN 4 × 4
TS8441L ↗ / TS84410L ↗	SP4T	30 W	1 MHz – 5.0 GHz	QFN 4 × 4

Need four paths at 100 W? Choose the **TS8043N**. Need 200 W? Choose the TS86436P. Need to reach 4.3 GHz? Choose the TS8541L.

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/TS8043N.pdf

STEP 2
Order samples
TS8043N
TS80430N · charge pump off
TS8043N-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

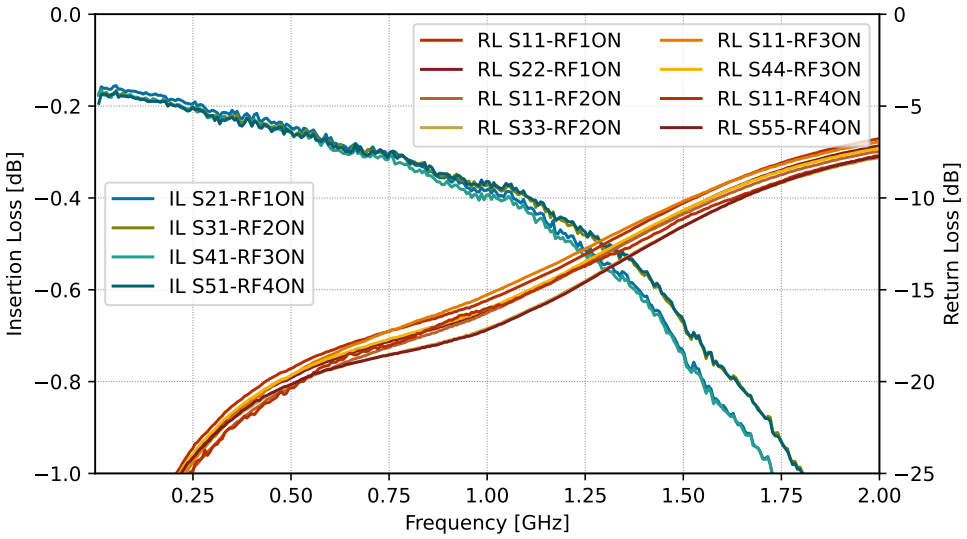
© 2026 TagoreTech Inc. · Specifications from datasheet Rev 3.10 (Oct 2026), subject to change.

Typical performance

Measured curves from the TS8043N datasheet, T_A = 25 °C, 50 Ω. The TS80430N has the same RF performance.

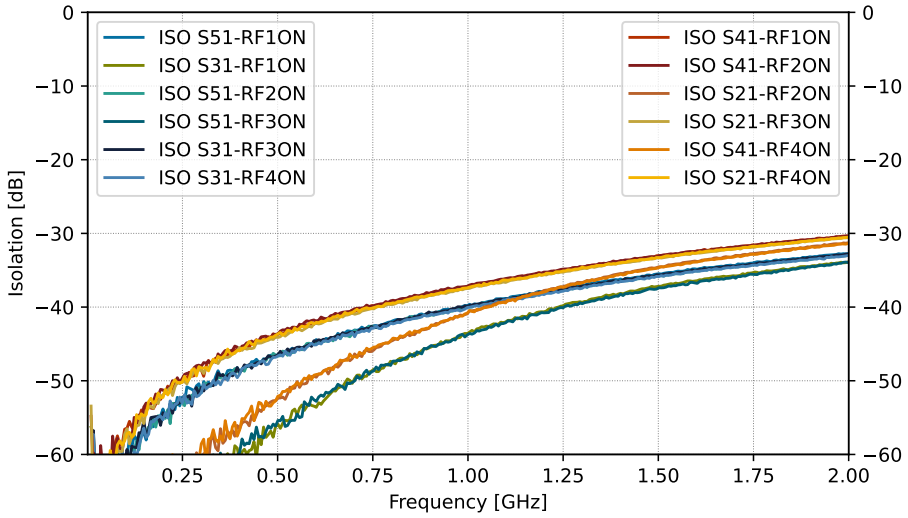
Insertion loss and return loss

RFC to RFx, unmatched



Isolation

RFC to the off ports



Typical values

Parameter	30 MHz	500 MHz	1 GHz	1.6 GHz
Insertion loss, unmatched (dB)	0.18	0.26	0.40	0.86
Isolation (dB)	60	–	37	–

Full data, S-parameters and evaluation board details in the datasheet at tagoretech.com/Product_Doc/TS8043N.pdf.

© 2026 TagoreTech Inc. · Specifications from datasheet Rev 3.10 (Oct 2026), subject to change.