

## GaAs MMIC Reflective SP4T Switch Chip, DC- 8 GHz

### Performance characteristics

- Frequency range: DC - 8 GHz
- Insertion loss : 1.0 dB type
- Isolation: 40 dB type
- On-state VSWR : 1.2
- Integrated logic control
- 50Ohm input/output
- QFN4X4mm

### Product Introduction

GSW-00084T-P-PD-CQ4 is a GaAs MMIC reflective single-pole four-throw switch chip, with 50Ω matching at the input/output end , a frequency range covering DC ~8 GHz , +5V power supply, 0V/+5V (compatible with +3.3V) positive level control, switching speed 20ns, 1dB compression input power + 28 dBm . The switch uses a 4X4mm surface-mount leadless ceramic tube shell to achieve airtight packaging, and the surface of the pin pad is gold-plated, which is suitable for reflow soldering installation process.

### Use restriction parameter <sup>1</sup>

Control voltage range	-0.5V ~ +6V
Supply voltage range	+6 V
Maximum input power	+33dBm
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

【1】 Exceeding any of these maximum limits may cause permanent damage.

### Electrical Performance Parameters ( TA = +25°C, VDD = + 5V, VC =0/+5V )

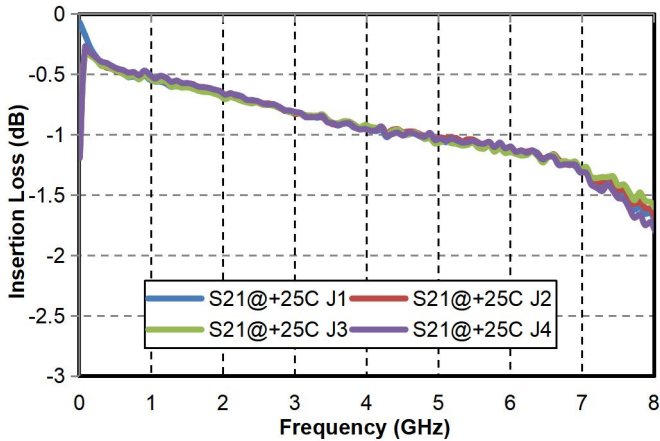
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	DC-8			GHz
Insertion loss	-	1.0	-	dB
Isolation	-	40	-	dB
On-state input return loss	-	20	-	dB
On-state output return loss	-	20	-	dB
P-1dB	-	28	-	dBm
Switching speed	-	20	-	ns
Control high level	3	3.3	5	V
Control low level	0	-	0.8	V
Control current	-	1	-	m A
Voltage	-	+5	-	V

Quiescent Current	-	11	-	mA
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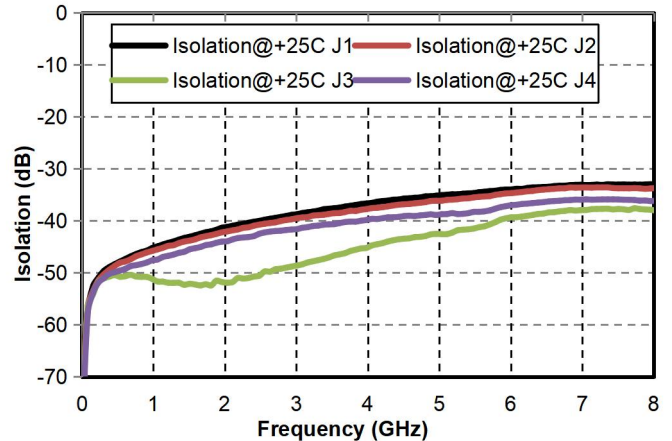
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### Main index test curve

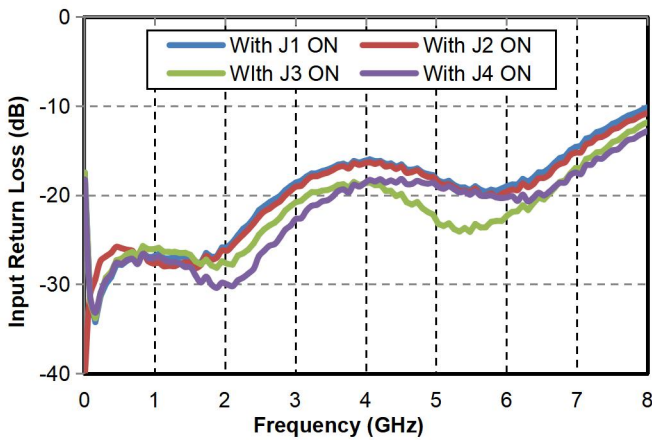
Insertion Loss vs. Operating Frequency



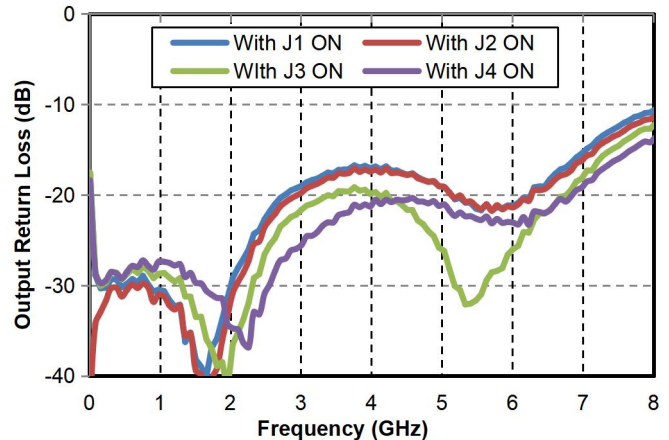
Isolation vs. Operating Frequency



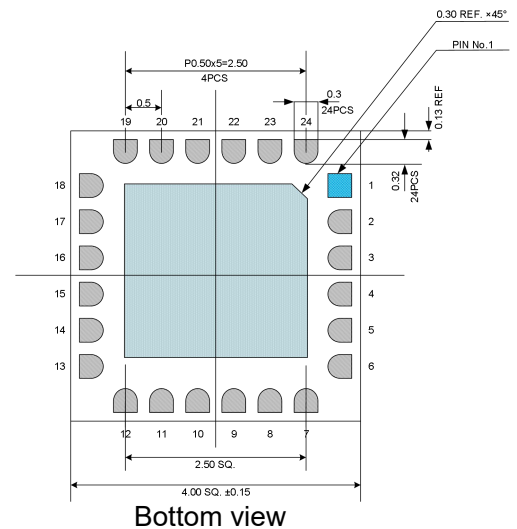
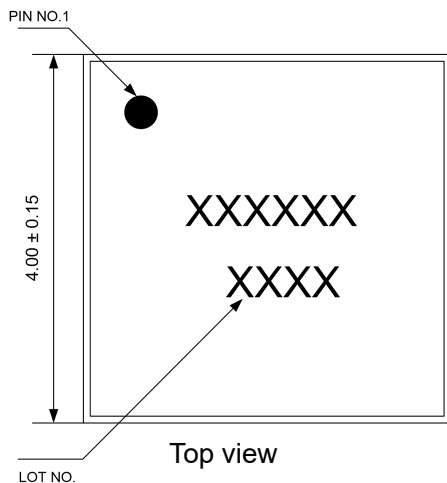
Input wave loss vs. operating frequency (on state)



Output return loss vs. operating frequency (on state)

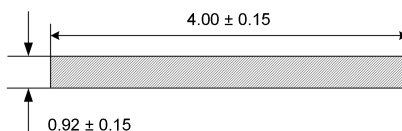


### Appearance structure



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### Appearance structure



Side View

The units in the figures are all in millimeters , and the tolerance is  $\pm 0.15$  mm.

### Truth Table

IN 1	IN 2	R FIN -RF1	R FIN -RF2	R FIN -RF3	R FIN -RF4
5V	5V	Conductivity	Shutdown	Shutdown	Shutdown
0V	5V	Shutdown	Conductivity	Shutdown	Shutdown
5V	0V	Shutdown	Shutdown	Conductivity	Shutdown
0V	0V	Shutdown	Shutdown	Shutdown	Conductivity

### Pin Definition

Pin number	Function Symbol	Functional Description
3	RFIN	Signal input terminal , external 50 ohm circuit, no DC blocking capacitor integrated into the chip
8, 11 , 20 , 23	RF OUT1/2/3/4	Signal output terminal, external 50 ohm circuit, no DC blocking capacitor integrated into the chip
15, 16	IN2, IN1	Positive level control port
14, 17	VDD	Power supply voltage (connect any end to VDD)
2, 4, 7 , 9, 10 , 12 , 19 , 21 , 22 , 24	GND	The pins need to be well grounded to the RF and DC grounds
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC
other	NC	The pin is left floating and can be grounded

## Application Circuit

