

GaAs MMIC Reflective SPDT Switch Chip, DC- 8 GHz

Performance characteristics

- Frequency range: DC - 8 GHz
- Insertion loss : 0.5 dB type
- Isolation: 40 dB type
- On-state VSWR : 1.2
- Integrated logic control
- 50Ohm input/output
- QFN4X4mm

Product Introduction

GSW-0008DT-P-PD-CQ4 is a GaAs MMIC reflective single-pole double-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 ¹

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)

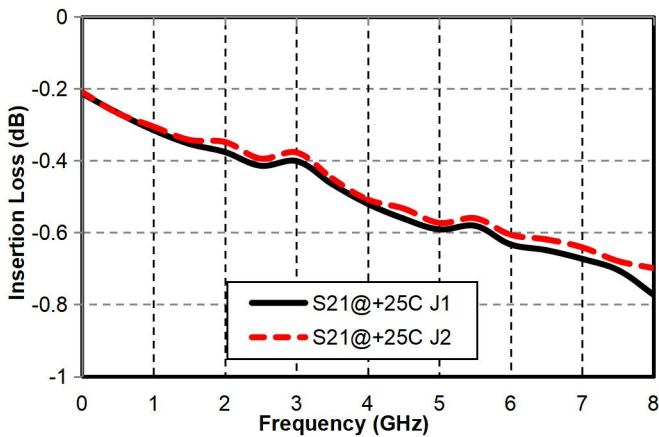
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	DC-8			G Hz
Insertion loss	-	0.5	-	dB
Isolation	-	40	-	dB
On-state input return loss	-	20	-	dB
On-state output return loss	-	20	-	dB
P-1dB	-	28	-	dBm
Switching speed	-	20	-	ns
Control high level	3	3.3	5	V
Control low level	0	-	0.8	V
Control current		1	-	m A

voltage	-	+5	-	V
Quiescent Current	-	2	-	mA

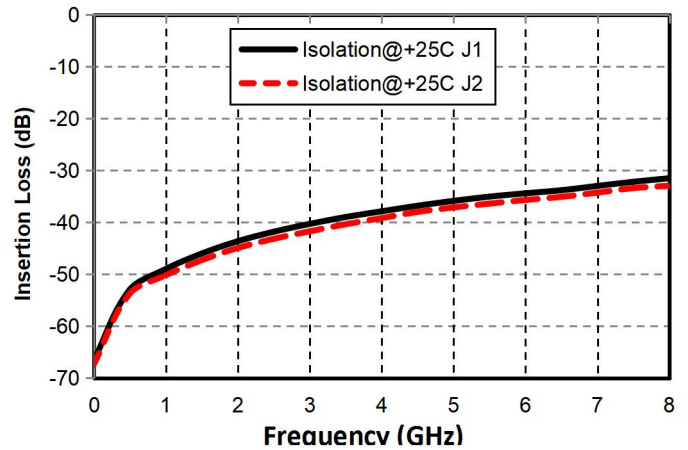
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Main index test curve

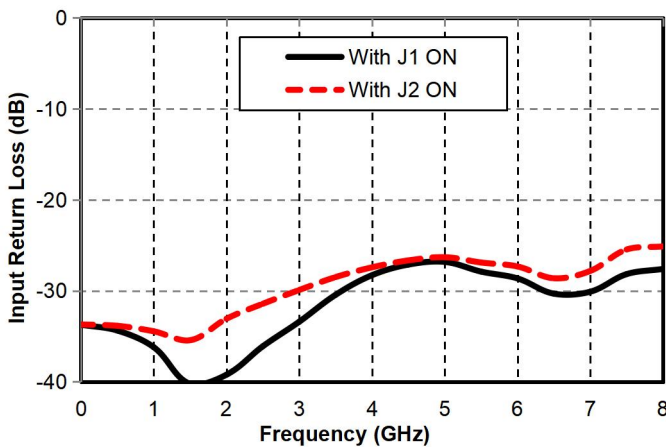
Insertion Loss vs. Operating Frequency



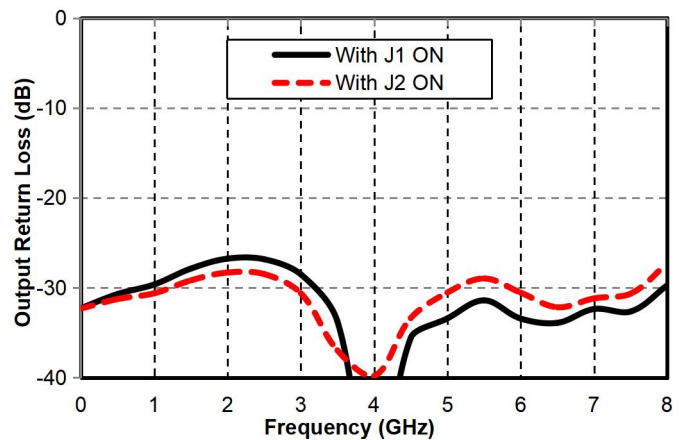
Isolation vs. Operating Frequency



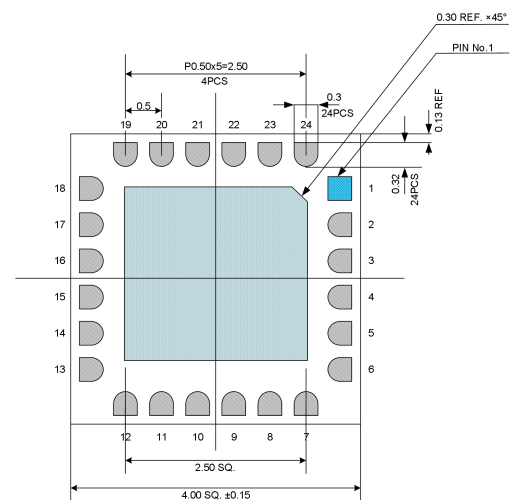
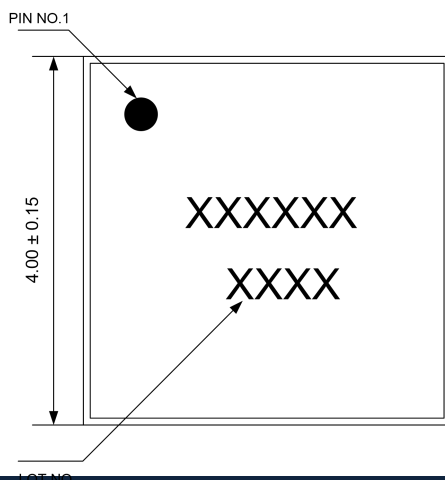
Input wave loss vs. operating frequency (on state)



Output return loss vs. operating frequency (on state)



Appearance structure

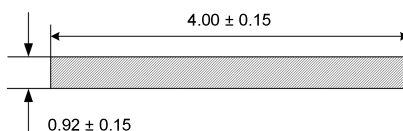


Top view

Bottom view

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Appearance structure



Side View

The units in the figures are all in millimeters , and the tolerance is ± 0.15 mm.

Truth table :

VDD	VC	Path
+5 V	+ 5V /(compatible with +3.3V)	RF IN -RF 2
+5 V	0V	RF IN -RF 1

Pin Definition		
Pin number	Function Symbol	Functional Description
3	RFIN	RF signal input terminal, no DC blocking capacitor inside , external DC blocking capacitor is required
9 , 22	RF 1, RF 2	RF signal output terminal, no DC blocking capacitor inside , external DC blocking capacitor is required
15	V D	voltage
16	VC	Positive level control port
2 , 4 , 8 , 10 , 21 , 23	GND	The pins need to be in good contact with the RF and DC grounds.
other	N C	The pin is left floating and can be grounded
Chip bottom	GND	needs to be in good contact with the RF and DC grounds

Application Circuit

