

GaAs MMIC Absorptive SPDT Switch Chip, DC- 6 GHz

Performance characteristics

- Frequency range: DC - 6 GHz
- Insertion loss : 1.3 dB
- Isolation: 47 dB
- wave ratio : 1.3
- 50Ohm input/output
- QFN4X4mm

Product Introduction

GSW-0006DT-PD-CQ4 is a GaAs MMIC absorptive single-pole double-throw switch chip, with 50Ω matching at the input/output, a frequency range of DC to 6 GHz , +5V power supply, 0V/+5V control, a switching speed of 100ns, and a 1dB compression input power of +30 dBm . The amplifier uses a 4X4mm surface-mount leadless ceramic tube shell to achieve airtight packaging. The surface of the pin pad is gold-plated and is suitable for reflow soldering installation.

Use restriction parameter ¹

Control voltage range	-0.5V ~ +6V
Supply voltage range	+6V
Maximum input power	+30dBm
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)

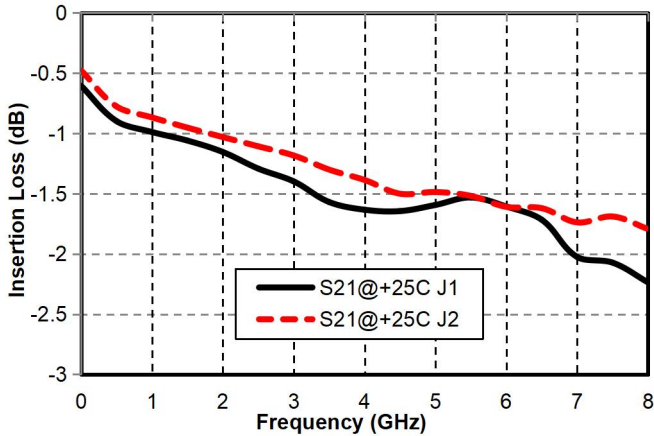
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	DC-6			G Hz
Insertion loss	-	1.3	-	dB
Isolation	-	47	-	dB
Input return loss	-	20	-	dB
Output return loss	-	20	-	dB
P-1dB	-	27 (0.1-1GHz); 30 (1-6GHz)	-	dBm
IIP3		45		dBm
Switching speed	-	100	-	ns
Control voltage	-	0/+5	-	V
Control current		1000		uA
voltage	-	+5	-	V
Quiescent Current	-	3	-	mA

*This chip supports 0V/-5V control. When 0V/-5V is controlled, the switching current is negligible and the switching speed is 10~15ns.

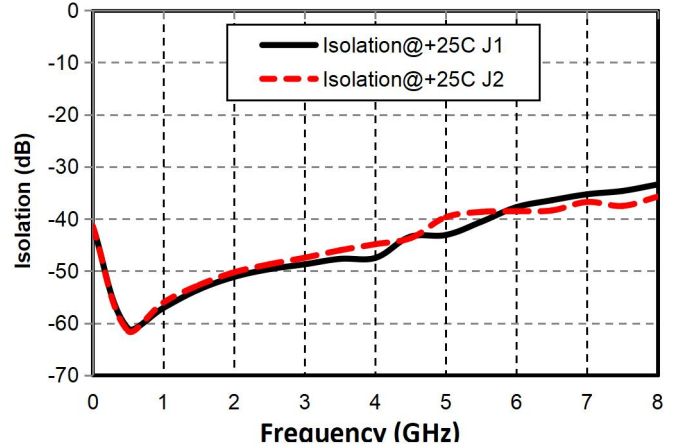
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Main index test curve

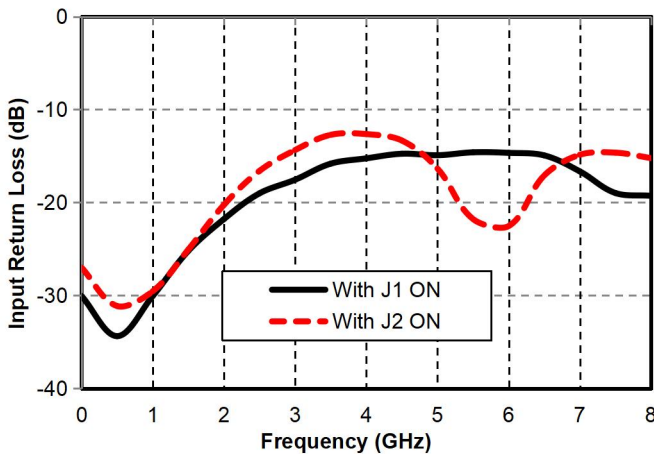
Insertion Loss vs. Operating Frequency



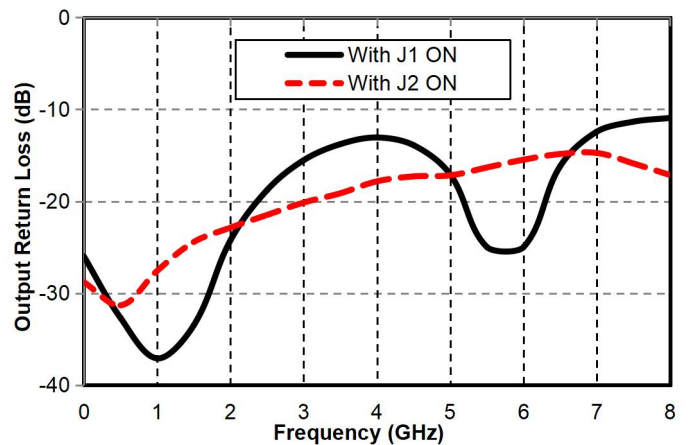
Isolation vs. Operating Frequency



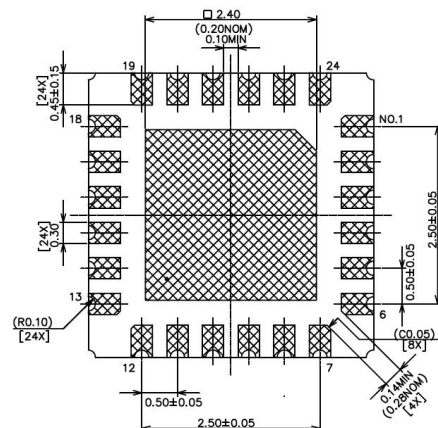
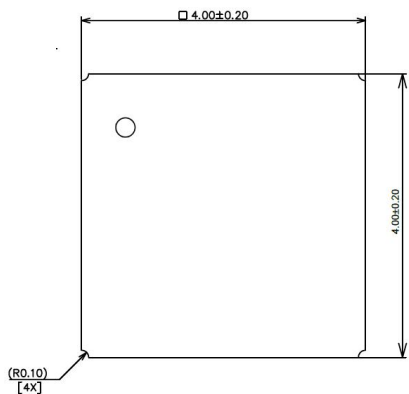
Input Wave Loss vs. Operating Frequency



Output Return Loss vs. Operating Frequency



Appearance structure

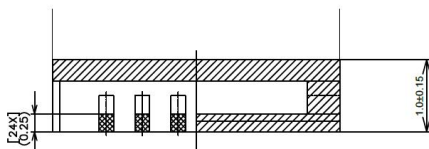


Top view

Bottom view

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Appearance structure



Side View

All units in the figures are millimeters .

Truth table :

VDD	VC	Path
+ 5V	+ 5V	RFC-RF1
+ 5V	0V	RFC-RF2

VC1	VC2	RFC-RFO1	RFC-RFO2
-5V	0V	closure	Conductivity
0V	-5V	Conductivity	closure

Pin Definition		
Pin number	Function Symbol	Functional Description
3	RF COM	RF signal input terminal, no DC blocking capacitor inside , external DC blocking capacitor is required
10, 21	RF OUTPUT	RF signal output terminal, no DC blocking capacitor inside , external DC blocking capacitor is required
16	VC	Positive level control port
15	VDD	Power supply voltage (used for positive level control)
14, 17	VC1, VC2	Negative level control port (used for negative level control)
2, 4, 9, 11, 20, 22, bottom of chip	GND	The pins need to be in good contact with the RF and DC grounds.

Application Circuit

