

GaAs MMIC Absorptive SPDT Switch Chip, DC- 12 GHz

Performance characteristics

- Frequency range: DC - 12 GHz
- Insertion loss : 1.5 dB
- Isolation: 48 dB
- wave ratio : 1.5
- 50Ohm input/output
- QFN4X4mm

Product Introduction

GSW-0012DT-PD-CQ4 is a GaAs MMIC absorptive single-pole double-throw switch chip, with 50 Ω matching at the input/output end, a frequency range covering DC ~ 12 GHz , integrated logic control circuit, -5V power supply, 0V/+5V positive level control , and a switching speed of 30ns. The amplifier 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
Maximum input power	+30dBm
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

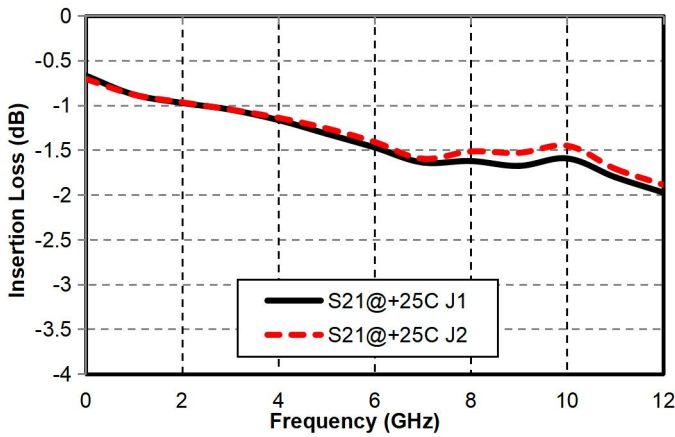
【1】 Exceeding any of these maximum limits may cause permanent damage.

Electrical Parameters (TA = +25°C)				
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	DC-12			G Hz
Insertion loss	-	1.5	-	dB
Isolation	-	53	-	dB
Input return loss	-	17	-	dB
Output return loss	-	17	-	dB
P-1dB	-	22	-	dBm
Switching speed	-	30	-	ns
Control voltage	-	0/+5	-	V
Control current	-	600	-	uA
Voltage	-	-5	-	V
Quiescent Current	-	3	-	mA

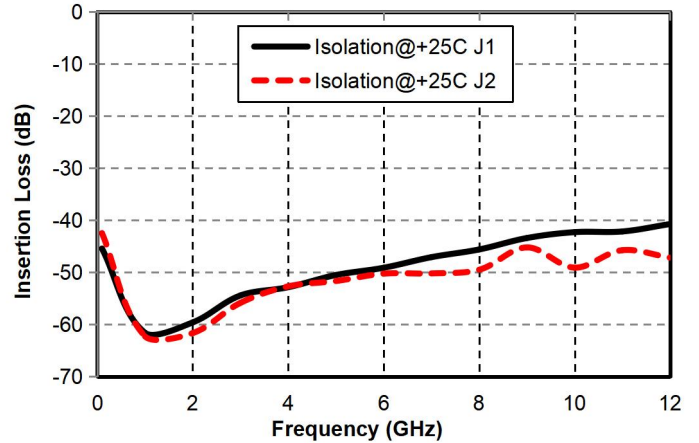
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Main index test curve

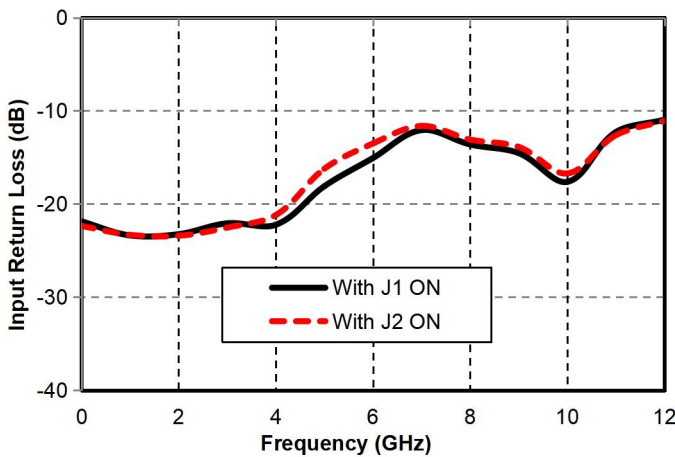
Insertion Loss vs. Operating Frequency



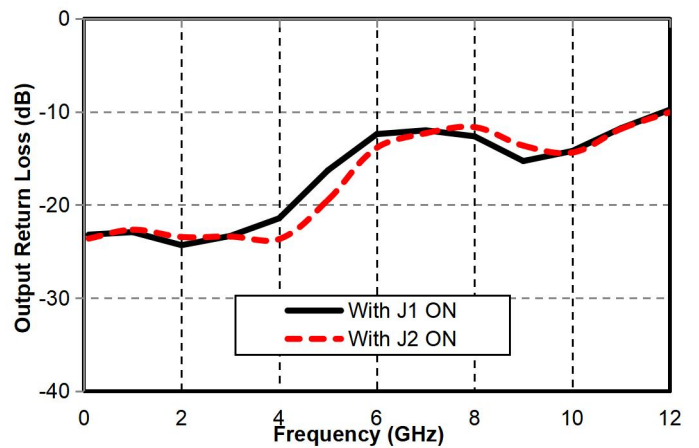
Isolation vs. Operating Frequency



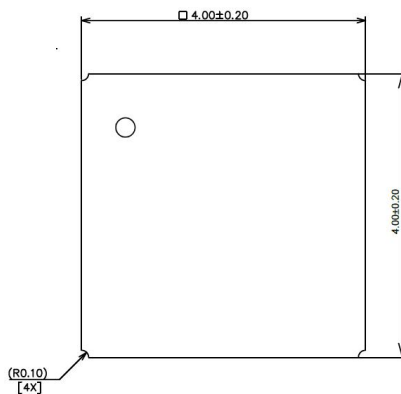
Input Wave Loss vs. Operating Frequency



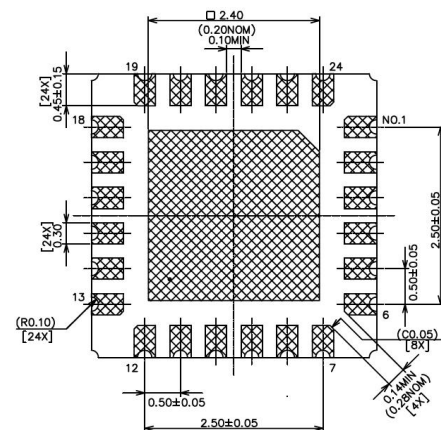
Output Return Loss vs. Operating Frequency



Appearance structure



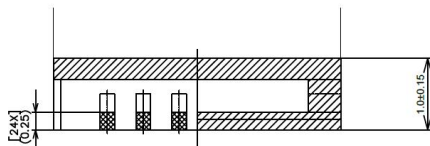
Top view



Bottom view

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Appearance structure



Side View

All units in the figures are millimeters .

Truth table:

VEE	VC	Path
-5V	5V	RFC-RF1
-5V	0V	RFC-RF2

Pin Definition

Pin number	Function Symbol	Functional Description
3	RF C	RF signal input terminal, no internal DC blocking capacitor
10, 21	RF 1, RF 2	RF signal output terminal, no internal DC blocking capacitor
15	VC	Positive level control port
16	VEE	Power supply voltage (used for positive level control)
2, 4, 9, 11, 20, 22	GND	The pins need to be in good contact with the RF and DC grounds.
Chip bottom	GND	needs to be in good contact with the RF and DC grounds

Application Circuit

