

## GaAs MMIC Reflective SPDT Switch Chip, DC- 6 GHz

### Performance characteristics

- Frequency range: DC - 6 GHz
- Insertion loss : 0.7 dB @ 6GHz
- Isolation: 42 dB
- wave ratio : 1.3
- 50Ohm input/output
- QFN4X4mm

### Product Introduction

GSW-0006CDT-N-PD-CQ4 is a GaAs MMIC reflective single-pole double-throw switch chip, with 50  $\Omega$  matching at the input/output end, a frequency range covering DC ~6 GHz , -5V power supply, 0V/+5V control (compatible with +3.3V), a switching speed of 100ns, and a 1dB compression input power of +30 dBm . The switch 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 <sup>1</sup>	
Control voltage range	-0.5V ~ +6V
Supply voltage range	-6V
Maximum input power	+30dBm
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

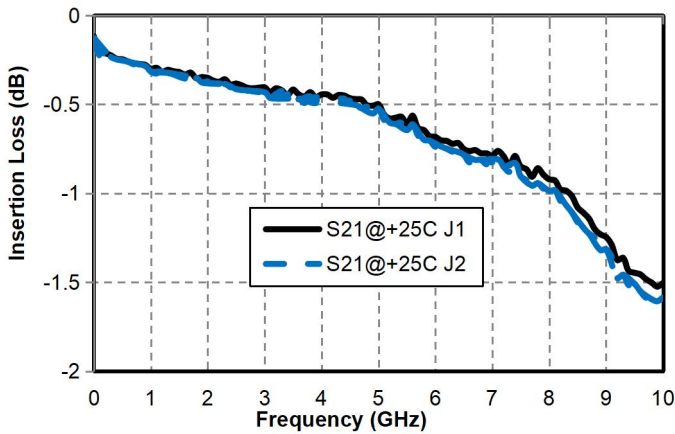
【1】 Exceeding any of these maximum limits may cause permanent damage.

Electrical performance parameters ( TA = +25°C, VEE = -5V , VC = 0/+5V )				
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	DC-6			G Hz
Insertion loss @6GHz	-	0.7	-	dB
Isolation	-	42	-	dB
Input return loss	-	20	-	dB
Output return loss	-	20	-	dB
P-1dB	-	30(0.8-4GHz)	-	dBm
Switching speed	-	100	-	ns
Control voltage	-	0/+5 (compatible with +3.3)	-	V
Control current	-	1000	-	uA
Voltage	-	-5	-	V
Quiescent Current	-	2	-	mA

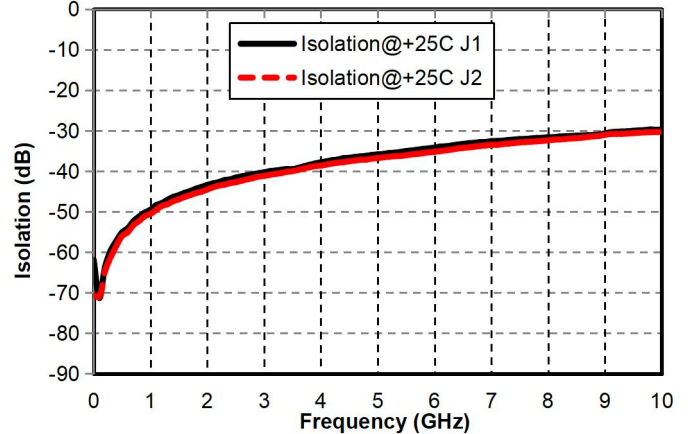
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### Main index test curve

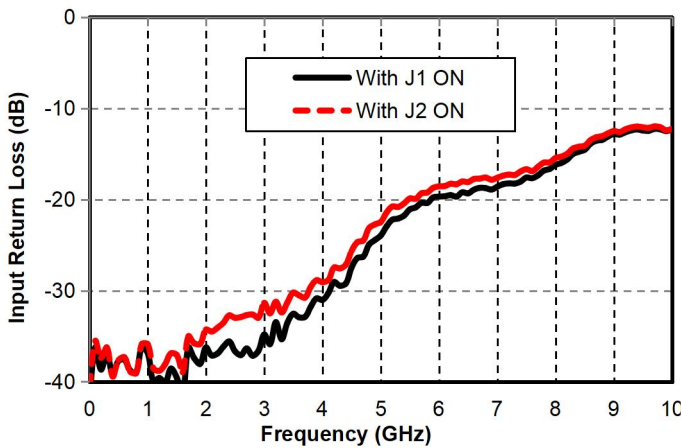
Insertion Loss vs. Operating Frequency



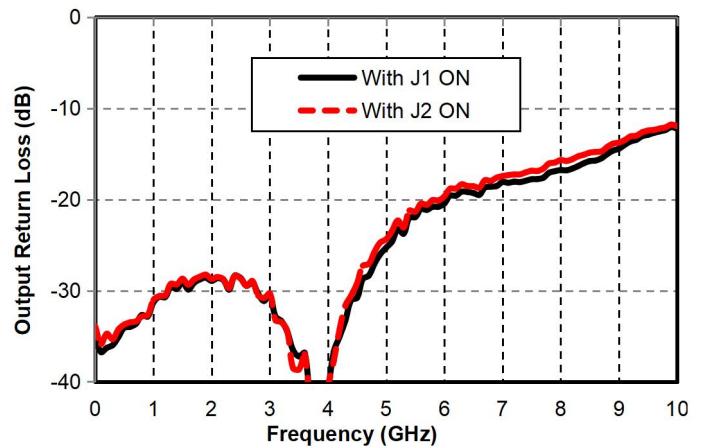
Isolation vs. Operating Frequency



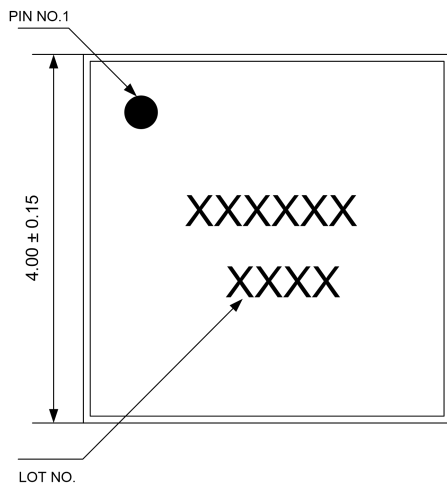
Input Wave Loss vs. Operating Frequency



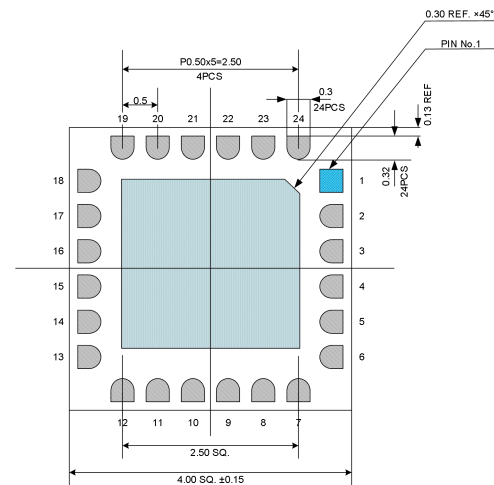
Output Return Loss vs. Operating Frequency



### Appearance structure



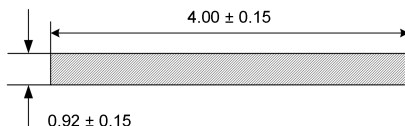
Top view



Bottom view

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### Appearance structure



Side View

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

### Truth table:

VD	VC	Path
+ 5V	+ 5V ( compatible with +3.3V)	RFC - RF2
+ 5V	0V	RFC - RF1

### Pin Definition

Pin number	Function Symbol	Functional Description
4	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 E	voltage
16	VC	Positive level control port
3 , 5 , 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

