

# GSW-0024DT-P-PD

## GaAs MMIC SPDT Absorptive Switch Chip, DC-24GHz

### Performance characteristics

- Frequency range: DC-24GHz
- Full positive power supply, control, integrated TTL
- Insertion loss : 1.3 dB
- Isolation: 57dB
- Standing wave ratio: 1.2 :1
- 50Ohm input / output
- 100% on-wafer testing
- Chip size: 1.7 x 1.15 x 0.1mm

### Product Introduction

GSW-0024DT-P-PD is a GaAs MMIC single-pole double-throw switch chip with 50Ω matching at the input/output ends and a frequency range covering DC~24 GHz . The chip is powered by +5V, + 5V /0V positive level control (compatible with +3.3V), switching speed of 20 ns, and 1dB compression input power of +2 3 dBm .

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 , VDD = +5V, VC = 0/+5V )				
index	Minimum	Typical Value	Maximum	unit
Frequency Range	DC-24			GHz
Insertion loss	-	1.3	-	dB
Isolation	-	57	-	dB
On-state input and output return loss (ON)	-	19/22	-	dB
OFF state output return loss (OFF)	-	21	-	dB
P-1dB	-	23	-	dBm
Switching speed	-	20	-	ns
Quiescent Current	-	1.5	-	mA
Control current		600		uA
Input high level voltage	3	-	5	V

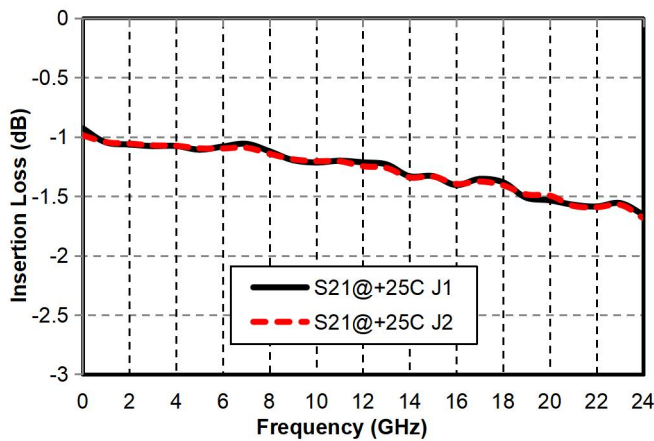
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Input low level voltage	0	-	0.8	V
voltage		+5		V

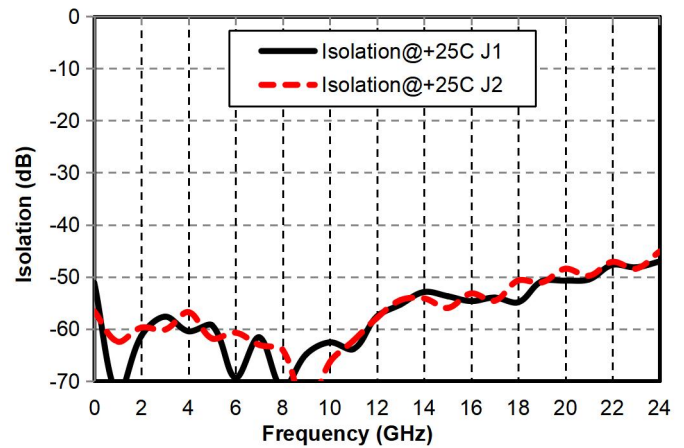
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### Main index test curve

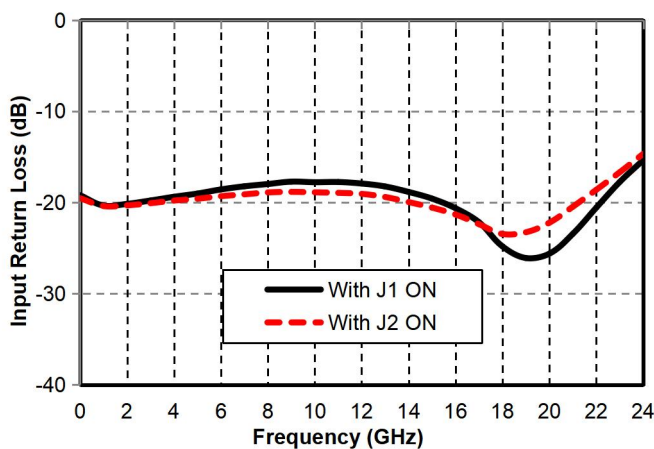
Insertion Loss vs. Operating Frequency



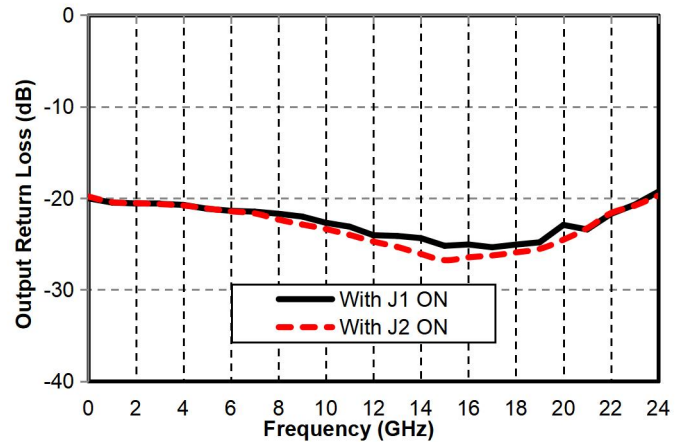
Isolation vs. Operating Frequency



Input Return Loss vs. Operating Frequency  
( On State )

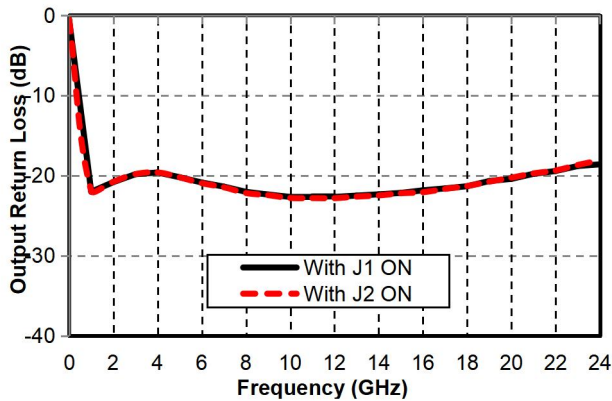


Output Return Loss vs. Operating Frequency  
( On State )



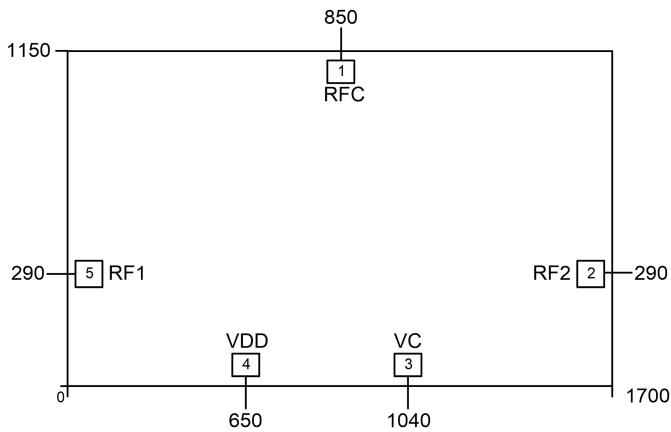
Output Return Loss vs. Operating Frequency  
( Off State )

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Appearance structure :



The units in the figure are all micrometers (dimensional tolerance:  $\pm 5.0\mu\text{m}$ .)

### Bonding point definition

Bonding point number	Function Symbol	Functional Description
1	RFC	RF signal input and output terminals , no internal DC blocking capacitors
2, 5	RF 2/ RF 1	RF signal input and output terminals , no internal DC blocking capacitors
3	VC	Positive level control port
4	VDD	voltage
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

Truth table :

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

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Proposed assembly drawing

