GSW-00084T-P-PD

GaAs MMIC SP4T Reflective Switch Chip, DC-8GHz

Performance characteristics

- Frequency range: DC-8GHz
- Insertion loss : 1.0 dB @ 8 GHz
- Isolation: 40dB
- On- state VSWR : 1.5
- Integrated control logic (all positive)
- 50Ohm input / output
- 100% on-wafer testing
- Chip size: 1.82 x 1.93 x 0.1mm

Product Introduction

GSW-00084T-P-PD is a GaAs MMIC single-pole four-throw reflective switch chip with 50Ω matching at the input/output ends and a frequency range covering DC-8 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 +28.5 dBm .

Use restriction parameter [1]	
Control voltage range	-0.5V ～ + 6V
Supply voltage range	+6V
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		GHz
Insertion loss @8GHz	-	1.0	-	dB
Isolation	-	40	-	dB
On-state input return loss	-	18	-	dB
On-state output return loss	-	20	-	dB
P-1dB@0.8~4GHz	-	28.5	-	dBm
IIP3(10dBm per tone , 1MHz spacing)	-	44	-	dBm
Switching speed	-	20	-	ns
Control high level	+3	+3.3	+5	V
Control low level	0	-	+ 0.8	V
Control current		-	1	mA
voltage	-	+5	-	V
Supply Current	-	11	-	mA

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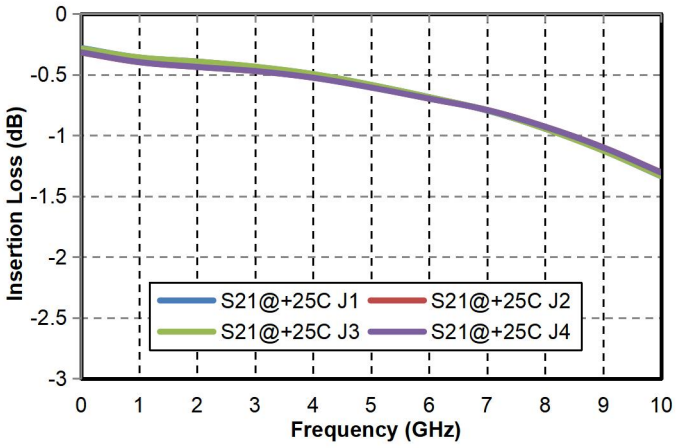
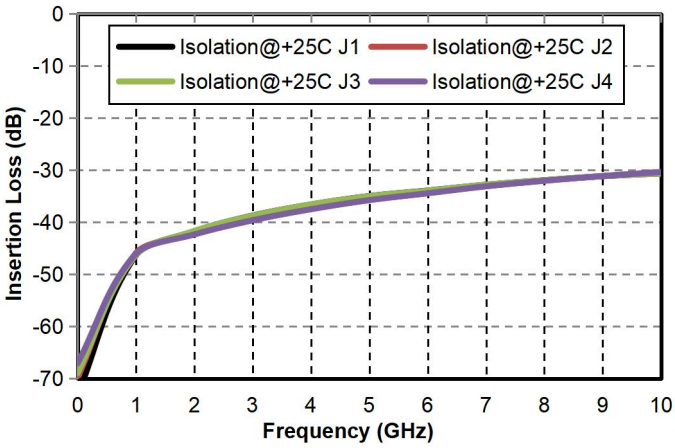
Main index test curve

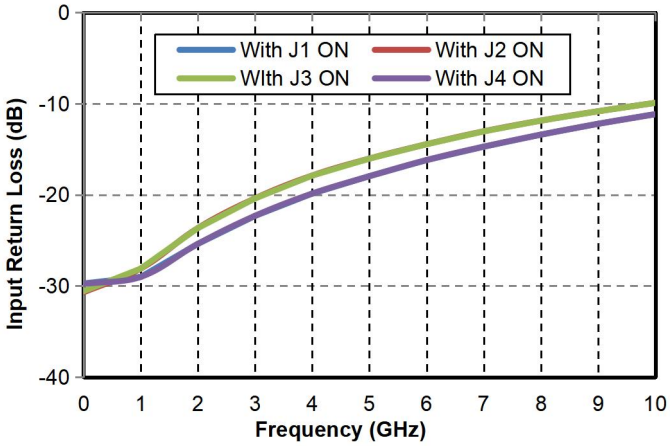
Insertion Loss vs. Operating Frequency



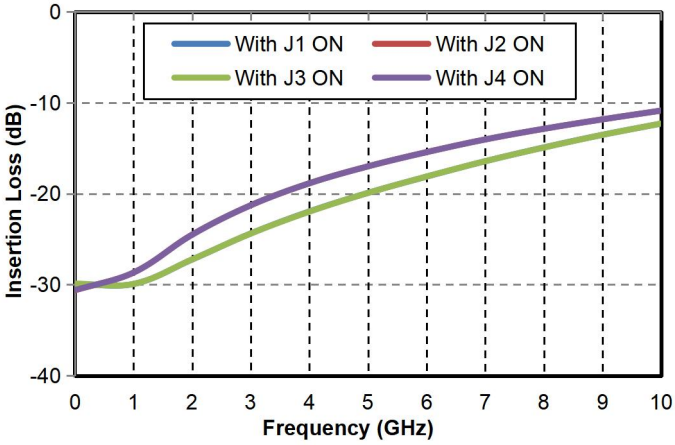
Isolation vs. Operating Frequency



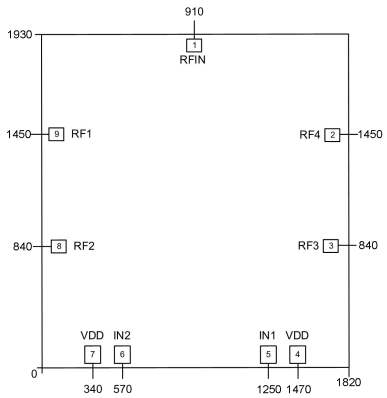
Input Return Loss vs. Operating Frequency



Output Return Loss vs. Operating Frequency



Appearance structure [2] (Dimensional tolerance: ± 50 um)



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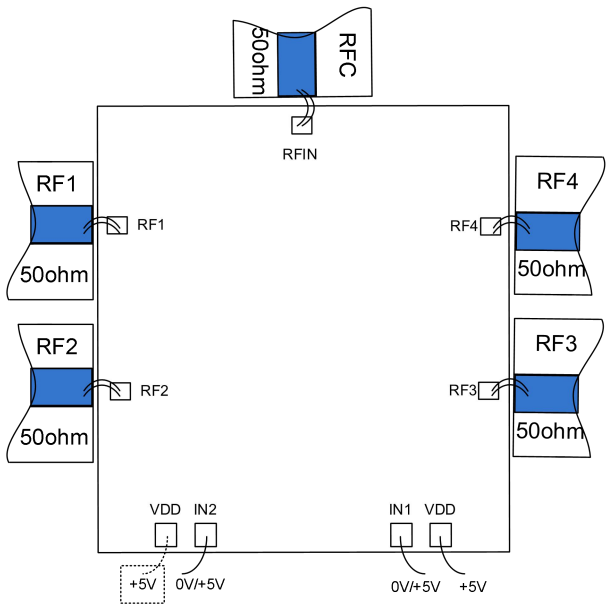
Bonding point definition		
Bonding point number	Function Symbol	Functional Description
1	RFIN	RF signal end , no internal DC blocking capacitor
2, 3, 8, 9	RF1~RF4	RF signal end , no internal DC blocking capacitor
5, 6	IN1, IN2	Positive level control port
4, 7	VDD	Power supply voltage (connect to VDD at either end)
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

Truth Table						
VDD	IN 1	IN 2	R FIN -RF1	R FIN -RF2	R FIN -RF3	R FIN -RF4
+5V	5V	5V	Conductivity	Shutdown	Shutdown	Shutdown
	0V	5V	Shutdown	Conductivity	Shutdown	Shutdown
	5V	0V	Shutdown	Shutdown	Conductivity	Shutdown
	0V	0V	Shutdown	Shutdown	Shutdown	Conductivity

Recommended assembly drawing



* Just connect to VDD on either side. VDD port can be connected in parallel with bypass capacitor > 100nF .

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