

GaAs MMIC SPDT Absorptive Switch Chip, 0.3-26GHz

Performance characteristics

- Frequency range: 0.3-26 GHz
- Full positive power supply / control, integrated TTL
- Can be fully shut down
- Insertion loss : 2.8dB@26GHz
- Isolation: 50dB
- Standing wave ratio: 1.3 : 1
- 50Ohm input / output
- Chip size: 1.55 x 1.4 x 0.1mm

Product Introduction

GSW-0026DT-P-PD is a GaAs MMIC absorptive single-pole double-throw switch chip, with 50Ω matching at the input/output , a frequency range of 0.3~26 GHz , a +5V power supply, + 5V /0V positive level control (compatible with +3.3V) , a switching speed of 20 ns , and a 1dB compression input power of +25 dBm . GSW-0026DT-P-PD and GSW-0026DT-P-PDM are mirror versions of each other.

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.

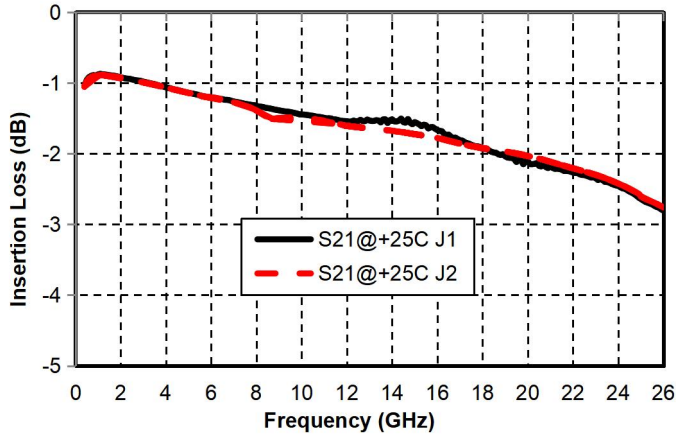
Electrical performance parameters (TA = +25°C , VDD = +5V)

index	Mini mum	Typical Value	Maximum	unit
Frequency Range	0.3-26			G Hz
Insertion loss @26GHz	-	2.8	-	dB
Isolation	-	50	-	dB
On-state input and output return loss (ON)	-	18/18	-	dB
OFF state output return loss (OFF)	-	17	-	dB
P-1dB@0.5~26GHz	-	2 5	-	dBm
Switching speed	-	20	-	ns
Control current	-	500	1000	uA
Input high level voltage	+2.7	+3.3	+5	V
Input low level voltage	0	-	+ 0.8	V
voltage	-	+5	-	V
Quiescent Current	-	2	-	mA

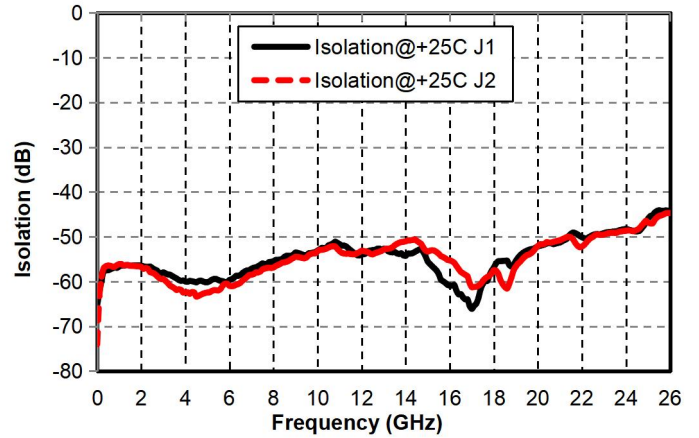
GaAs MMIC SPDT Absorptive Switch Chip, 0.3-26GHz

Main index test curve

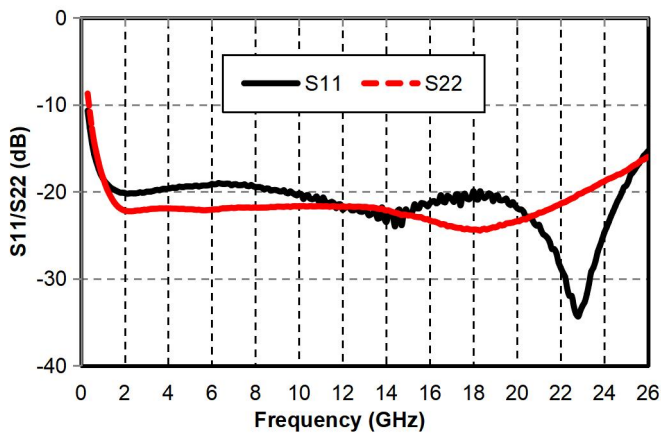
Insertion Loss vs. Operating Frequency



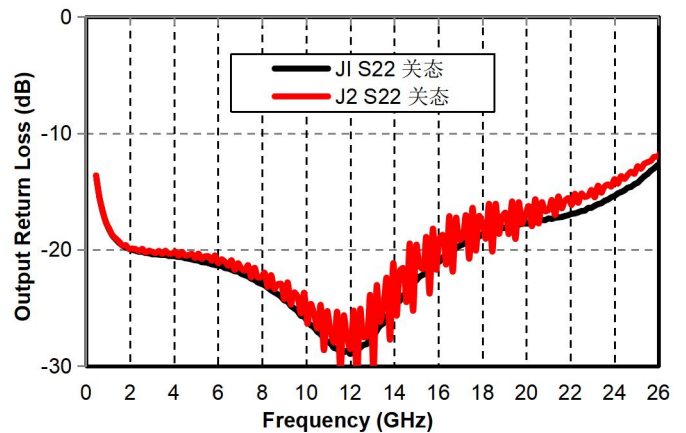
Isolation vs. Operating Frequency



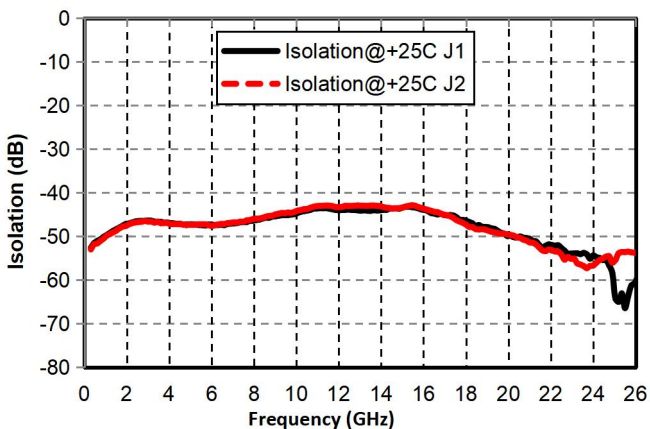
Input/output return loss vs. operating frequency (on state)



Output Return Loss vs. Operating Frequency (Off State)

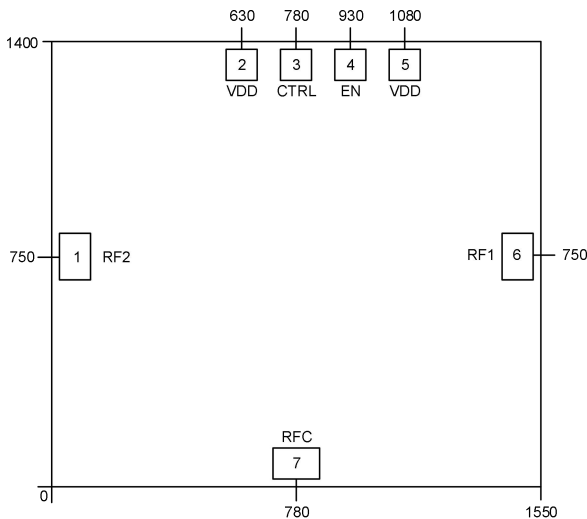


Full off isolation vs. Operating Frequency



GaAs MMIC SPDT Absorptive Switch Chip, 0.3-26 GHz

Appearance and structure (the units in the figure are all micrometers , and the external dimension tolerance is $\pm 50\mu\text{m}$.)



Bonding point definition

Bonding point number	Function Symbol	Functional Description
7	RFC	RF signal input and output terminals , internal integrated DC blocking capacitors
1, 6	RF2/RF1	RF signal input and output terminals , internal integrated DC blocking capacitors
3	CTRL	Control Port
2, 5	VDD	Power supply voltage, select one
4	EN	Enable control port
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

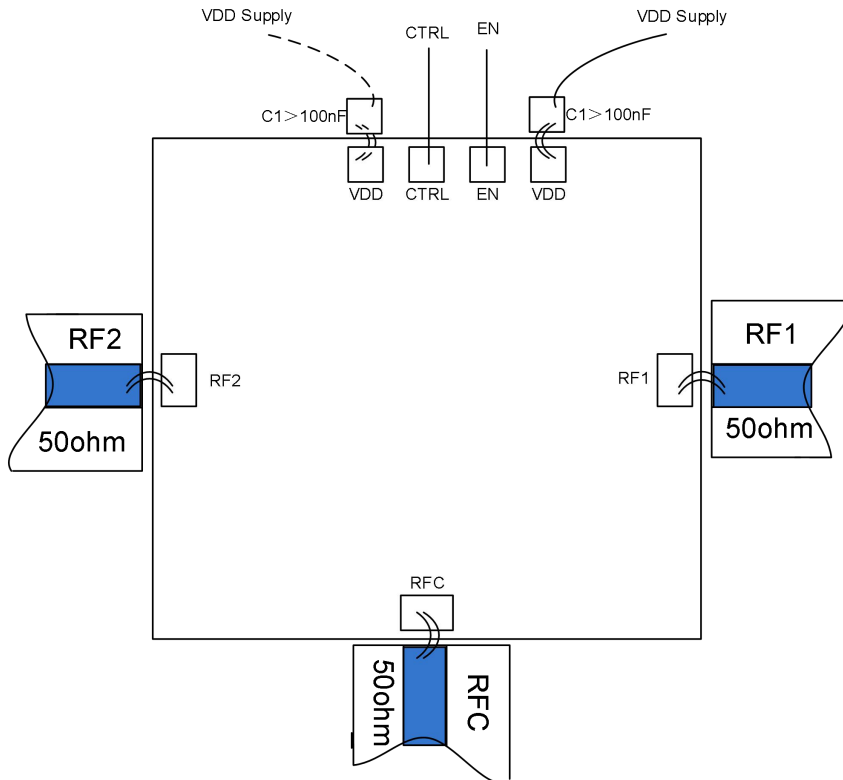
Truth Table

VDD	EN	CTRL	On state
+5V	0 V	Low (0)	RFC- RF1
	0 V	High (1)	RF C-RF2
	+5 V	-	All Off

High (1), +2.7~ +5V; Low (0), 0~ + 0.8V

GaAs MMIC SPDT Absorptive Switch Chip, 0.3-26 GHz

Recommended assembly drawing



Just connect VDD at any end . The VDD port can be connected in parallel with a bypass capacitor > 100nF .