

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
- On-state VSWR: 1.3 :1
- 50Ohm input / output
- Chip size: 1.55 x 1.4 x 0.1mm

Product Introduction

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

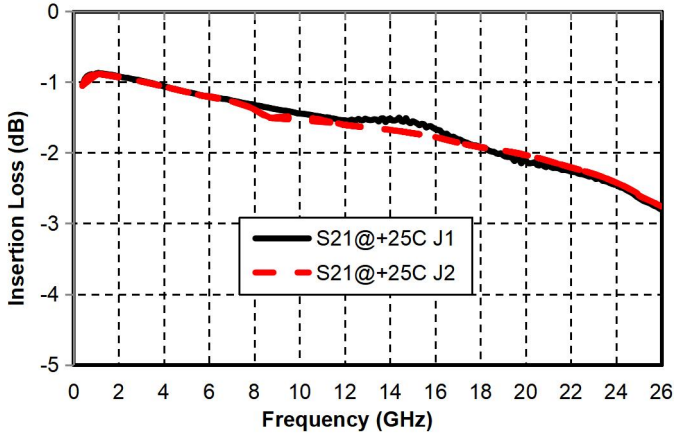
index	Minimum	Typical Value	Maximum	unit
Frequency Range	0.3-26			GHz
Insertion loss @26GHz	-	2.8	-	dB
Isolation	-	50	-	dB
On-state input and output return loss (ON)	-	18/18	-	dB
OFF state output return loss (OFF)	-	17	-	dB
P-1dB@0.5~26GHz	-	25	-	dBm
Switching speed	-	20	-	ns
Control current		500	1000	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
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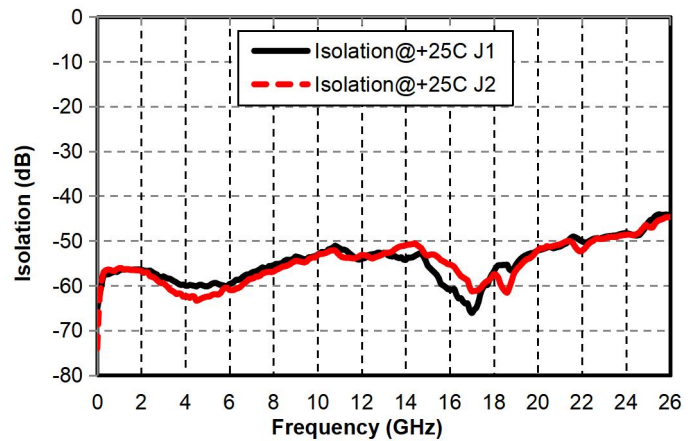
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Main index test curve

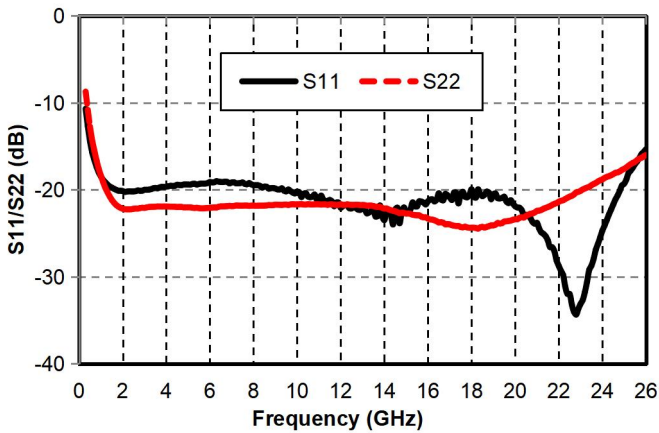
Insertion Loss vs. Operating Frequency



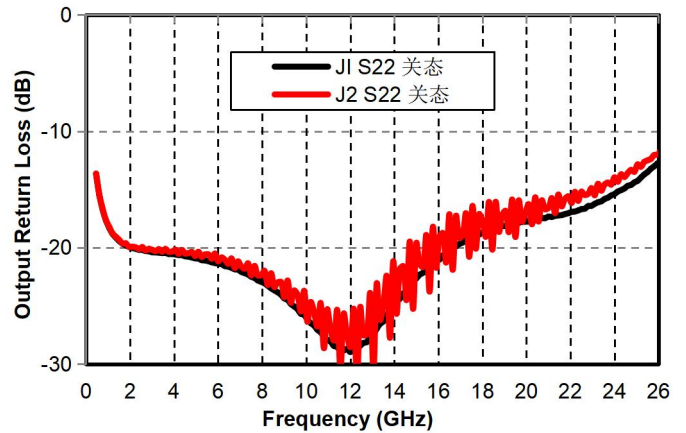
Isolation vs. Operating Frequency



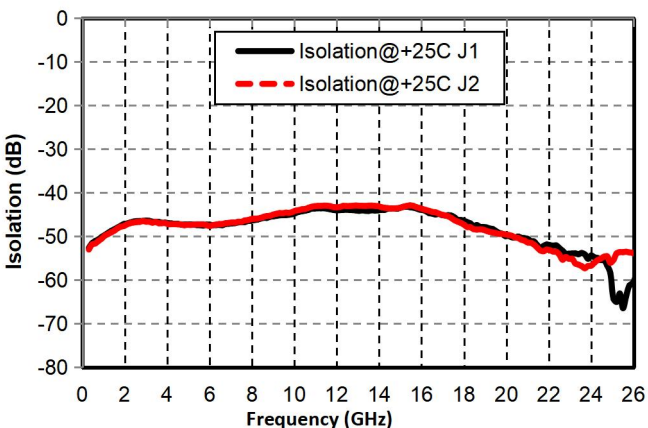
Input/output return loss vs. operating frequency (on state)



Output Return Loss vs. Operating Frequency (Off State)

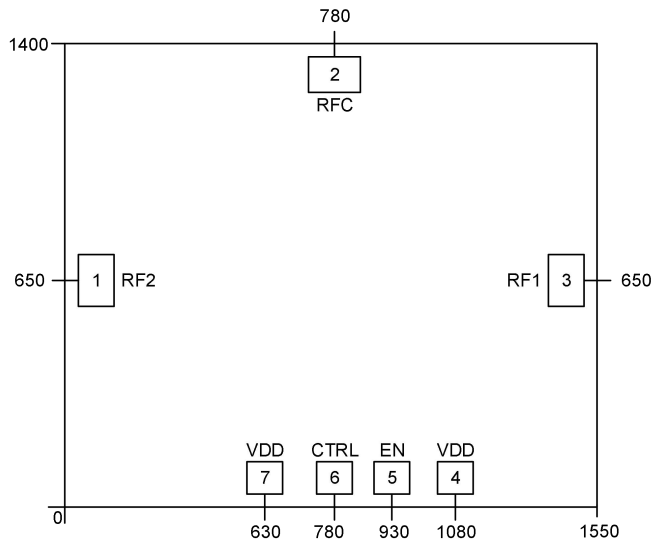


Full off isolation vs. Operating Frequency



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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

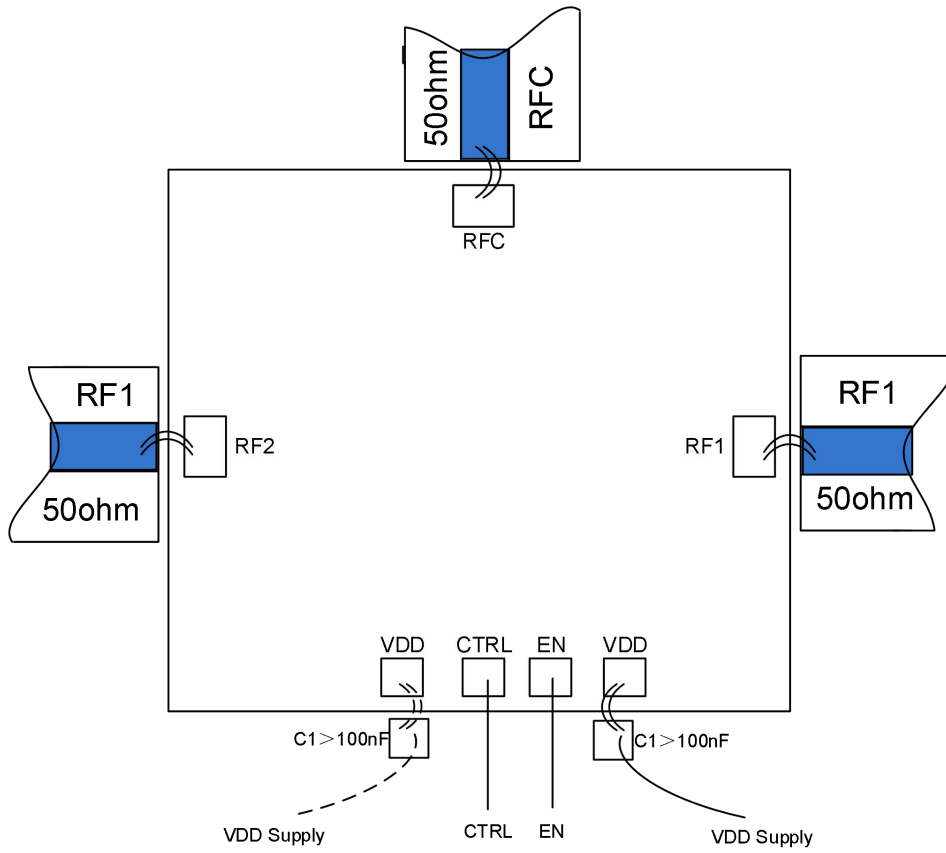
Bonding point number	Function Symbol	Functional Description
2	RFC	RF signal input and output terminals, internal integrated DC blocking capacitors
1,3	RF1/RF2	RF signal input and output terminals, internal integrated DC blocking capacitors
6	CTRL	Control Port
4, 7	VDD	Power supply voltage, select one
5	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

Recommended assembly drawing



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