

GaAs High P-1 SPDT Reflective Switch Chip, DC-20GHz

Performance characteristics

- Frequency range: DC -20GHz
- P-1: ≥ 30 dBm @ 0.02 ~ 20 GHz
- Insertion loss : 1.3 dB @ 20 GHz
- Isolation: 38dB
- Integrated logic control (all positive)
- 50Ohm input / output
- Chip size: 1.25 x 1.1 x 0.1mm

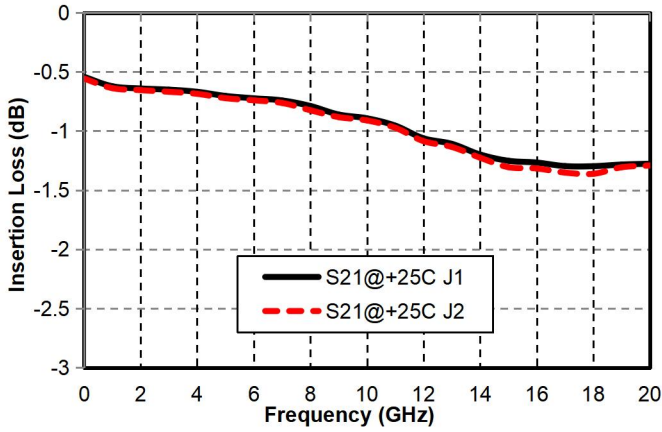
Use restriction parameter ¹	
Control voltage range	-0.5V ~ + 6V
Supply voltage range	+6V
Maximum input power	+38dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

Electrical performance parameters (TA = +25°C)				
index	Minimum	Typical Value	Maximum	unit
Frequency Range	DC-20			G Hz
Insertion loss @20GHz		1.3		dB
Isolation	-	38	-	dB
On-state input return loss	-	20	-	dB
On-state output return loss	-	20	-	dB
P-1dB		8@0.001GHz		dBm
		17@0.005GHz		dBm
		23@0.01GHz		dBm
		30@0.02GHz		dBm
		33@0.1GHz		dBm
	-	33@0.3GHz	-	dBm
	-	35@0.5GHz	-	dBm
	-	36@ 1 ~18GHz	-	dBm
Switching speed		150		ns
Control high level	2.7	3.3	5	V
Control low level	0	-	0.8	V
voltage	-	+5	-	V
Quiescent Current	-	1.2	-	mA

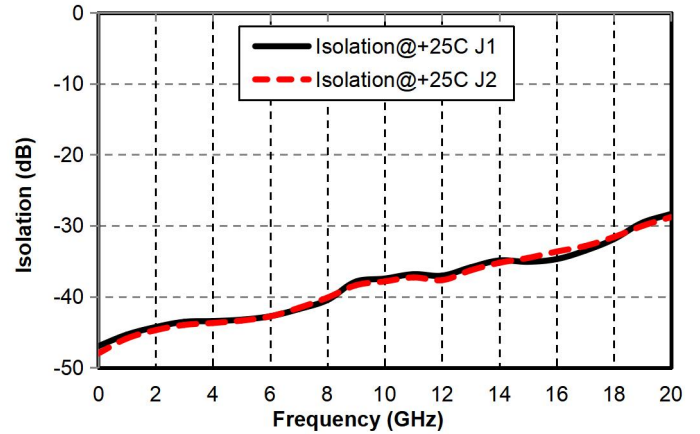
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Main index test curve

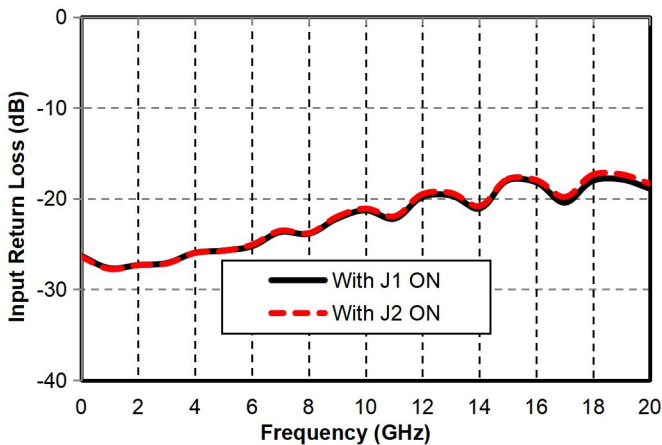
Insertion Loss vs. Operating Frequency



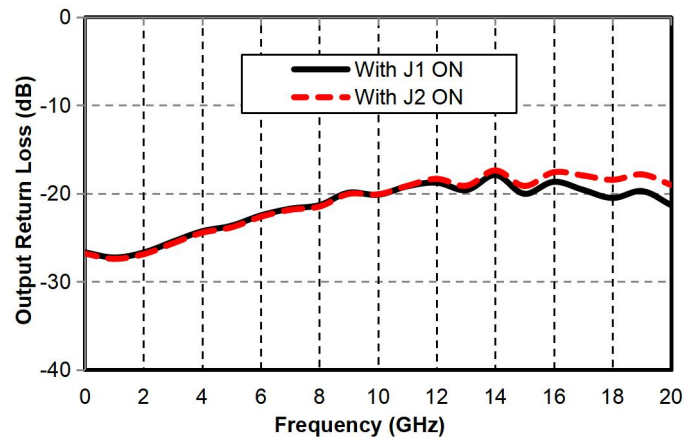
Isolation vs. Operating Frequency



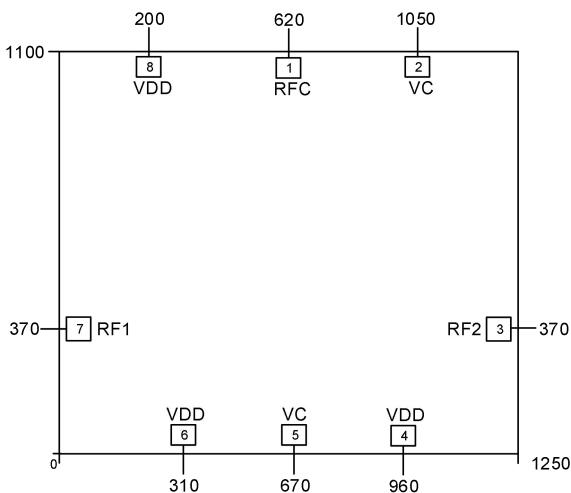
Input Return Loss vs. Operating Frequency



Output Return Loss vs. Operating Frequency



Appearance structure ²



【 2 】 All units in the figure are micrometers

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Bonding point definition		
Bonding point number	Function Symbol	Functional Description
1	RF COMM	RF signal input terminal , requires external broadband DC blocking capacitor
3, 7	RF OUTPUT	RF signal output terminal , requires external broadband DC blocking capacitor
2, 5	VC	Positive level control port
4, 6, 8	VDD	voltage
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

Just connect VDD and VC on either side.

Truth table :

VDD	VC	path
+ 5V	High (1)	RFC-RF 2
+ 5V	Low (0)	RFC-RF 1

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

Recommended assembly drawing

