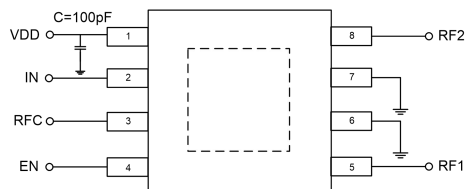


GaAs MMIC SPDT absorptive switch chip, DC- 5 GHz

Performance characteristics

- Frequency range: DC - 5 GHz
- Insertion loss : 0.9@2GHz
- Isolation: 53dB@2GHz
- Integrated logic control, full positive power supply control
- Can be fully shut down
- 50Ohm input / output
- Plastic package E MSOP8

Block Diagram



Product Introduction

GSW-0005DT-PD-MS8G is a GaAs MMIC absorptive single-pole double-throw switch chip with 50Ω matching at the input/output end and a frequency range covering DC-5 GHz , the chip is powered by +5V, 0 V / +5V positive level control (compatible with +3.3V), switching speed 30 ns, 1dB compression input power + 30 dBm . The switch is encapsulated in E MSOP8 plastic , and the surface of the pin pad is tinned, which is suitable for reflow soldering installation process.

Use restriction parameter ¹

Control voltage range	-0.5V ~ + 6V
Supply voltage range	+6V
Maximum input power	+34dBm
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)

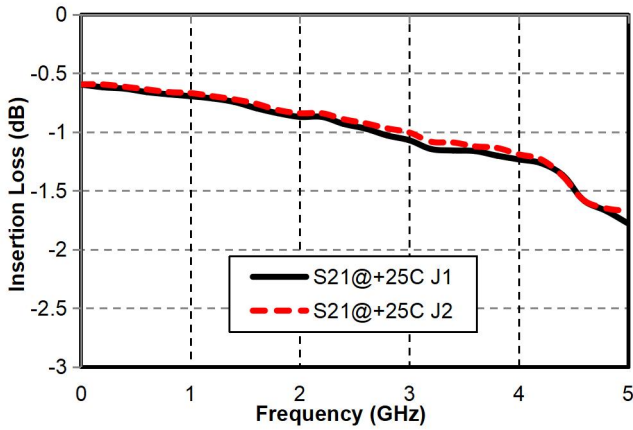
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	DC-5			G Hz
Insertion loss @2GHz	-	0.9	-	dB
Isolation @2GHz	-	53	-	dB
On-state input return loss	-	20	-	dB
On-state output return loss	-	20	-	dB
Off-state output return loss (RFC is in reflective state when off)	-	20	-	dB
P-1dB	-	27	-	dBm
IIP3(Input power= 1 0dBm/tone, Δf = 1 MHz)	-	44	-	dBm
Switching speed	-	30	-	ns
Control voltage	-	0/+5	-	V

Control current		500		uA
Voltage	-	+5	-	V
Quiescent Current	-	3	-	mA

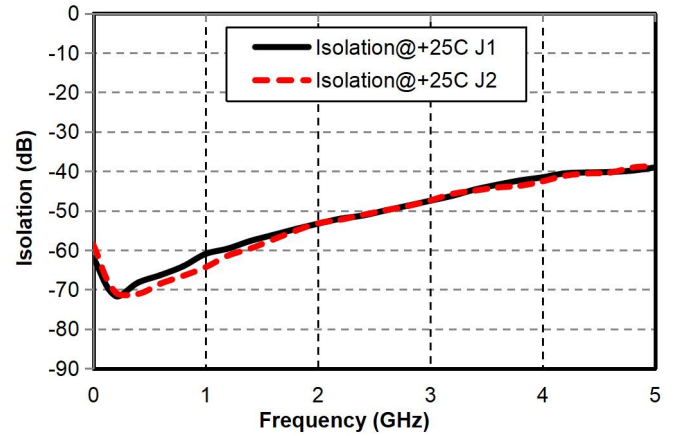
GaAs MMIC SPDT absorptive switch chip, DC- 5 GHz

Main index test curve

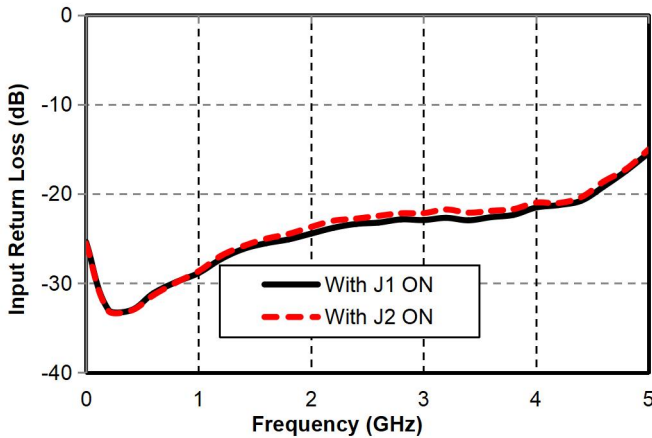
Insertion Loss vs. Operating Frequency



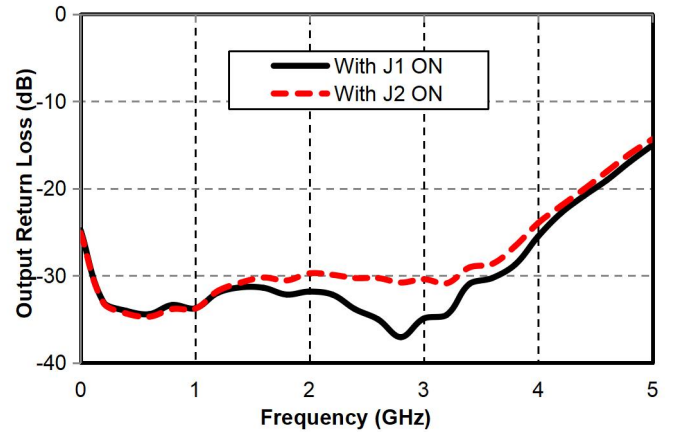
Isolation vs. Operating Frequency



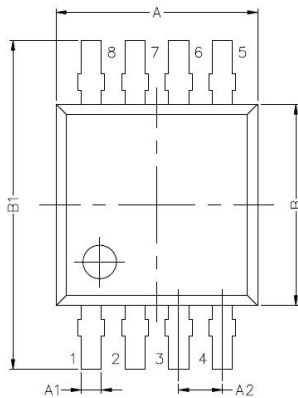
Input Return Loss vs. Operating Frequency (On State)



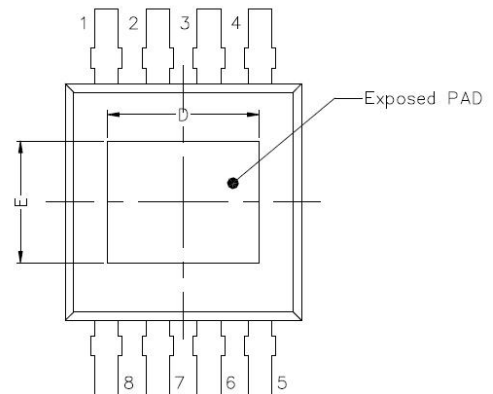
Output Return Loss vs. Operating Frequency (On State)



external structure

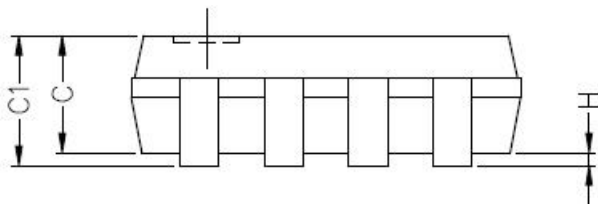


TOP VIEW

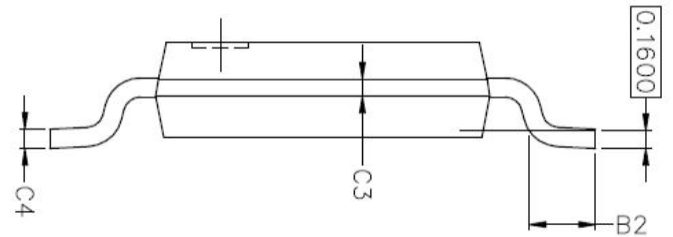


BOTTOM VIEW

GaAs MMIC SPDT absorptive switch chip, DC- 5 GHz



FRONT VIEW



SIDE VIEW

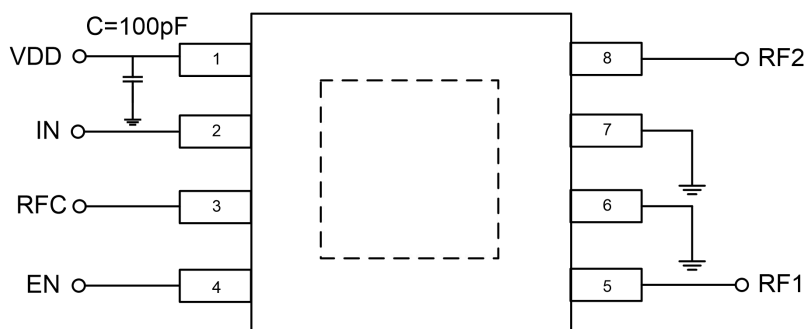
Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	2.90	3.00	3.05
A1	0.28	0.30	0.35
A2	0.65 TYP		
B	2.90	3.00	3.05
B1	4.70	4.90	5.10
B2	0.45	0.60	0.75
C	0.75	0.85	0.95
C1	—	—	1.10
C2	0.328 BSC		
C3	0.152 BSC		
C4	0.15	—	0.23
D	1.82	1.93	2.03
E	1.49	1.55	1.61
H	0.00	—	0.09

GaAs MMIC SPDT absorptive switch chip, DC- 5 GHz

Truth table

Function	EN	IN
RFC-RF1	0 V	+5V (compatible with +3.3V)
RFC-RF2	0	0 V
All Off	+5V (compatible with +3.3V)	-

Application Circuit



Pin Definition

Pin number	Function Symbol	Functional Description
3	RFC	RF signal input terminal, no DC blocking capacitor inside , external DC blocking capacitor is required
5, 8	RF1 , RF2	RF signal output terminal, no DC blocking capacitor inside , external DC blocking capacitor is required
6, 7	GND	The pins need to be well grounded to the RF and DC grounds
1	VDD	voltage
2	IN	Positive level control port
4	EN	Turn on and off enable terminal
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC