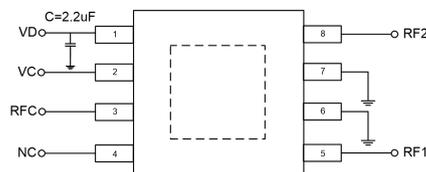


GaAs MMIC SPDT reflective switch chip, DC- 4 GHz

Performance characteristics

- Frequency range: DC - 4 GHz
- Insertion loss : 0.4dB
- Isolation: 38dB
- Integrated logic control, full positive power supply control
- 50Ohm input / output
- Plastic package E MSOP8

Block Diagram



Product Introduction

GSW-0004DT-PD-MS8G is a GaAs MMIC reflective single-pole double-throw switch chip with 50Ω matching at the input/output end, a frequency range covering DC-4 GHz , a +5V power supply, 0 V / +5V positive level control (compatible with +3.3V), a switching speed of 30 ns, and a 1dB compression input power of + 28 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.

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.

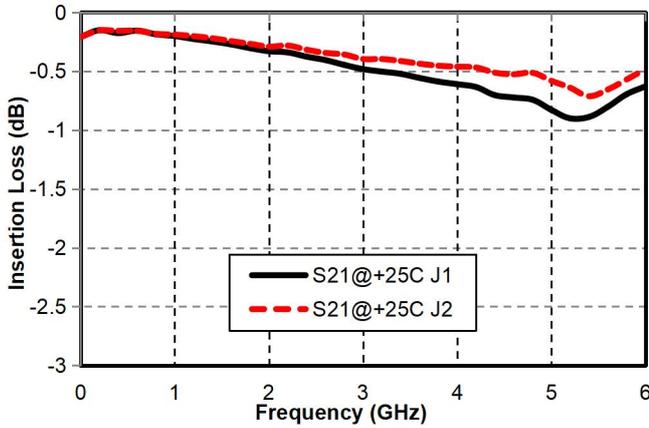
Electrical performance parameters (TA = +25°C , VDD = +5V, VC = 0/+5V)

Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	DC-4			G Hz
Insertion loss	-	0.4	-	dB
Isolation	-	38	-	dB
On-state input return loss	-	20	-	dB
On-state output return loss	-	20	-	dB
P-1dB	-	28	-	dBm
Switching speed	-	30	-	ns
Control high level	3	3.3	5	V
Control low level	0	-	0.8	V
Control current		1		m A
Voltage	-	+5	-	V
Quiescent Current	-	2	-	mA

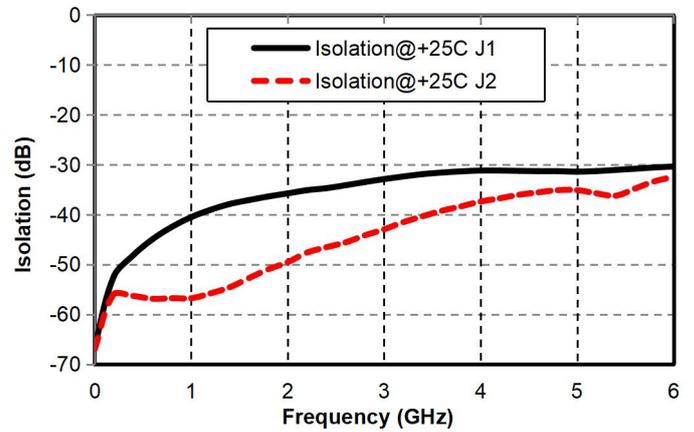
GaAs MMIC SPDT reflective switch chip, DC- 4 GHz

Main index test curve

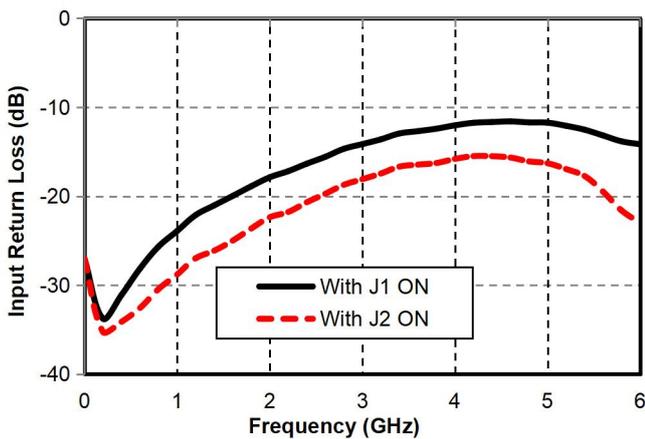
Insertion Loss vs. Operating Frequency



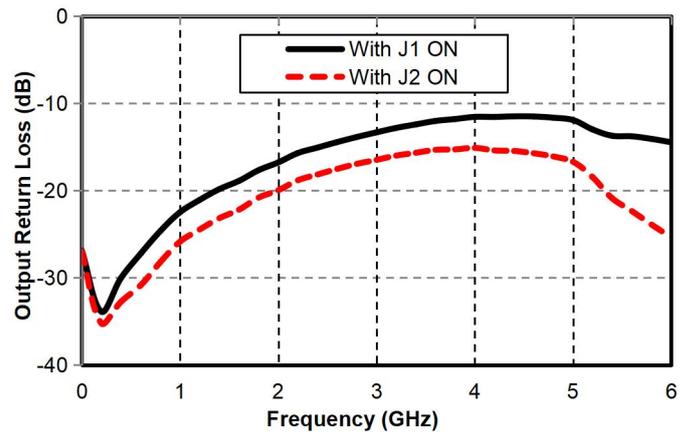
Isolation vs. Operating Frequency



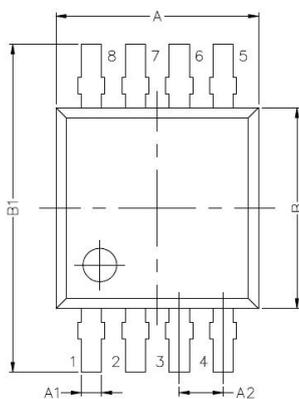
Input Return Loss vs. Operating Frequency



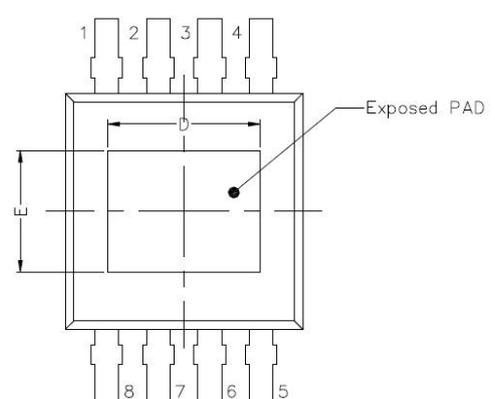
Output Return Loss vs. Operating Frequency



external structure

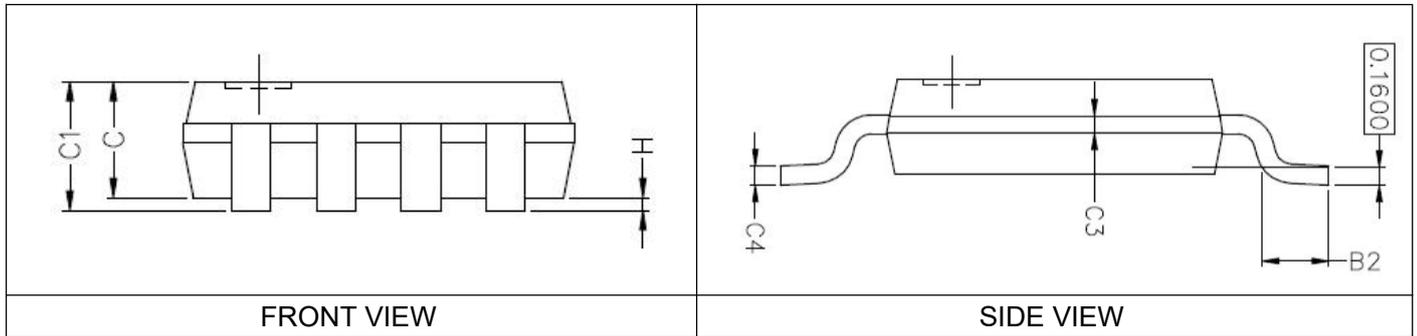


TOP VIEW



BOTTOM VIEW

GaAs MMIC SPDT reflective switch chip, DC- 5 GHz



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

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	VD	voltage
2	VC	Positive level control port
4	NC	Floating pin, can be grounded
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

GaAs MMIC SPDT reflective switch chip, DC- 4 GHz

Truth table

VD	VC	Path
+ 5V	+ 5V //(compatible with +3.3V)	RFC-RF 2
+ 5V	0V	RFC-RF 1

Application Circuit

