GSW - 0004DT-P-PD-CQ4

GaAs MMIC SPDT reflective switch chip, DC- 4 GHz

Performance characteristics

- Frequency range: DC - 4 GHz
- Insertion loss : 0.6 dB type
- Isolation: 46 dB type
- On-state VSWR : 1.2
- Integrated logic control (all positive)
- 50Ohm input/output
- QFN4X4mm

Product Introduction

GSW-0004DT-P-PD-CQ4 is a GaAs MMIC single-pole double-throw reflective switch chip, with 50Ω matching at the input/output end, a frequency range covering DC ~4 GHz , +5V power supply, 0V/+5V (compatible with +3.3V) positive level control, switching speed 20ns, 1dB compression input power + 28 dBm . The switch uses a 4X4mm surface-mount leadless ceramic tube shell to achieve airtight packaging, and the surface of the pin pad is gold-plated, which is suitable for reflow soldering installation process.

Use restriction parameter [1]	
Control voltage range	-0.5V ～ +6V
Supply voltage range	+6 V
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		GHz
Insertion loss	-	0.6	-	dB
Isolation	-	46	-	dB
On-state input return loss	-	20	-	dB
On-state output return loss	-	20	-	dB
P-1dB	-	28	-	dBm
Switching speed	-	20	-	ns
Control high level	3	3.3	5	V
Control low level	0	-	0.8	V
Control current		1	-	m A

Add: 101 cecil street #14-10, tong eng building singapore 069533
Email: info@standardcircuit.com
Web: www.standardcircuit.com
Tel: +65 82613258

Voltage	-	+5	-	V
Quiescent Current	-	2	-	mA

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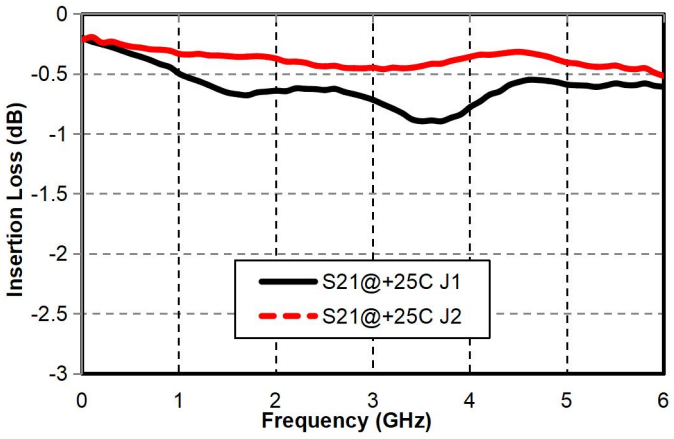
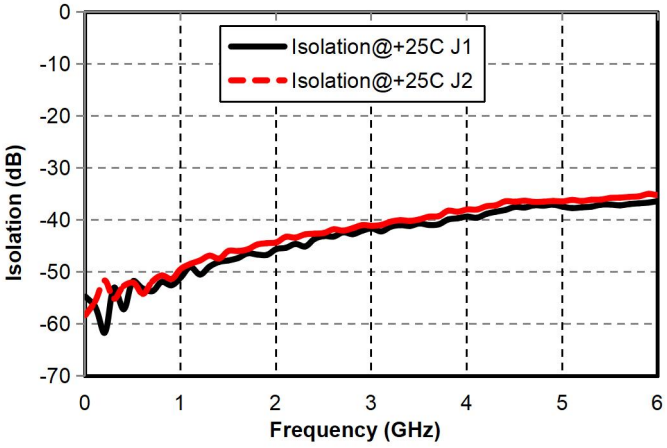
Main index test curve

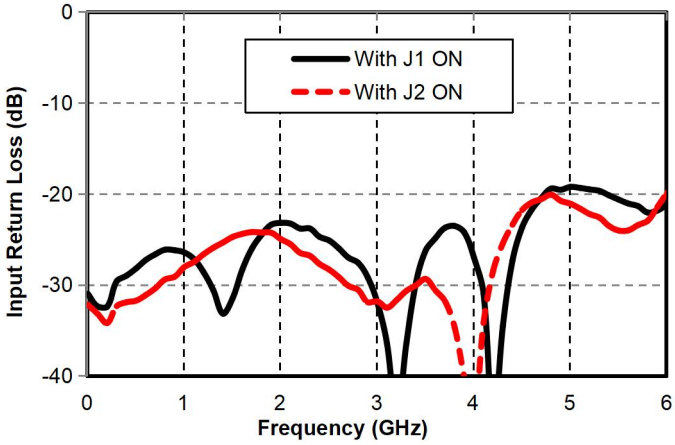
Insertion Loss vs. Operating Frequency



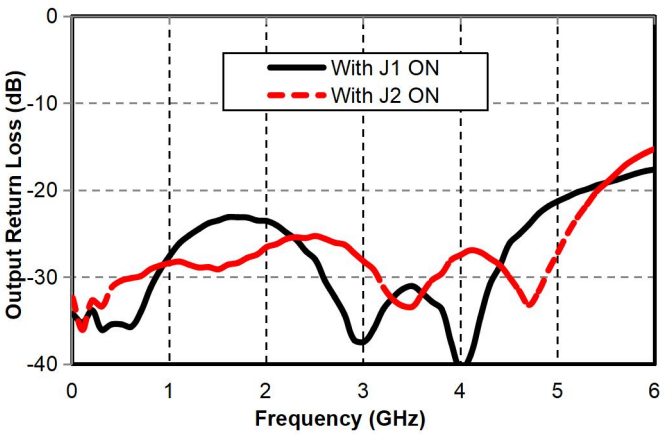
Isolation vs. Operating Frequency



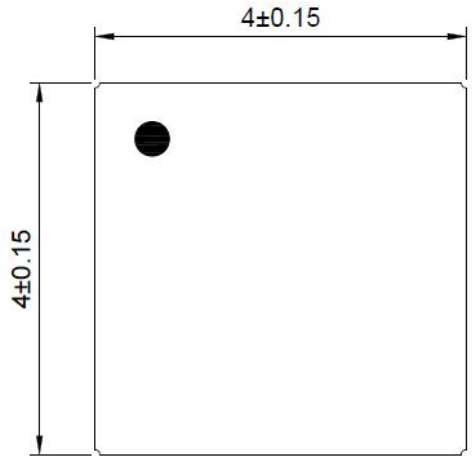
Input wave loss vs. operating frequency (on state)



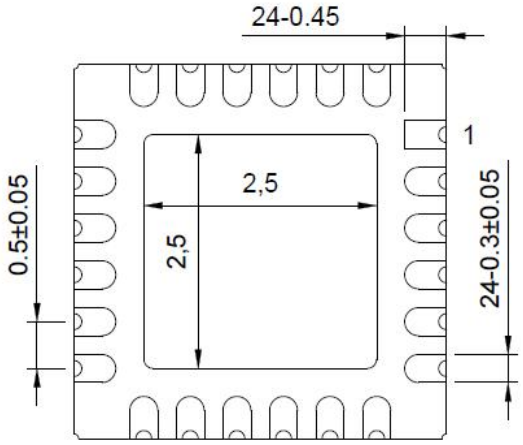
Output return loss vs. operating frequency (on state)



Appearance structure



Top view



Bottom view

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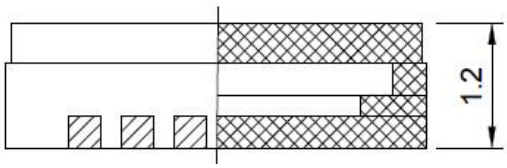
Appearance structure



Side View

The units in the figures are all in millimeters , and the tolerance is ±0.15 mm.

Truth table

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

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
10, 21	RF 2, RF 1	RF signal output terminal, no DC blocking capacitor inside , external DC blocking capacitor is required
15	VD	voltage

16	VC	Positive level control port
2 , 4 , 9, 11, 20, 22	GND	The pins need to be in good contact with the RF and DC grounds.
other	NC	The pin is left floating and can be grounded
Chip bottom	GND	needs to be in good contact with the RF and DC grounds

Application Circuit