



GW2108

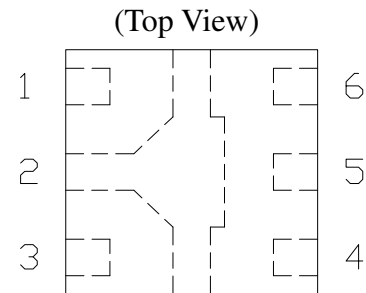
0.1 – 7.125GHz One-bit Control SPDT Switch

Ver0.1

■ Features

- WLAN 802.11 a/b/g/n/ac/ax Applications
- Low Insertion Loss: 0.3dB@2.5GHz
0.4dB@6.0GHz
- High Isolation: 37dB@2.5GHz
29dB@6.0GHz
- DFN 1.0x1.0mm 6 Leads Green Package
- Low Cost and Good Reliability Performance
- 1KV ESD Capability (HBM)

■ Pin Assignment



■ General Description

GW2108 is designed and fabricated in CMOS SOI technology. GW2108 features one control bit with low insertion loss and low DC power consumption. Typical applications are for the variety of analog and digital TX/RX wireless communication systems. GW2108 is housed in a DFN 1.0x1.0mm 6 leads plastic package.

Pin No.	Pin Name	Description
1	RF1	Output1 Port
2	GND	Ground
3	RF2	Output2 Port
4	VC	Control Voltage
5	RFC	Antenna Port
6	VDD	Supply Voltage

■ Recommended Operating Conditions

Parameter	MIN.	MAX.	Unit
Operating frequency	0.1	7.125	GHz
Supply Voltage (VDD)	+1.6	+3.5	V
Control Voltage High	0.7xVDD	VDD	V
Control Voltage Low	0	0.3xVDD	V

■ Absolute Maximum Ratings

Parameter	Absolute Maximum	Unit
Supply Voltage	4	V
Control Voltage	4	V
Max input Power	33	dBm
Operating Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C

Note: operational exceeding any one of these limits may cause permanent damage to this device.



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■ Electrical Specifications at 25°C with (0, +3.3V) Control Voltages

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	2.4–2.5GHz	-	0.30	0.45	dB
	3.6–3.8GHz	-	0.35	0.50	
	4.9–6.0GHz	-	0.40	0.55	
	6.0–7.125GHz	-	0.45	0.65	
Isolation (RF1 to RFC , RF2 to RFC)	2.4–2.5GHz	32	37	-	dB
	3.6–3.8GHz	29	34	-	
	4.9–6.0GHz	27	29	-	
	6.0–7.125GHz	20	25	-	
Isolation (RF1 to RF2)	2.4–2.5GHz	30	35	-	dB
	3.6–3.8GHz	25	30	-	
	4.9–6.0GHz	20	25	-	
	6.0–7.125GHz	20	23	-	
Input/Output Return Loss	2.4–2.5GHz	-	20	-	dB
	3.6–3.8GHz	-	15	-	
	4.9–6.0GHz	-	15	-	
	6.0–7.125GHz	-	15	-	
Input Power for 0.1 dB compression	2.4GHz	-	32	-	dBm
	3.6GHz	-	32	-	
	5.8GHz	-	32	-	
2nd Harmonics	f=2.45GHz, Pin=25dBm	-	89	-	dBc
3rd Harmonics		-	87	-	
Switching Rise Time Switching Fall Time Switching On Time Switching Off Time	10/90% RF 90/10% RF 50% CTL to 10/90% RF 50% CTL to 90/10% RF	-	80 60 120 120	-	ns
Control Current	Input Power 0dBm	-	25	-	μA
Supply Current		-	25	-	μA

Notes: (1) All items are tested in 50Ω system, unless otherwise specified.

■ Truth Table

VC	Low Insertion Loss Path
High	RFC-RF1
Low	RFC-RF2

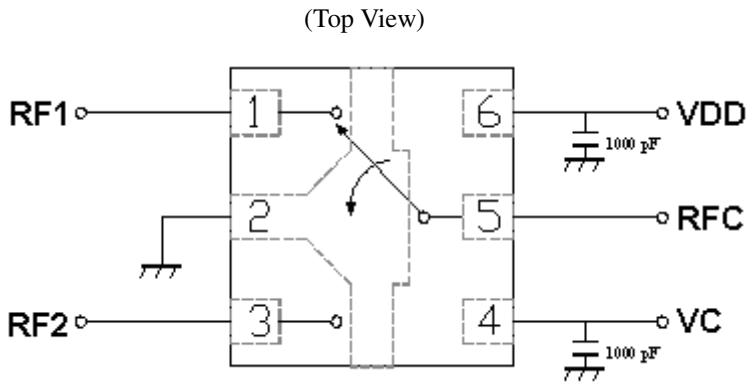


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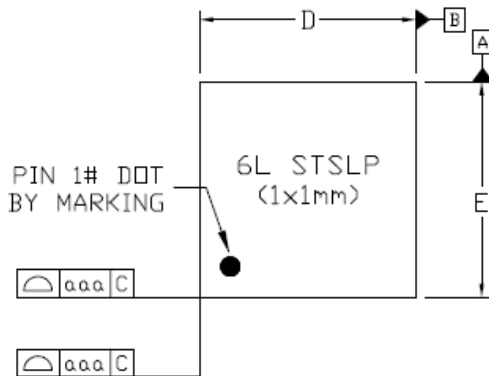
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■ Application Circuit

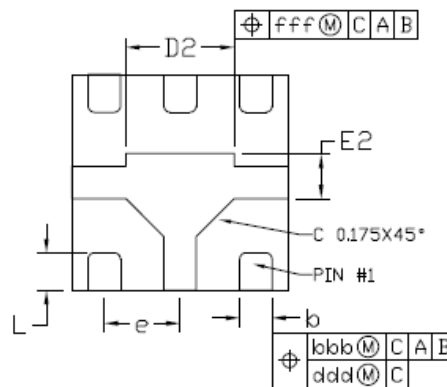


Note: Exposed pad in the bottom must be connected to ground by via holes.

■ DFN 1.0x1.0mm 6Lead Package Dimensions (Unit: mm)

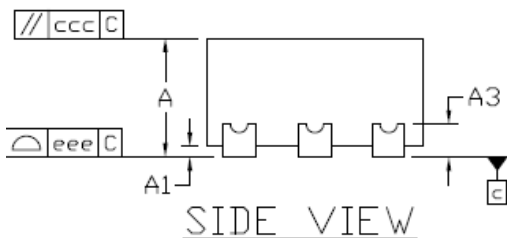


TOP VIEW



BOTTOM VIEW

Dimensional Ref.			
REF.	Min.	Nom.	Max.
A	0.450	0.550	0.600
A1	0.00	---	0.050
A3	0.152 Ref.		
D	0.950	1.000	1.050
E	0.950	1.000	1.050
D2	0.450	0.500	0.550
E2	0.160	0.210	0.260
b	0.100	0.150	0.200
e	0.350 BSC		
L	0.125	0.175	0.225
Tol. of Form&Position			
aaa	0.10		
bbb	0.10		
ccc	0.10		
ddd	0.05		
eee	0.08		
fff	0.10		



SIDE VIEW

Notes

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER JEDEC MO-220.

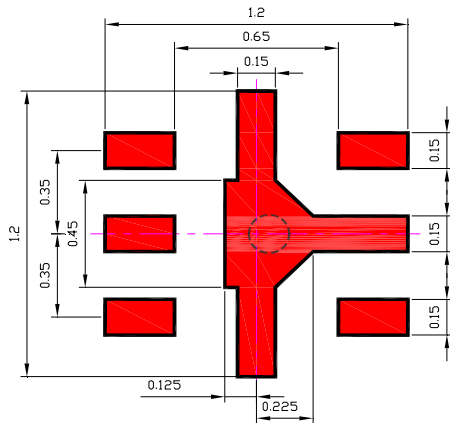


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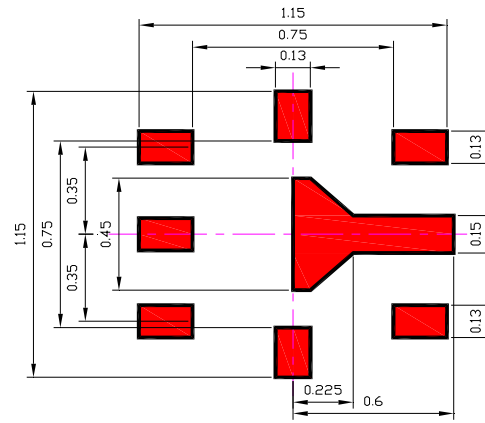
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■ Mounting Pad and Solder Mask Layout Dimensions (Unit: mm)



Mounting Pad



Solder Pad

Stainless thickness : 0.1mm~0.08mm

Remark : The mounting pad layouts in this document are for reference only.