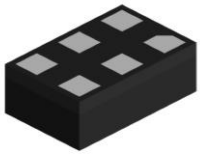
WS7802C

0.1GHz – 3GHz SPDT Antenna Switch

http//:www.sh-willsemi.com

Descriptions

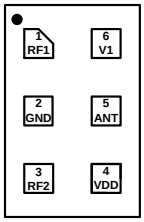
The WS7802C is a single-pole, double-throw (SPDT) switch. The device is optimized for 4G routing and diversity applications. The high linearity performance and low insertion loss make the device an ideal choice for WCDMA/LTE handset and data card applications. The WS7802C is provided in a compact Dual Flat No-lead Package (DFN) 1.1 x 0.7 mm^2 package.



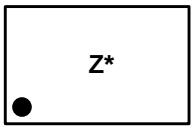
DFN 1.1X0.7-6L (Bottom view)

Features

- Small, low profile package 1.1mm x 0.7mm x 0.55mm
- Working frequency up to 3GHz
- Very low insertion loss
- Excellent isolation performance
- Low power consumption
- Exceptional linearity performance for WCDMA/LTE application
- Low harmonic generation
- Very good ESD performance



Pin configuration (Top view)



Z = Device code

* = Month code（A~Z）

Marking(Top view)

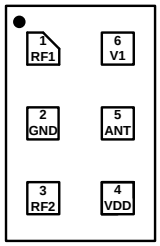
Applications

- Cell phones
- Tablets
- Other RF front-end modules

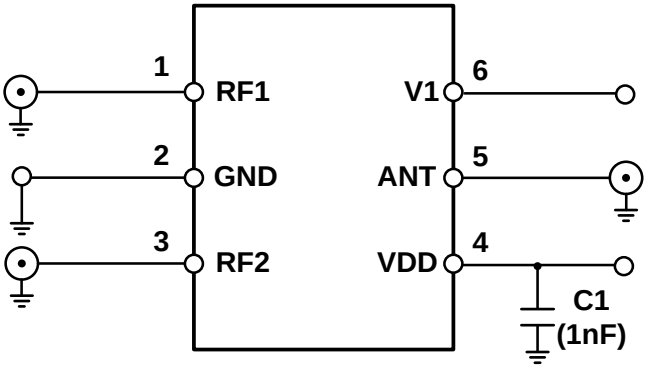
Order information

Device	Package	Shipping
WS7802C-6/TR	DFN 1.1X0.7-6L	3000/Reel&Tape

Pinning information

Pin	Function	Description	Transparent top view
1	RF1	RF port 1	
2	GND	Ground	
3	RF2	RF port 2	
4	VDD	DC power supply	
5	ANT	RF common (antenna) port	
6	V1	DC control voltage 1	

Application information



Recommended operating conditions

Parameters	Conditions	Specifications			Unit
		Min.	Typ.	Max.	
ESD Rating					
ESD All Pins	HBM, JESD22-A114			1500	V
Power Supply					
Power Supply Voltage	Operating Voltage	2.4	2.8	3.0	V
Power Supply Current	VDD≤3.0V	20	28	40	μA
Control Voltage					
Logic Control "Low"		0	0	0.3	V
Logic Control "High"		1.2	1.8	2.7	V
RF Impedance					
RF Port Input and Output Impedance			50		Ω

Absolute maximum ratings

Maximum ratings are absolute ratings, exceeding only one of these values may cause irreversible damage to the integrated circuit.

Items	Value	Unit
VDD Voltage	-0.3 to +3.0	V
Control Voltage	-0.3 to +2.7	V
Maximum Input Power @ RF ports 50Ω, CW, +25°C	29@0.7GHz to 1.0GHz 30@1.0GHz to 2.0GHz 31@2.0GHz to 2.7GHz	dBm
Operation Temperature	-40 to +85	°C
Storage Temperature	-65 to +150	°C

Characteristics (RF spec)

Normal test condition unless otherwise stated. All unused ports are 50Ω terminated.
VDD=2.8V, Temp=+25°C. P_{IN}=0dBm.

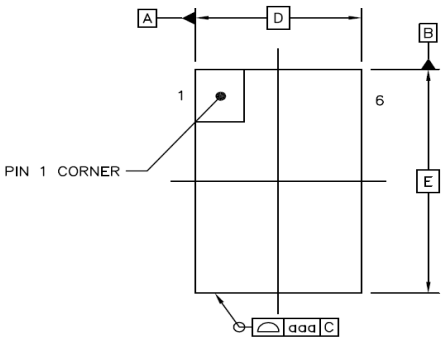
Parameters	Conditions	Specifications			Unit
		Min.	Typ.	Max.	
Insertion Loss (RF1/RF2)	0.1GHz to 1.0GHz 1.0GHz to 2.0GHz 2.0GHz to 2.7GHz		0.40 0.45 0.50	0.55 0.60 0.65	dB
Isolation (ANT to RF1/RF2)	0.1GHz to 1.0GHz 1.0GHz to 2.0GHz 2.0GHz to 2.7GHz	30 26 24	32 28 26		dB
Input Return Loss (ANT to RF1/RF2)	0.1GHz to 1.0GHz 1.0GHz to 2.0GHz 2.0GHz to 2.7GHz	25 26 23	28 28 26		dB
Second Harmonics (RF1/RF2)	0.7GHz to 1.0GHz, P_{IN}=+26dBm 1.0GHz to 2.0GHz, P_{IN}=+26dBm 2.0GHz to 2.7GHz, P_{IN}=+26dBm		82 85 86		dBc
Third Harmonics (RF1/RF2)	0.7GHz to 1.0GHz, P_{IN}=+26dBm 1.0GHz to 2.0GHz, P_{IN}=+26dBm 2.0GHz to 2.7GHz, P_{IN}=+26dBm		73 75 76		dBc
0.1dB Compression Point (RF1/RF2)	0.7GHz to 1.0GHz 1.0GHz to 2.0GHz 2.0GHz to 2.7GHz		29 30 31		dBm
3rd Order Input Intercept Point (RF1/RF2)	0.7GHz to 2.7GHz P_{IN}=+26dBm Δf=1MHz		55		dBm

Truth Table for Operation

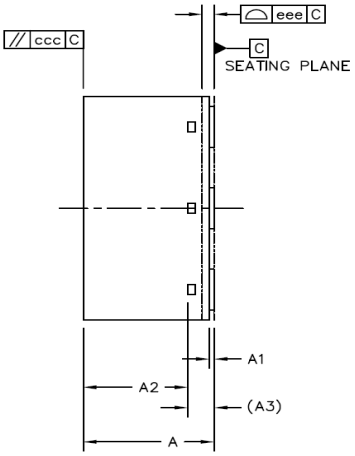
Mode	V1
RF1	1
RF2	0

Package outline dimensions

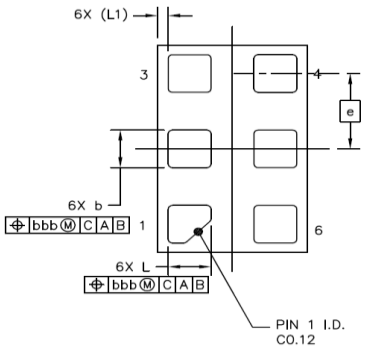
DFN1107-6L



TOP VIEW



SIDE VIEW

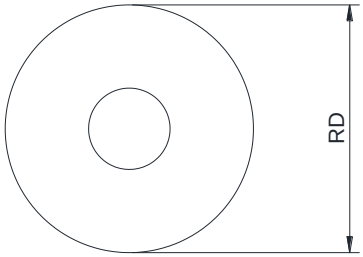


BOTTOM VIEW

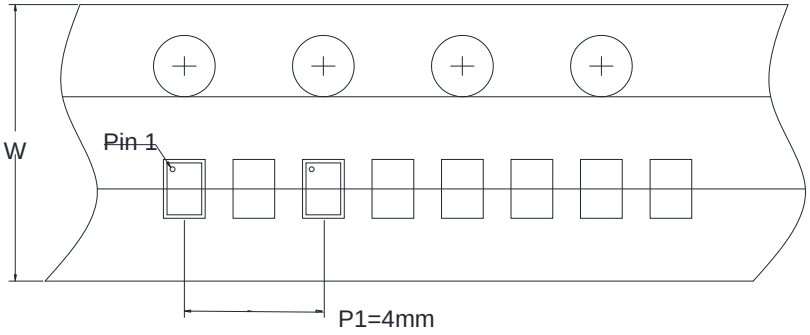
		SYMBOL	MIN	NOM	MAX
TOTAL THICKNESS		A	0.5	0.55	0.6
STAND OFF		A1	−0.004	0.02	0.046
MOLD THICKNESS		A2	---	0.44	---
L/F THICKNESS		A3		0.110 REF	
LEAD WIDTH		b	0.15	0.20	0.25
BODY SIZE	X	D		0.7 BSC	
	Y	E		1.1 BSC	
LEAD PITCH		e		0.4 BSC	
EP SIZE	X	D2	---	---	---
	Y	E2	---	---	---
LEAD LENGTH		L	0.15	0.2	0.25
LEAD TIP TO EXPOSED PAD EDGE		K		---	
LEAD EDGE TO PACKAGE		L1		0.05 REF	
PACKAGE EDGE TOLERANCE		aaa		0.1	
MOLD FLATNESS		ccc		0.1	
COPLANARITY		eee		0.05	
LEAD OFFSET		bbb		0.1	
EXPOSED PAD OFFSET		fff		---	

Tape and reel information

Reel Dimensions

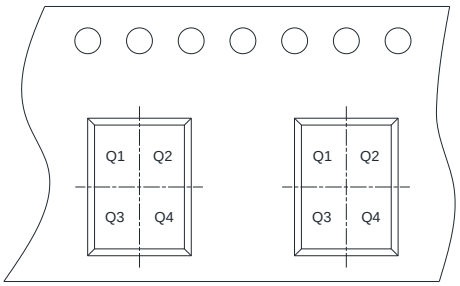


Tape Dimensions



Note：Tape material is plastic. Pitch between successive cavity centers is 2mm.

Quadrant Assignments For PIN1 Orientation In Tape





User Direction of Feed

RD	Reel Dimension	☑ 7inch ☐ 13inch
W	Overall width of the carrier tape	☑ 8mm ☐ 12mm ☐ 16mm
P1	Pitch between successive chip centers	☐ 2mm ☑ 4mm ☐ 8mm
Pin1	Pin1 Quadrant	☑ Q1 ☐ Q2 ☐ Q3 ☐ Q4