

Product Features

- Excellent Insertion Loss and Isolation performance
- High Linearity
- GPIO Control Interface
- Broadband frequency range: 0.1 to 7.125 GHz
- Small package: QFN-12 2.0mm x 2.0mm x 0.55mm
- No DC blocking capacitors required
- 1kV HBM ESD Protection on all pins

Product Applications

- WiFi High Power Application
- WiFi 6/5/4 Routers and CPE

Product Description

The LX3374 is a Silicon On Insulator (SOI) Single Pole, Double Throw (SPDT) antenna switch which require very low insertion loss, high isolation and high linearity performance.

The high linearity performance and low insertion loss for UMTS, CDMA2000, and LTE applications. The LX3374 is manufactured in a compact 2.0mm x 2.0mm x 0.55mm, 12-pin surface mount QFN package.

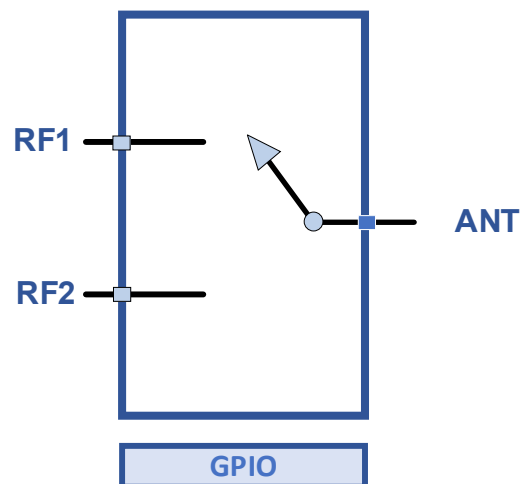


Figure 1 Functional Block Diagram

Absolute Maximum Conditions

Parameters	Symbol	Minimum	Maximum	Units
Supply voltage	V_{DD}	2.5	4.8	V
Control voltage	V_{CTL}		3.6	V
RF input power	P_{in}		+38	dBm
Storage temperature	T_{STG}	-55	+125	°C
Operating temperature	T_{OP}	-40	+90	°C
Human Body Model, Class 1C	ESD	1000		V

1: Test condition 50% duty cycle, VSWR=1:1, +25 °C

Note: Exposure to maximum rating conditions for extended periods may reduce device reliability. There is no damage to device with only one parameter set at the limit and all other parameters set at or below their nominal value. Exceeding any of the limits listed here may result in permanent damage to the device.

General Electrical Specifications

Parameters	Symbol	Test Condition	Min.	Typ.	Max.	Units
Supply voltage	V_{DD}		2.5	2.8	3.6	V
Supply current, active mode	I_{DD}			60	90	μA
Control signal: High Low	V_{CTL}		1.35	1.8	2.70 0.3	V
Control current: High Low	I_{CTL}			1		μA
Turn-on time (PIN = +27 dBm)	T_{ON}	Measured from 50% of final V_{DD} supply voltage to 90% of RF power		5		μs
Switching time (PIN = +27 dBm)	T_{SW}	Measured from 50% of final V_{DD} supply voltage to 90% of RF power		1		μs

($V_{DD} = 2.8$ V, $V_{CT} = 1.8$ V, $T_{OP} = +25$ °C, Characteristic Impedance $[Z_0] = 50$ Ω, Unless Otherwise Noted)

RF Specifications

Parameters	Symbol	Test Condition	Min.	Typ.	Max.	Units
Operating frequency	f		0.1		7.125	GHz
Insertion loss	IL	Up to 1.0 GHz Up to 2.2 GHz Up to 3.0 GHz Up to 4.9 GHz Up to 6.0 GHz Up to 7.2 GHz		0.35 0.40 0.45 0.55 0.70 0.80	0.40 0.45 0.50 0.60 0.75 0.90	dB
Isolation (RF1 port to any receive port)	Iso	Up to 1.0 GHz Up to 2.2 GHz Up to 3.0 GHz Up to 4.9 GHz Up to 6.0 GHz Up to 7.2 GHz		42 40 32 28 24 22		dB
Isolation (Active RF Ports to other inactive RF Ports)	Iso	Up to 1.0 GHz Up to 2.2 GHz Up to 3.0 GHz Up to 4.9 GHz Up to 6.0 GHz Up to 7.2 GHz		48 45 38 35 28 25		dB
Return loss	RL	All ports, up to 7.0 GHz		13		dB
2nd Order harmonics	2fo	Pin = +26 dBm, 900MHz		-72		dBm
3rd Order harmonics	3fo	Pin = +26 dBm, 900MHz		-70		dBm
0.1 dB Compression Point 50% duty cycle, VSWR=1:1	P0.1dB	900M, 50Ω		+38		dBm

Truth Table

VC1	VC2	ANT-RFX
0	0	OFF
0	1	RF1-RF3 ON
1	0	RF1-RF2 ON

Pin-out Information

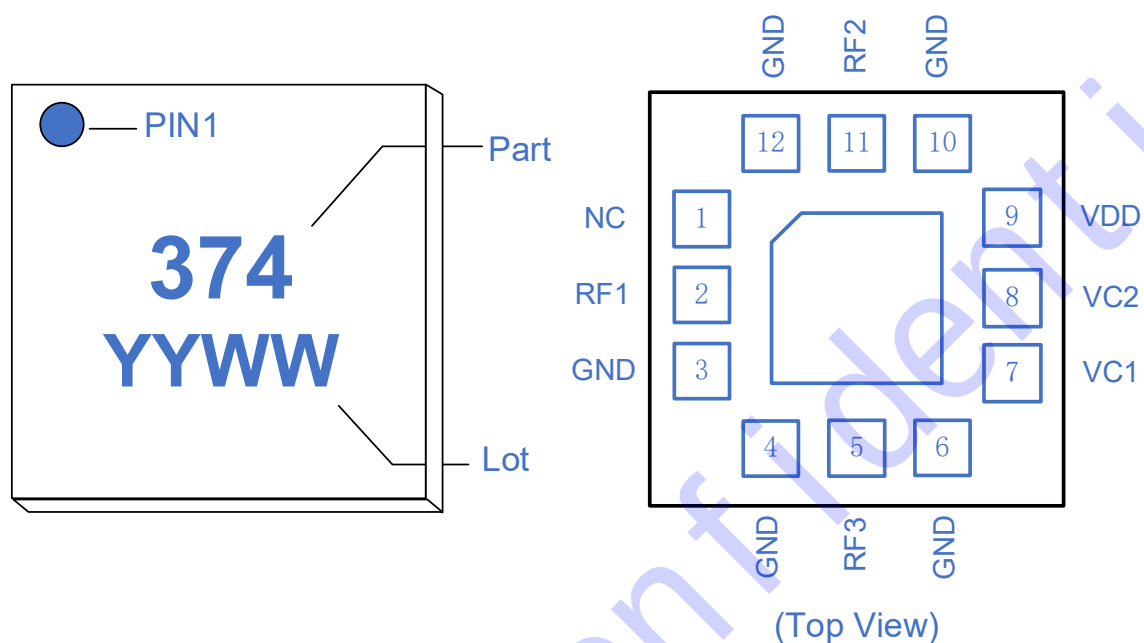


Figure 2 Pin-out Information

Table 1. Pin Description

Pin #	Name	Description	Pin #	Name	Description
1	NC	Not Connect	7	VC1	Control Pin 1
2	RF1	RF Port 1	8	VC2	Control Pin 2
3	GND	Ground	9	VDD	Power Supply
4	GND	Ground	10	GND	Ground
5	RF3	RF Port 3	11	RF2	RF Port 2
6	GND	Ground	12	GND	Ground

Application circuit

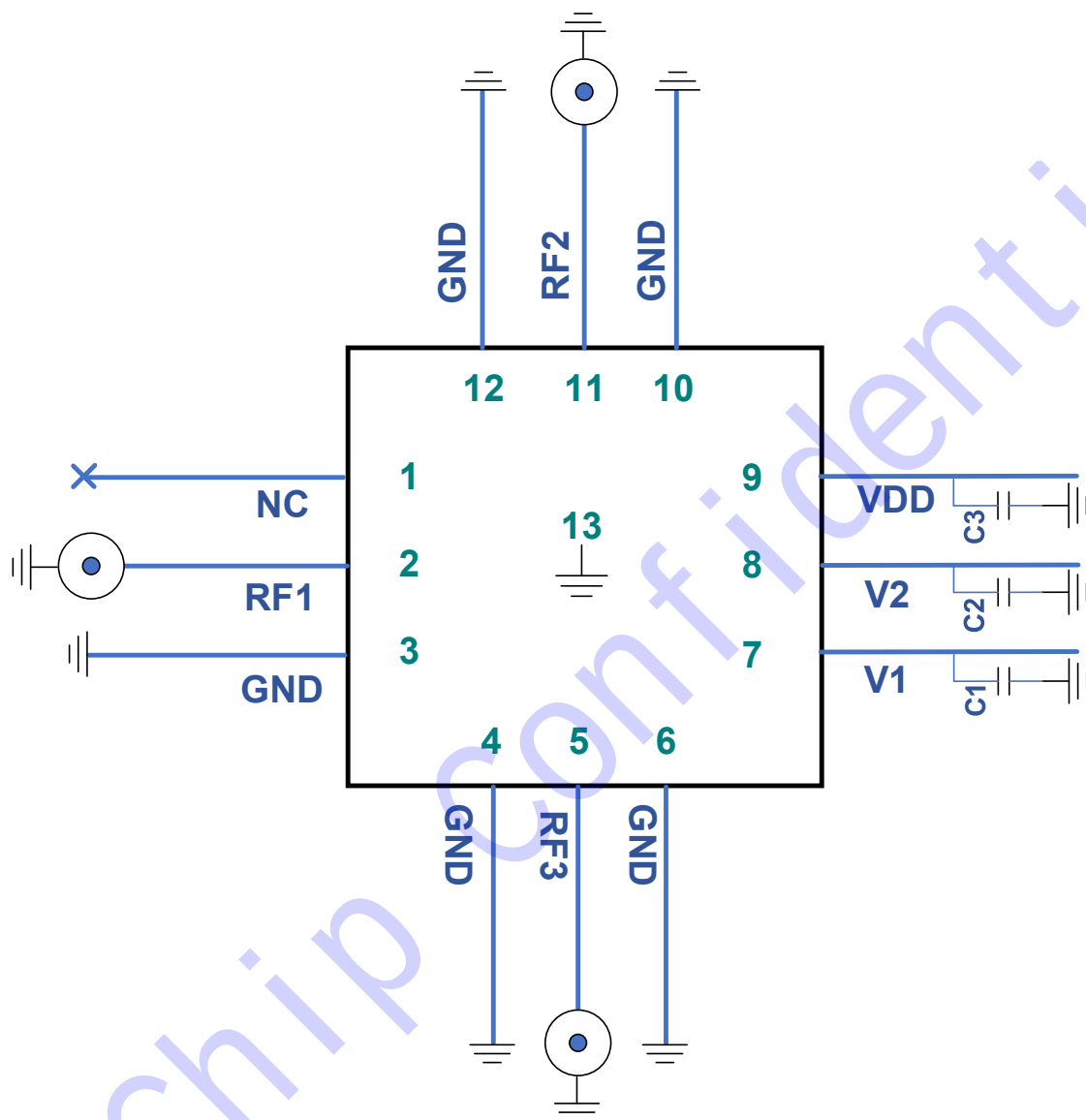
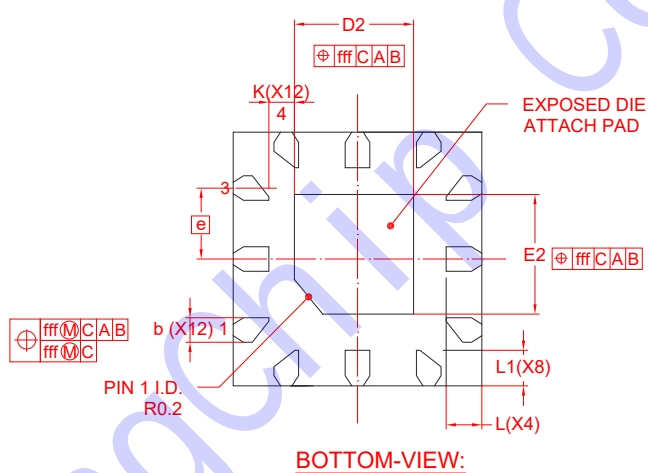
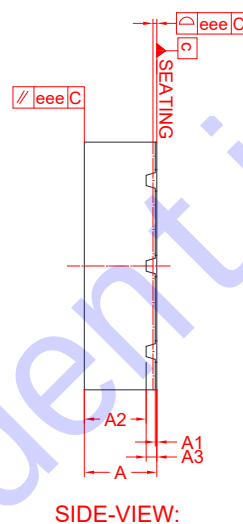
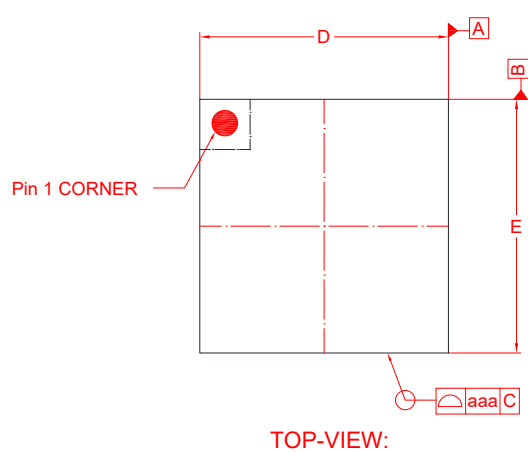


Figure 3 Application circuit

Package Outline Dimension



SYMBOL	MIN	NOM	MAX
A	0.5	0.55	0.6
A1	0.00	0.02	0.05
A2	-	0.4	-
A3	0.152 REF		
b	0.15	0.2	0.25
D	2 BSC		
E	2 BSC		
e	0.5 BSC		
D2	0.66	0.76	0.86
E2	0.66	0.76	0.86
L	0.25	0.3	0.35
L1	0.2	0.3	0.4
K	0.32 REF		
aaa	0.1		
ccc	0.05		
bbb	0.1		
ddd	0.05		
fff	0.1		

Figure 5 Package Outline Dimension

Package Dimensions (3000pcs)

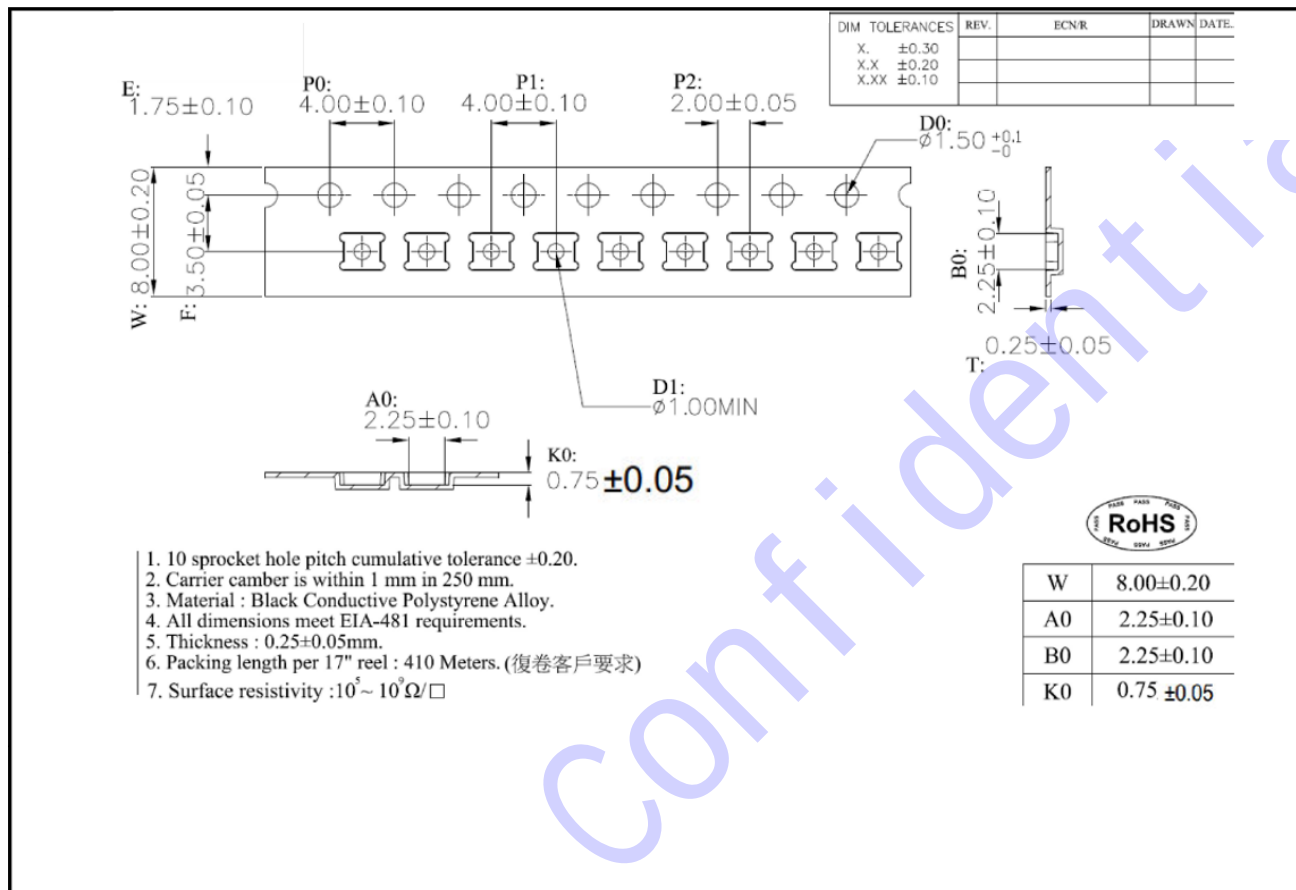


Figure 6 Tape and Reel Dimensions

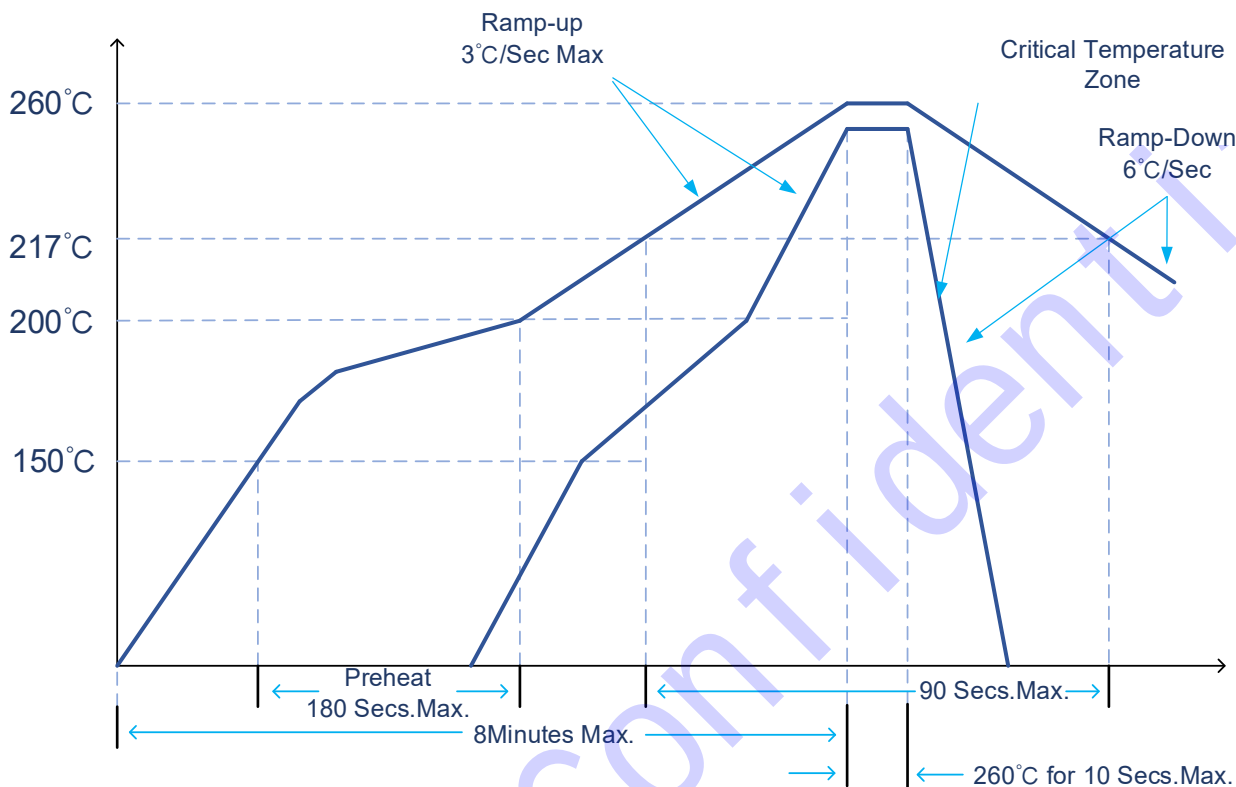
Declaration of No Harmful Substances

This part is compliant with 2005/20/EC packaging directive, 1907/2006/EC REACH directive and the 2011/65/EU RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment), as amended by Directive 2015/863/EU.

This product also has the following attributes:

- Lead free
- Halogen Free (Chlorine, Bromine)
- SVHC Free

Reflow Chart



NOTE: Reflow Profile with 240°C peak also acceptable.