

## 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 LX3472 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 LX3472 is manufactured in a compact 2.0mm x 2.0mm x 0.55mm, 12-pin surface mount QFN package.

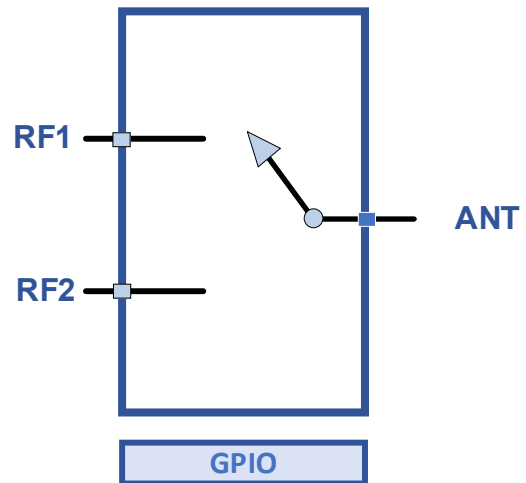


Figure 1 Functional Block Diagram

## Absolute Maximum Conditions

Parameters	Symbol	Minimum	Maximum	Units
Supply voltage	V <sub>DD</sub>	2.5	4.8	V
Control voltage	V <sub>CTL</sub>		3.6	V
RF input power	P <sub>in</sub>		+38	dBm
Storage temperature	T <sub>STG</sub>	-55	+125	°C
Operating temperature	T <sub>OP</sub>	-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 <sub>DD</sub>		2.5	2.8	3.6	V
Supply current, active mode	I <sub>DD</sub>		60		80	μA
Control signal: High Low	V <sub>CTL</sub>		1.35	1.8	3.30 0.3	V
Control current: High Low	I <sub>CTL</sub>			1		μA
Turn-on time (PIN = +27 dBm)	T <sub>ON</sub>	Measured from 50% of final VDD supply voltage to 90% of RF power		5		μs
Switching time (PIN = +27 dBm)	T <sub>SW</sub>	Measured from 50% of final VDD supply voltage to 90% of RF power		1		μs

(VDD = 2.8 V, VCT = 1.8 V, TOP = +25 °C, Characteristic Impedance [ZO] = 50 Ω, Unless Otherwise Noted)

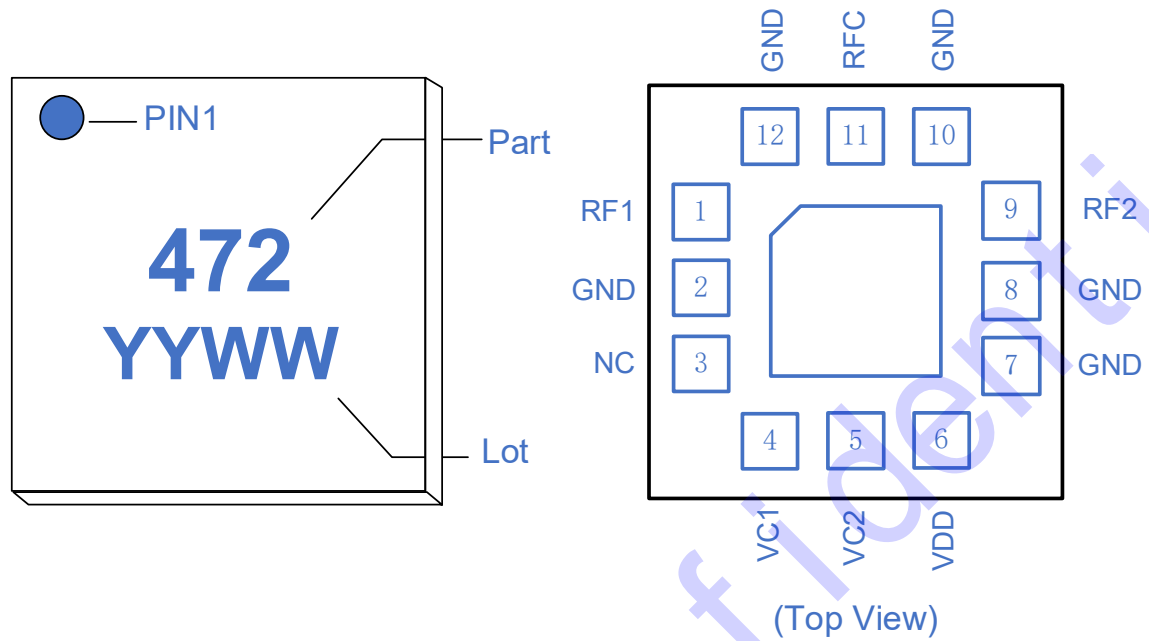
## RF Specifications

Parameters	Symbol	Test Condition	Min.	Typ.	Max.	Units
Operating frequency	f		0.1		7.125	GHz
Insertion loss	IL	Up to 1.0 GHz		0.35	0.40	dB
		Up to 2.2 GHz		0.40	0.45	
		Up to 3.0 GHz		0.45	0.50	
		Up to 4.9 GHz		0.55	0.60	
		Up to 6.0 GHz		0.70	0.75	
		Up to 7.2 GHz		0.80	0.90	
Isolation (ANT port to any receive port)	Iso	Up to 1.0 GHz		42		dB
		Up to 2.2 GHz		40		
		Up to 3.0 GHz		32		
		Up to 4.9 GHz		28		
		Up to 6.0 GHz		24		
		Up to 7.2 GHz		22		
Isolation (Active RF Ports to other inactive RF Ports)	Iso	Up to 1.0 GHz		48		dB
		Up to 2.2 GHz		45		
		Up to 3.0 GHz		38		
		Up to 4.9 GHz		35		
		Up to 6.0 GHz		28		
		Up to 7.2 GHz		25		
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	ANT-RF1 on
1	0	ANT-RF2 on

## Pin-out Information



**Table 1. Pin Description**

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

## Application circuit

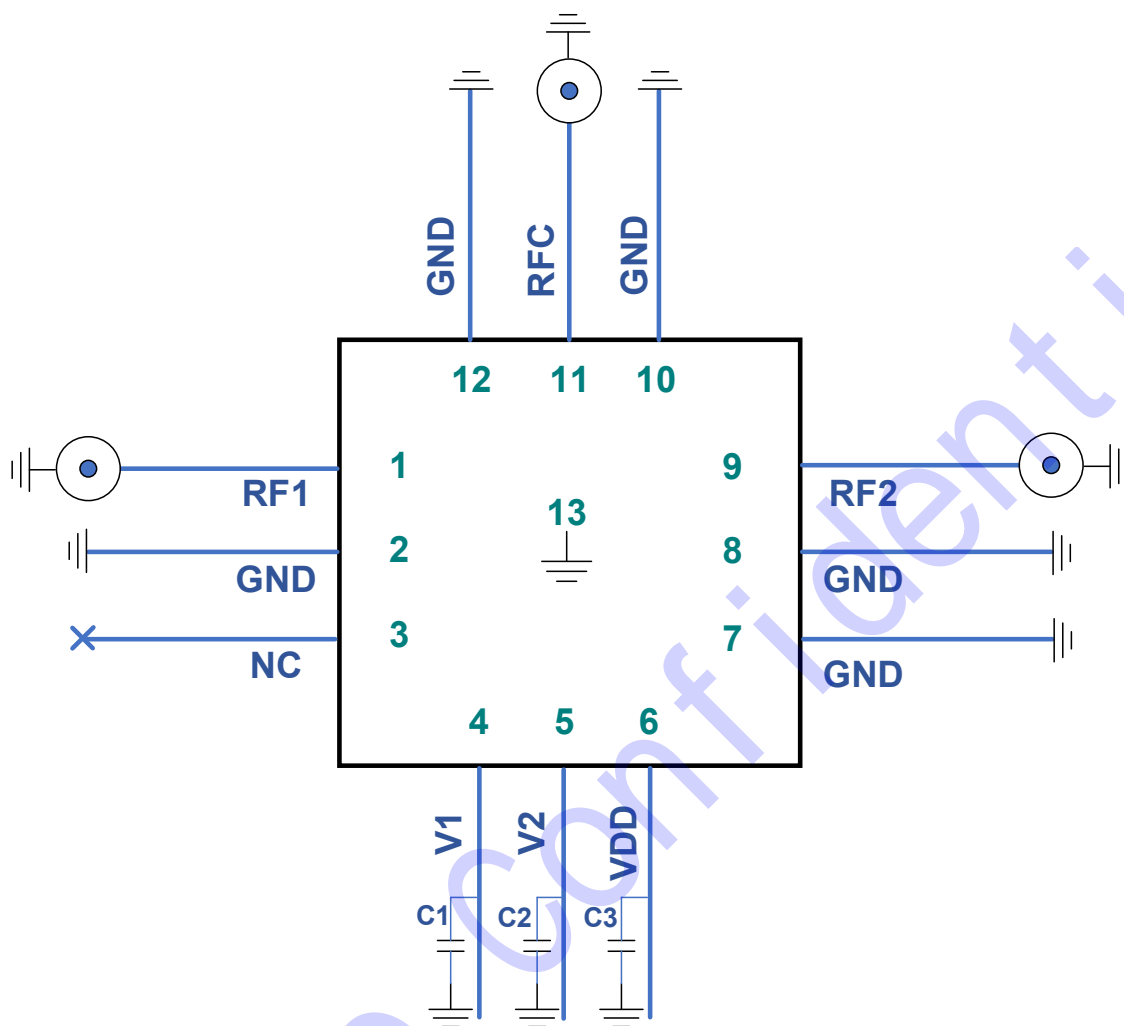


Figure 3 Application circuit

## Evaluation Board

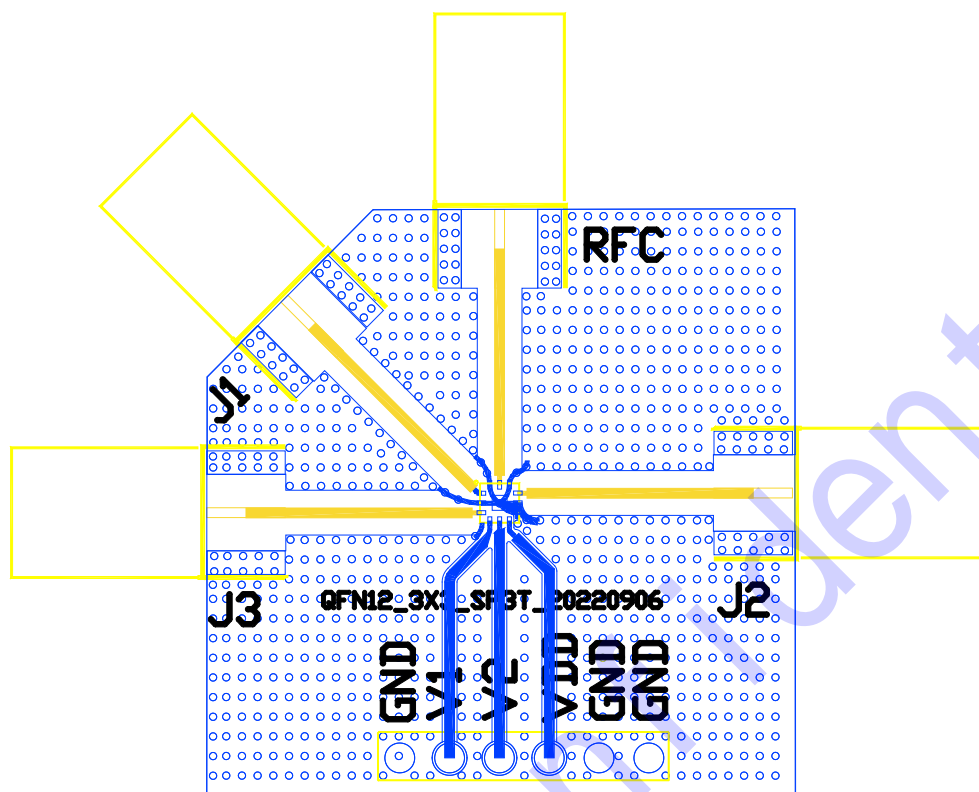
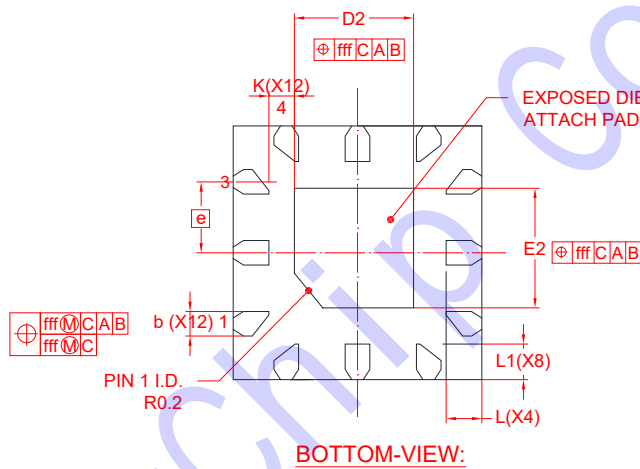
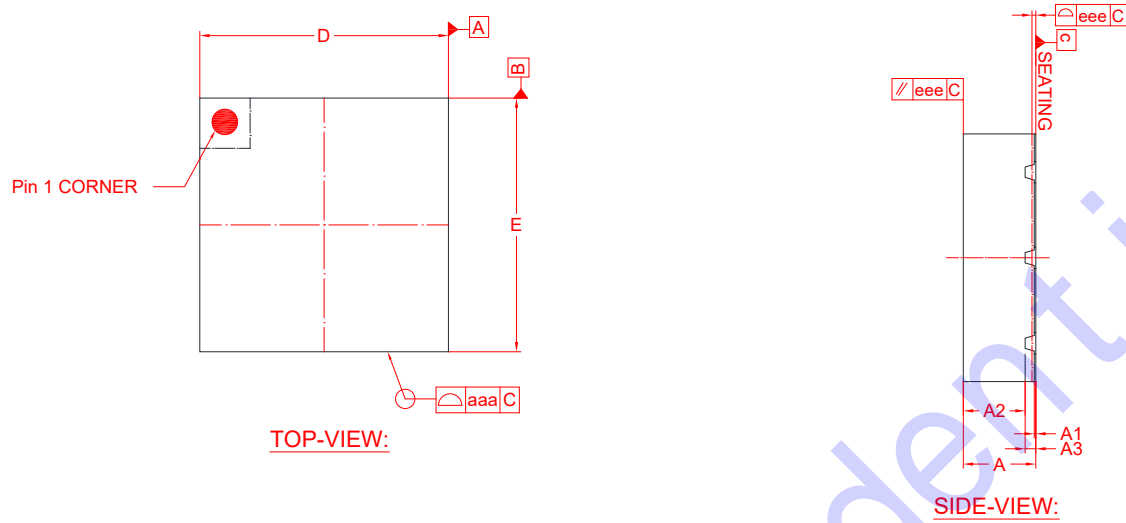


Figure 4 Evaluation Board Assembly Diagram

## 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)

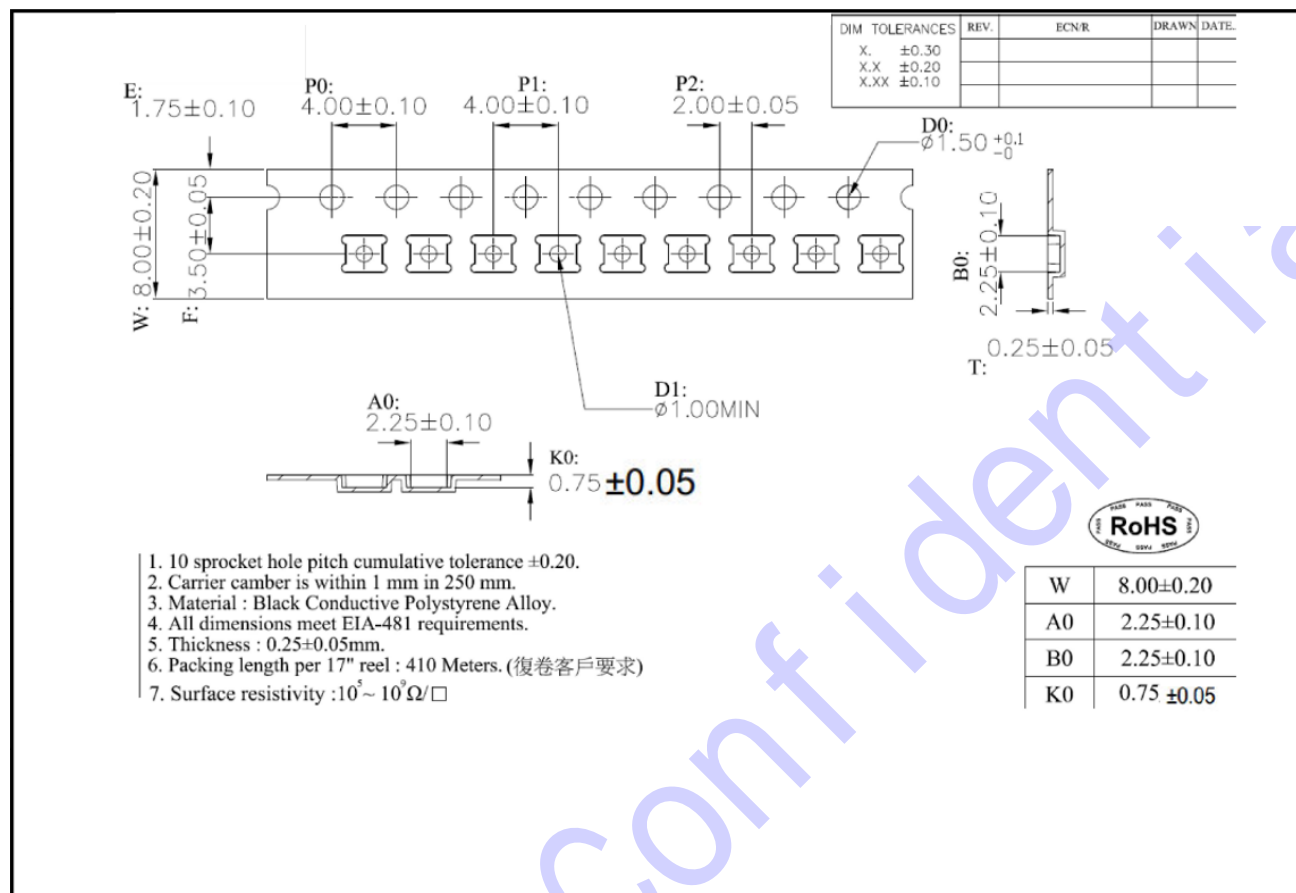


Figure 6 Tape and Reel Dimensions

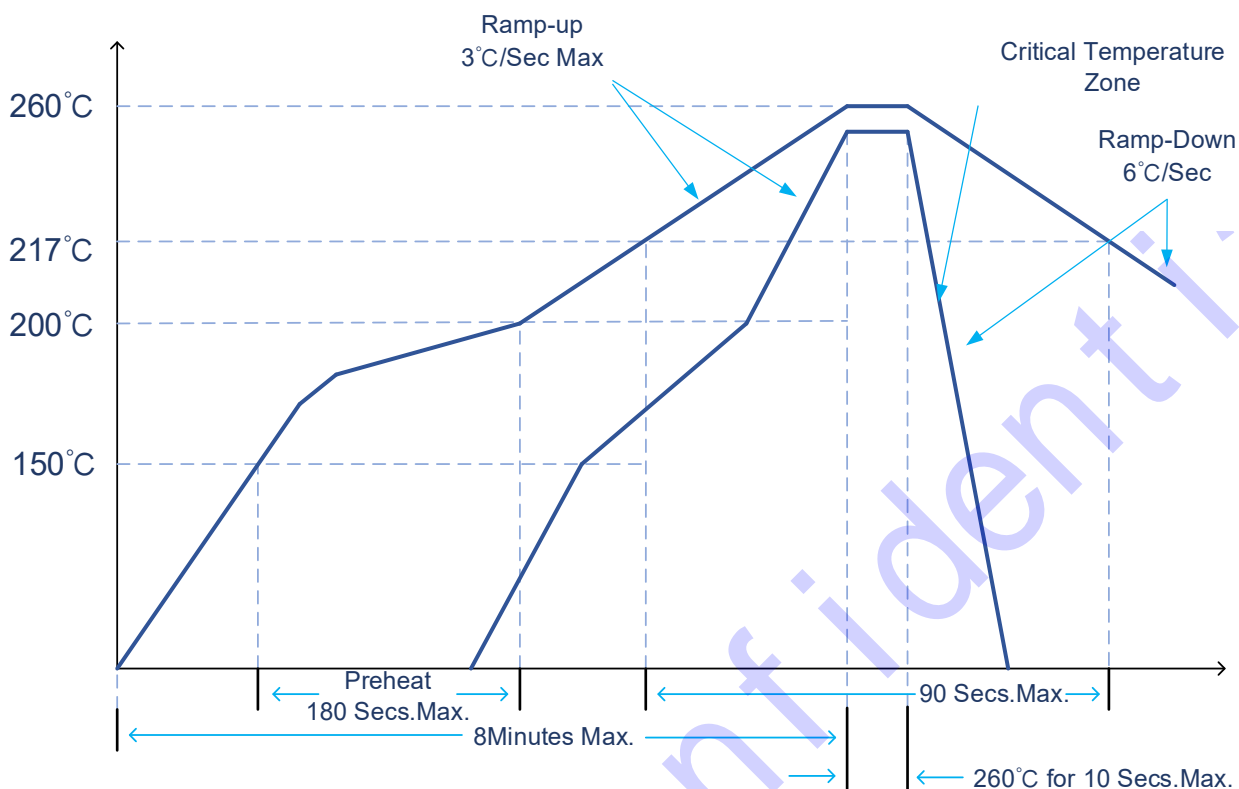
## Declaration of No Harmful Substances

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.