Advanced Semiconductor Business Inc.

ANM1730

Internally Matched LNA Module

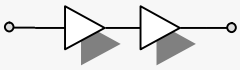
Features

- Application in 1300~3500 MHz
- All Components Inside SiP (8x8x1.2 mm),
- 0.55 dB NF at 1950 MHz
- Single Supply

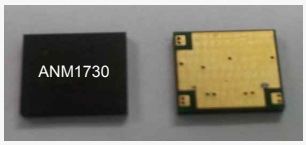
Description

The ALN1730 is the compactly designed surface-mount SiP LNA for the use in the infrastructure equipment of the mobile wireless (LTE, GSM, PCS, WCDMA, WLAN, WiBro, WiMAX) and so on. It has an exceptional performance of low noise figure, high gain, high OIP3, and low bias current from 1700MHz to 3000MHz frequency band. The surface-mount module package including the completed matching circuit and other components necessary just in case allows very simple and convenient implementation onto the system board in mass production level.

RoHS-compliant GREEN Package



2-stage Single Type



Typical Performance

Parameters	Units	Typical		
Frequency	MHz	1750	1950	2600
Gain	dB	27.3	24.7	20.0
S11	dB	-21	-21	-19
S22	dB	-20	-18	-11
Output IP3[1)]	dBm	35	35	35.5
Noise Figure	dB	0.5	0.55	0.8
Output P1dB	dBm	19.5	19.5	20
Current	mA	95	95	95
Device Voltage	V	5	5	5

1) OIP3 is measured with two tones at an output power of +5 dBm/tone separated by 1 MHz.

Product Specifications

Parameters	Units	Min	Typ	Max
Testing Frequency	MHz		1950	
Gain	dB		24.7	
S11	dB		-21	
S22	dB		-18	
Output IP3	dBm		35	
Noise Figure	dB		0.55	
Output P1dB	dBm		19.5	
Current	mA		95	
Device Voltage	V		5	

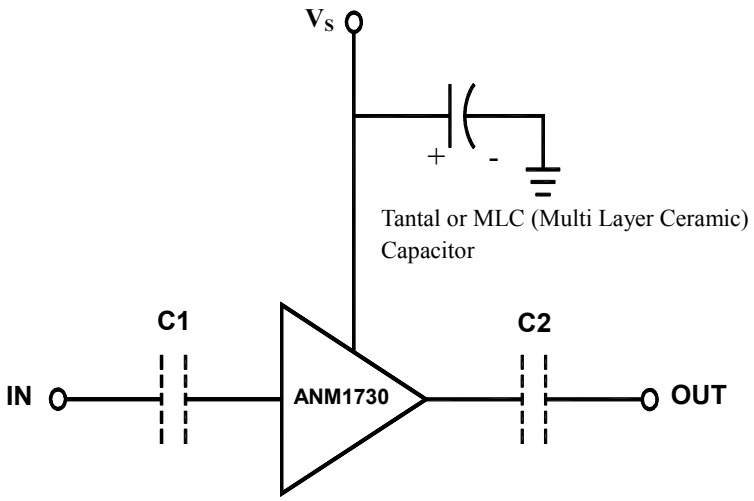
Absolute Maximum Ratings

Parameters	Rating
Operating Case Temperature	-40 to +85°C
Storage Temperature	-40 to +150°C
Device Voltage	+6 V
Operating Junction Temperature	+150°C
Input RF Power (Continuous)	20 dBm

Pin Configuration

Pin No.	Function
1	RF IN
2	RF OUT
3	Vsupply

Application Circuit

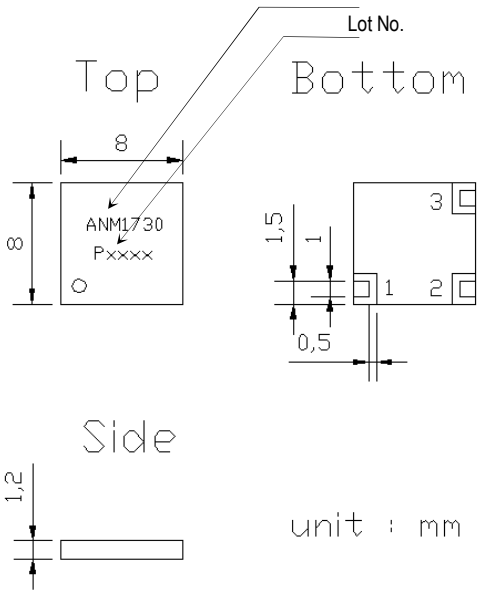


1) The tantal or MLC (Multi Layer Ceramic) capacitor is optional and for bypassing the AC noise introduced from the DC supply. The capacitance value may be determined by customer's DC supply status. The capacitor should be placed as close as possible to V_s pin and be connected directly to the ground plane for the best electrical performance.

2) DC blocking capacitors are always necessarily placed at the input and output port for allowing only the RF signal to pass and blocking the DC component in the signal. The DC blocking capacitors are included inside the ALN module. Therefore, C1 & C2 capacitors may not be necessary, but can be added just in case that the customer wants. The value of C1 & C2 is determined by considering the application frequency.

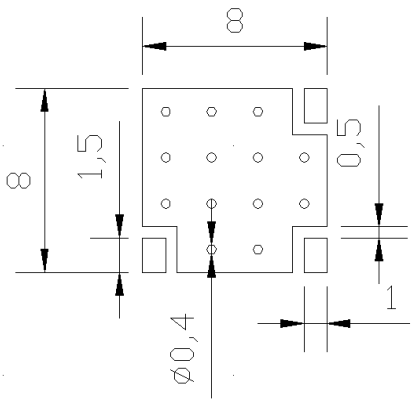
Outline Drawing

Part No.



Pin No.	Function
1	RF IN
2	RF OUT
3	Vsupply
Bottom	DC & RF GND

Mounting Recommendation (in mm)



Note: 1. The number and size of ground via holes in a circuit board is critical for thermal and RF grounding considerations.
2. We recommend that the ground via holes be placed on the pad of the device for better RF and thermal performance, as shown in the drawing at the left side.

S-parameters & K-factor