

#### **Features**

- · 37.5 dB Gain at 925 MHz
- · 19 dBm P1dB
- · 35 dBm Output IP3
- · 1.1 dB Noise Figure
- Operating at Single 5 V Supply
- 80 mA Current Consumption

#### **Description**

The plerow<sup>™</sup> ALN-series is the compactly designed surface-mount module for the use of the LNA with or without the following gain blocks in the infrastructure equipment of the mobile wirelss (CDMA, GSM, PCS, PHS, WCDMA, DMB, WLAN, WiBro, WiMAX), GPS, satellite communication terminals and so on. It has an exceptional performance of low noise figure, high gain, high OIP3, and low bias current. The stability factor is always kept less than unity over the application band in order to confirm its unconditionally stable implementation to the application system environment. 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.



2-stage Single Type

More Information

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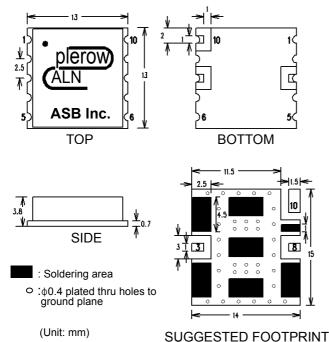
#### **Specifications**

Parameter	Unit	Specification			
Frequency Range	MHz	890 ~ 960			
Gain	dB	37.5			
Gain Flatness	dB	± 0.5			
Noise Figure	dB	1.1			
Output IP3	dBm	35			
S11 / S22	dB	-14 / -14			
Output P1dB	dBm	19			
Supply Current	mA	80			
Supply Voltage	V	5			
Impedance	Ω	50			
Max. RF Input Power @ CDMA 20FA	dBm	5			
Package Type & Size	mm	SMT, 13Wx13Lx3.8H			

1) Measurement conditions are as follows:  $T = 25^{\circ}C$ ,  $V_{CC} = 5$  V, Freq. = 925 MHz, 50 ohm system 2) OIP3 is measured with two tones at an output power of 10 dBm / tone separated by 1 MHz.

3) Note: We recommend that the VSWR toward a source and load be less than 1:4 to avoid an unwanted oscillation.

## **Outline Drawing**



Pin Number	Function			
3	RF In			
8	RF Out			
10	+Vcc			
Others	Ground			

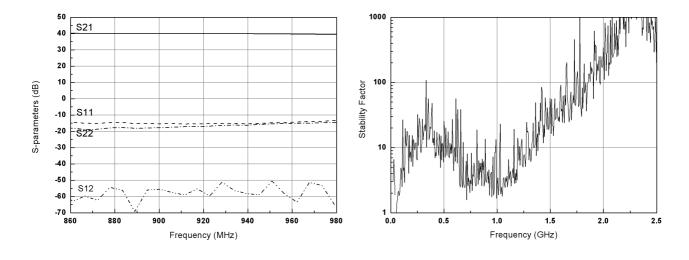
Note: 1. The number and size of ground via holes in a circuit board is critical for thermal RF grounding considerations.

2. We recommend that the ground via holes be placed on the bottom of all ground pins for better RF and thermal performance, as shown in the drawing at the left side.



## **S**-parameters

Stability Factor (K)



## **Noise Figure & Gain Flatness**

v	Mkr1 Mkr2 Mkr3	908.9 MHz 925 MHz 960 MHz		1.007 1.019 1.006	зB	40.367 dB 40.249 dB 39.862 dB		
9.000	1		ž				3	
40.00								
NFIG Scale/								
1.000 dB								
GAIN								
Scale/ 5.000					0			
dB	1		* ~	$ \rightarrow $	7	_	з	
			¥.~~		· -		-1	
-1.000	+							
-10.00								
Start 890.00 MHz		BW 4 MHz		Points 100		Stop 960.00 MHz		
Tcold 305.55 K	Avgs 5	5	Att 0/-	– dB	Loss	Utt	Corr	

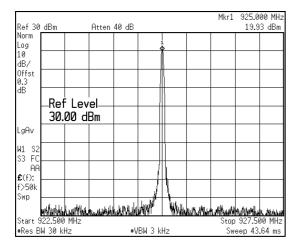
## OIP3

		Freq	925.	5 MHz		_			Trig	; Free		
	iod (TO											
Cen	ter S	925.5	0000	00 M	Hz							
	.3 dBm		Atten	50 dB				Mkr1		00 MHz 16 dBm		
#Samp Log					<u> </u>							
10												
dB/ Offst					ļ							
0.3			ł	Í								
dB	enter anna	official and	hybrid have been a started by the st	suth the main of	1444 parts	neinen harde	Yefyathatha	ganney	l.w.www.	ester hour		
Center	925.5	A0 MHz							Snan	5 MHz		
	#Res BW 30 kHz					#VBW 3 kHz				Sweep 138 ms		
то	TOI (Worst Case)			924.0 MHz		37.51 dBm						
	lower uppei			24.0 MI 27.0 MI								



# Low Noise Amplifier

### P1dB





## **Recommended Soldering Reflow Process**

