

Features

- 16 dB Gain at 50 MHz
- 15.5 dB Gain at 1000 MHz
- 2.2 dB NF(max) over frequency
- 21 dBm P1dB, 40 dBm OIP3 @ 5V / 90mA
- - μsec Switching Time(max)

Description

The plerow™ 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 wireless (CDMA, GSM, PCS, PHS, WCDMA, DMB, WLAN, WiBro, WiMAX), GPS, satellite communication terminals, CATV 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 more than unity over the application band in order to ensure 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.



1-stage Single Type

Specifications

@ T = 25°C, V_{CC} = 5 V, Freq. = 50 ~ 1000 MHz, 75 ohm

| Parameter | Unit | Specifications | | | | | | | | |
|-------------------------------|------|----------------------------------|-------|-----------|-----------|-------|-----------|------------|-------|-----------|
| | | Min | Typ | Max | Min | Typ | Max | Min | Typ | Max |
| Frequency Range | MHz | 50 ~ 300 | | | 300 ~ 600 | | | 600 ~ 1000 | | |
| Gain | dB | 15 | 16 | | 15 | 16 | | 14.5 | 15.5 | |
| Gain Flatness | dB | | ± 0.1 | ± 0.15 | | ± 0.1 | ± 0.15 | | ± 0.2 | ± 0.3 |
| Noise Figure | dB | | 2.0 | 2.05 | | 2.1 | 2.05 | | 2.2 | 2.25 |
| Output IP3 ⁽¹⁾ | dBm | 38 | 39 | | 38 | 39 | | 35 | 36 | |
| S11 / S22 ⁽²⁾ | dB | | | -15 / -10 | | | -12 / -14 | | | -11 / -11 |
| Output P1dB | dBm | 20 | 21 | | 20 | 21 | | 19 | 20 | |
| Switching Time ⁽³⁾ | sec | - | | | | | | | | |
| Supply Current | mA | | | | 90 (Typ) | | | 110 (Max) | | |
| Supply Voltage | V | 5 | | | | | | | | |
| Impedance | Ω | 75 | | | | | | | | |
| Max. RF Input Power | dBm | C.W 29 ~ 31 (before fail) | | | | | | | | |
| Package Type & Size | mm | Surface Mount Type, 10Wx10Lx3.8H | | | | | | | | |

Note: Operating temperature is -40°C to +85°C.

1) OIP3 is measured with two tones at an output power of 5 dBm / tone separated by 6 MHz.

2) S11/S22 (max) is the worst value within the frequency band.

Recommended is the VSWR toward the source and the load less than 4:1 respectively to be free from any oscillation, which may result from the devices ahead or behind in its system application even though it may be unconditionally stable (K factor >1).

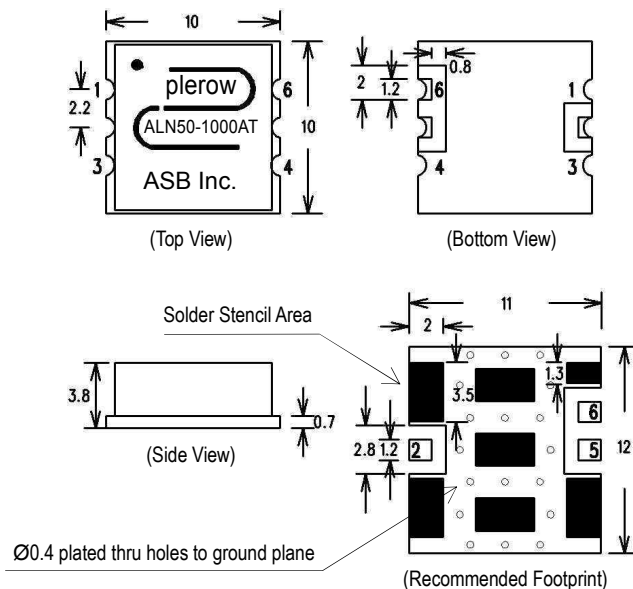
3) Switching time means the time that takes for output power to get stabilized to its final level after switching DC voltage from 0 V to 5 V.

More Information

Website: www.asb.co.kr
E-mail: sales@asb.co.kr

Tel: (82) 42-528-7223
Fax: (82) 42-528-7222

Outline Drawing (Unit: mm)



| Pin Number | Function |
|------------|----------|
| 2 | RF In |
| 5 | RF Out |
| 6 | +Vcc |
| Others | Ground |

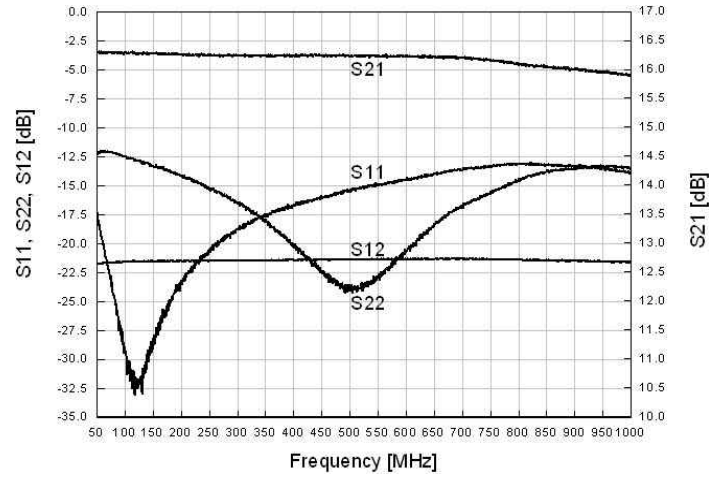
Note: 1. The number and size of ground via holes in a circuit board is critical for thermal RF grounding considerations.

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.

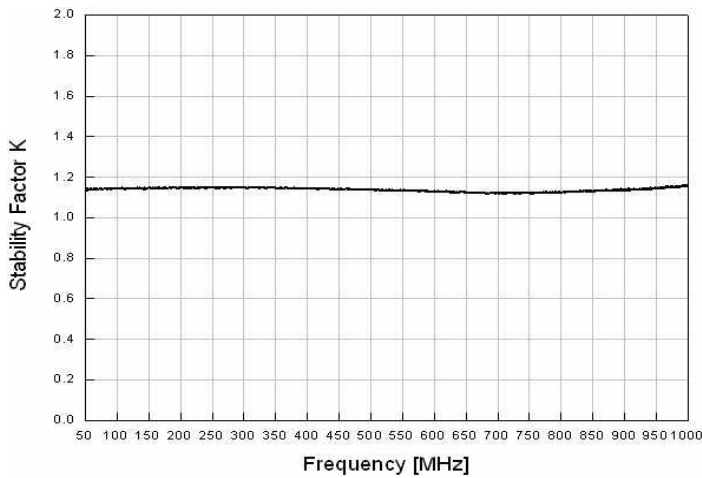
**Typical Performance
(Measured)**

CATV
50~1000 MHz
+5 V

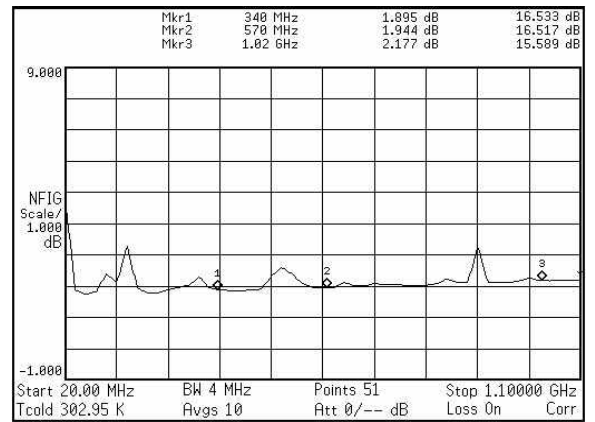
S-parameters



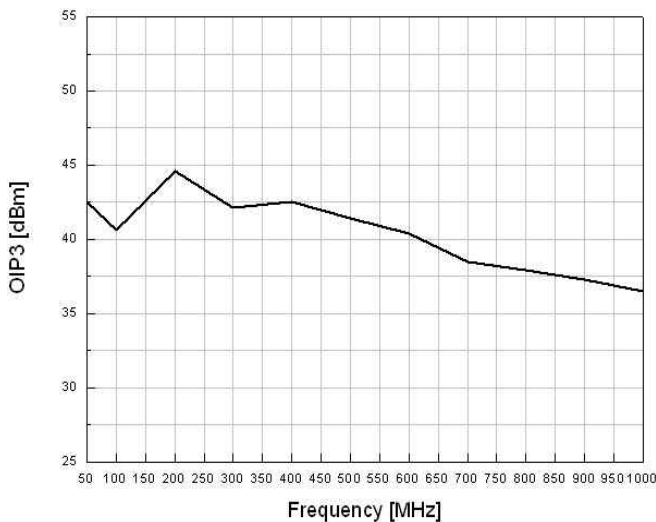
Stability Factor (K)



Noise Figure



OIP3



P1dB

