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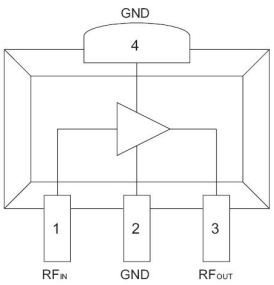
Linear Amplifier SG126

DESCRIPTION

Sanland's SG126 is intended for use in applications requiring high linearity, such as CATV Fiber Receiver and Distribution Amplifiers, and CATV Drop Amplifiers.SG126 is RoHS compliant and offered in SOT89 leadfree package.

Major Applications

•CATV Network
•FTTB Network
•FTTH Network
•PON ONU



KEY FEATURES

- High linearity:+43dBm OIP3@+8V
- Wide Bandwidth:50-1000MHz
- P1dB:26dBm @+8V
- Low Noise:1.8dB typ
- Input Output 75 ohm Match
- Single Power Supply:+5V~+8V

RoHS Compliant & Green Package

Caution: ESD Sensitive

Appropriate precaution in handling, packaging And testing devices must be observed.

PIN DEFINITION

Pin	Name	Function
1	RF in	RF Input
2	GND	Ground
3	RF out	RF Output/Bias
4	GND	Ground

Stresses in excess of the absolute ratings may cause permanent damage

Parameters	MIN	MAX	UNIT
Voltage	0	+12	V
Input Power	-	+10	dBm
Storage Temperature	-65	+150	℃

Absolute Minimum Range and Maximum Application Conditions

Parameters	MIN	TYP	MAX	UNIT
Frequency	50	-	1218	MHz
Operating Voltage	5	8	10	V
Application Temperature	-40	-	+85	℃
Operating Junction temperature		150		℃

TYPICAL PARAMETERS

（T_A=+25℃ , V_{DD}=+8V , 75Ω system）

Parameter	Units	Min	Typical	Max
Frequency	MHz	50	860	1218
Noise Figure	dB	2	2	2.5
Gain	dB	19.1	19.5	19.6
S11	dB	-	-12.3	-
S22	dB	-	-14.4	-
Output P1dB	dBm	-	26	-
Output IP3①	dBm	-	43	-
Output IP2②	dBm	-	58	-
CSO③	dBc	-	68	-
CTB③	dBc	-	75	-
Supply Current	mA	-	135	-
Supply Voltage	V	-	8	-
Thermal resistance	° C/W	-	40	-

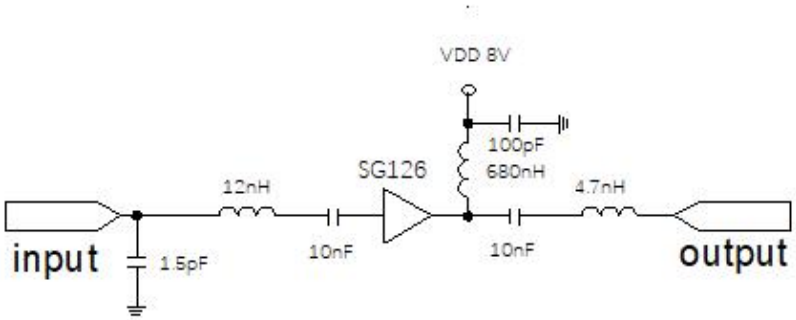
① Tone Spacing=1MHz, Pout per ton=10dBm ② OIP2 is measured at F1+F2 Frequency

③ 79Ch.,Flat,+35dBmV

Important Note:

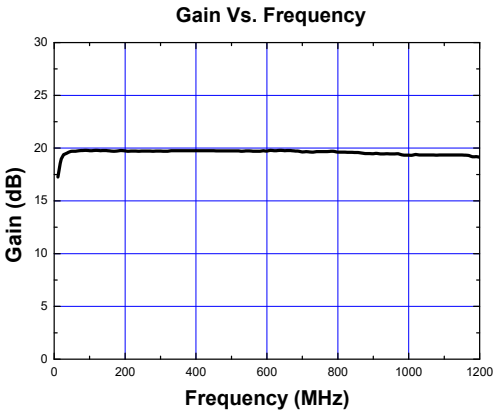
The information provided in this datasheet is deemed to be accurate and reliable only at present time. Sanland Technology Corp. reserves the right to make any changes to the specifications in this datasheet without prior notice.

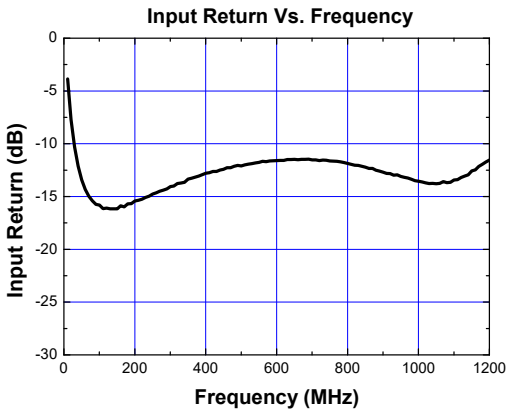
TYPICAL APPLICATION CIRCUIT

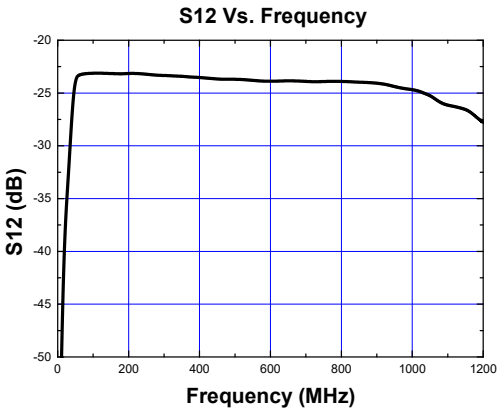


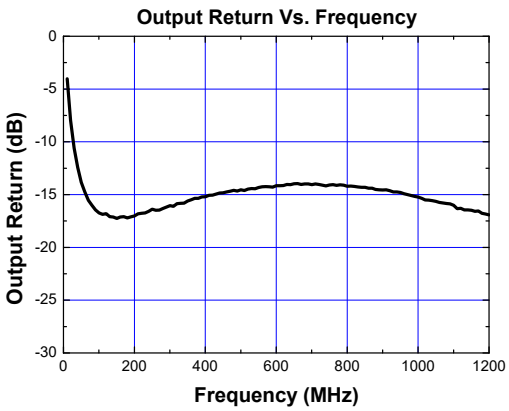
PERFORMANCES CHART

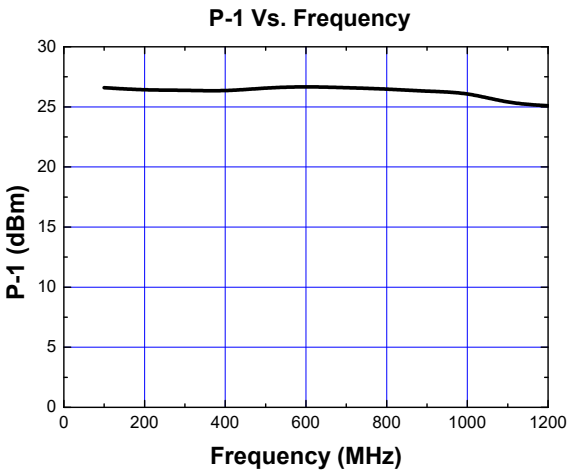
(T_A=+25℃, V_{DD}=+8 V ,75Ω system)

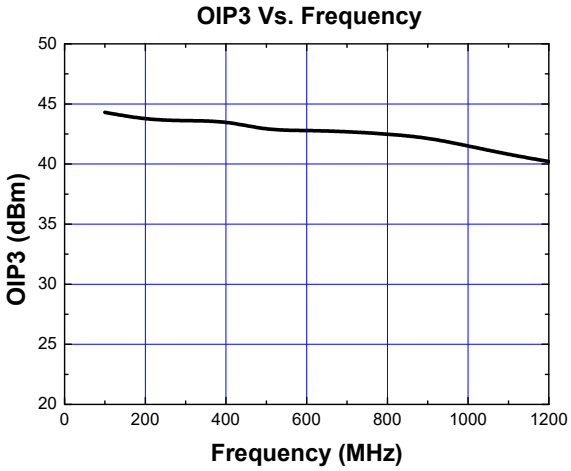


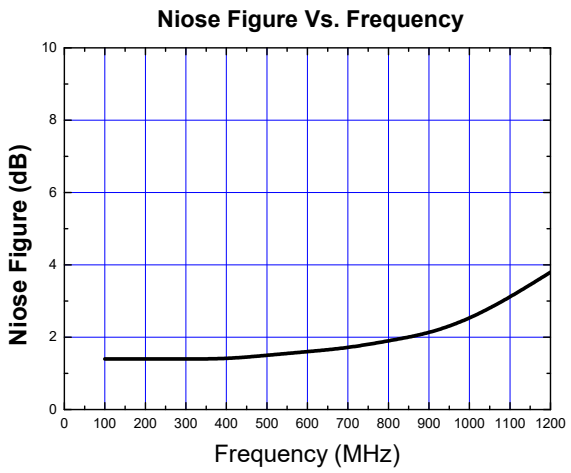







P-1 Vs. Frequency
P-1 (dBm)
Frequency (MHz)
0
5
10
15
20
25
30
0
200
400
600
800
1000
1200


OIP3 Vs. Frequency
OIP3 (dBm)
Frequency (MHz)
20
25
30
35
40
45
50
0
200
400
600
800
1000
1200


Niose Figure Vs. Frequency
Niose Figure (dB)
Frequency (MHz)
0
2
4
6
8
10
0
100
200
300
400
500
600
700
800
900
1000
1100
1200

TYPICAL PARAMETERS

（T_A=+25℃ , V_{DD}=+5V , 75Ω system）

Parameter	Units	Min	Typical	Max
Frequency	MHz	50	500	1000
Noise Figure	dB	1.3	1.8	2.5
Gain	dB	17.8	19	19.4
S11	dB	-	-13	-
S22	dB	-	-14	-
Output P1dB	dBm	-	22	-
Output IP3①	dBm	-	43	-
Output IP2②	dBm	-	58	-
CSO③	dBc	-	68	-
CTB③	dBc	-	75	-
Supply Current	mA	-	130	-
Supply Voltage	V	-	5	-
Thermal resistance	° C/W	-	40	-

① Tone Spacing=1MHz, Pout per ton=5dBm ② OIP2 is measured at F1+F2 Frequency

③ 79Ch.,Flat,+38dBmV

Important Note:

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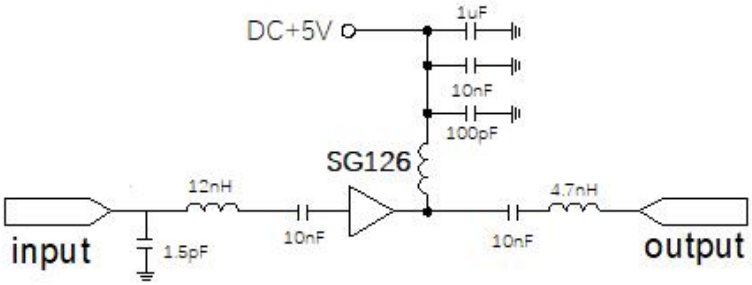
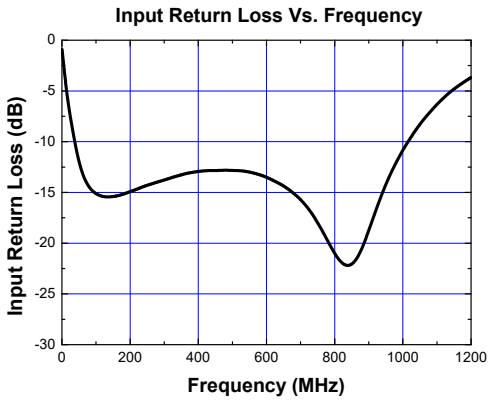
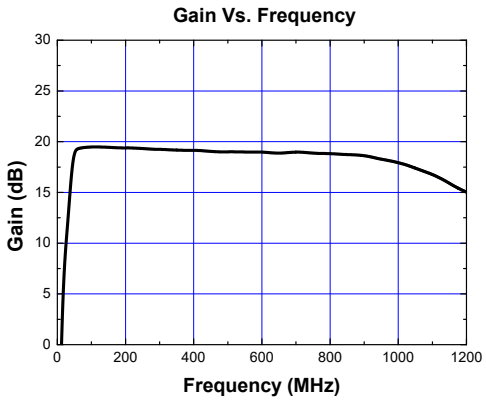
TYPICAL APPLICATION CIRCUIT

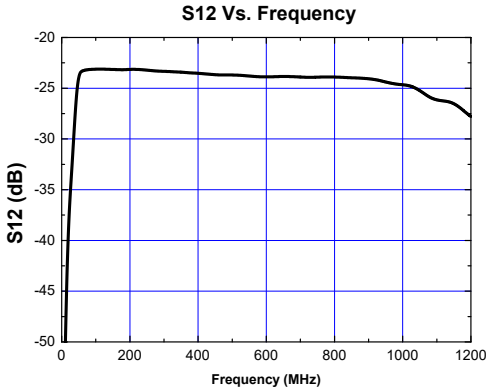


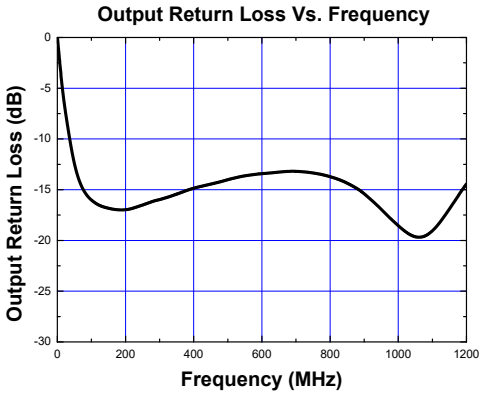
PERFORMANCES CHART

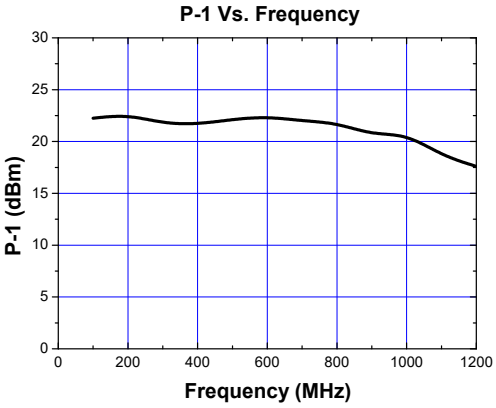
(T_A=+25℃，V_{DD}=+5V,75Ω system)

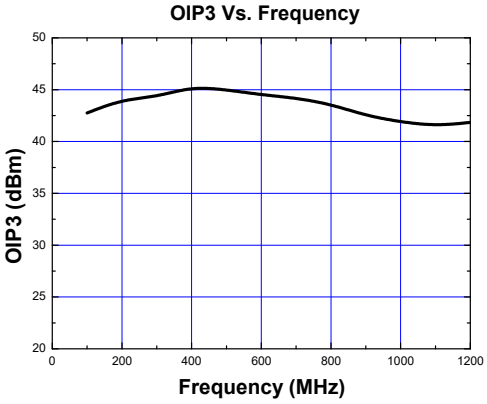


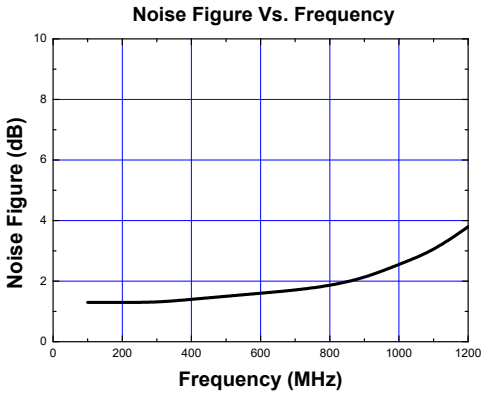






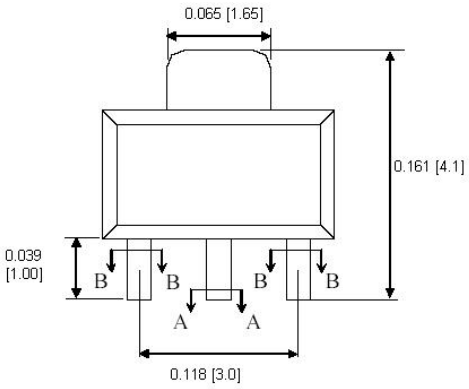

P-1 Vs. Frequency
P-1 (dBm)
Frequency (MHz)
0
5
10
15
20
25
30
0
200
400
600
800
1000
1200

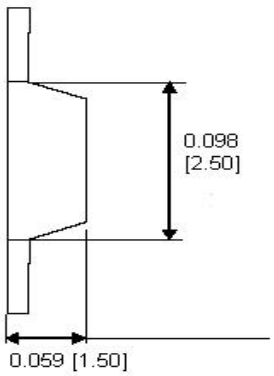

OIP3 Vs. Frequency
OIP3 (dBm)
Frequency (MHz)
20
25
30
35
40
45
50
0
200
400
600
800
1000
1200


Noise Figure Vs. Frequency
Noise Figure (dB)
Frequency (MHz)
0
2
4
6
8
10
0
200
400
600
800
1000
1200

SOT89 PACKAGE AND PCB PAD LAYOUT

Units：inch [millimeter]





Symbol	inch	mm
A	0.016	0.42
B	0.019	0.5