

### Features

- High Linearity 43 dBm OIP3
- Low Noise Figure 2.0 dB
- 25 dBm P1dB
- 75 Ohm Input / Output Match
- Bandwidth 5~1000 MHz
- Single Supply 8 V

### Description

The ASL550, a wideband linear amplifier MMIC, has a high linearity and low noise over a wide range of frequency 5 MHz to 1 GHz, being suitable for use in the fiber receiver, distribution amplifiers and drop amplifiers of CATV systems, and in the mobile wireless repeaters and BTS. The amplifier is available in an SOT-89 package and passes through the stringent DC, RF, and reliability tests.



Package Style: SOT-89

### Typical Performance

Parameters	Units	Typical				
		5	50	500	860	2600
Frequency	MHz	5	50	500	860	2600
Noise Figure	dB	2.9	2.0	2.0	2.2	3.6
Gain	dB	16.2	17.1	17.0	16.9	14.9
S11	dB	-17	-15	-15	-16	-8
S22	dB	-16	-14	-17	-20	-9
Output P1dB	dBm	26.5	23	25	25	19
Output IP3 <sup>1)</sup>	dBm	36.5	40	43	41.5	38
Output IP2 <sup>1),2)</sup>	dBm	72	53	54	53	-
CSO <sup>3)</sup> (@ 355.25 MHz)	dBc	74				
CTB <sup>3)</sup> (@ 355.25 MHz)	dBc	75				
Current	mA	240		120		
Device Voltage	V	8		8		

1) OIP3 and OIP2 are measured with two tones at an output power of +9 dBm/ tone separated by 1 MHz(up-link) or 6 MHz(down-link).

2) OIP2 is measured at F1+F2 Frequency.

3) CSO & CTB was measured at 335.25 MHz.

For 116 flat channels at the input, measured at the output were 77 analog channels (55 MHz to 550 MHz) @ +20 dBmV per channel and 39 digital channels (550 MHz to 750 MHz) @ 6 dB lower than that of the analog channel.

### Product Specifications

Parameters	Units	Min	Typ	Max
Testing Frequency	MHz		500	
Gain	dB	16.0	17.0	
S11	dB	-12	-15	
S22	dB	-13	-17	
Output IP3	dBm	41	43	
Noise Figure	dB		2.0	2.2
Output P1dB	dBm	24	25	
Current	mA	100	120	142
Device Voltage	V		8	

### Absolute Maximum Ratings

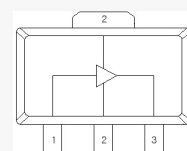
Parameters	Rating
Operating Case Temperature	-40 to +85°C
Storage Temperature	-40 to +150°C
Device Voltage	+9V
Operating Junction Temperature	+150°C
Input RF Power (CW, 75ohm matched)*	10 dBm

\* Please find the max. input power data from [http://www.asb.co.kr/pdf/Maximum\\_Input\\_Power\\_Analysis.pdf](http://www.asb.co.kr/pdf/Maximum_Input_Power_Analysis.pdf)

### Application Circuit

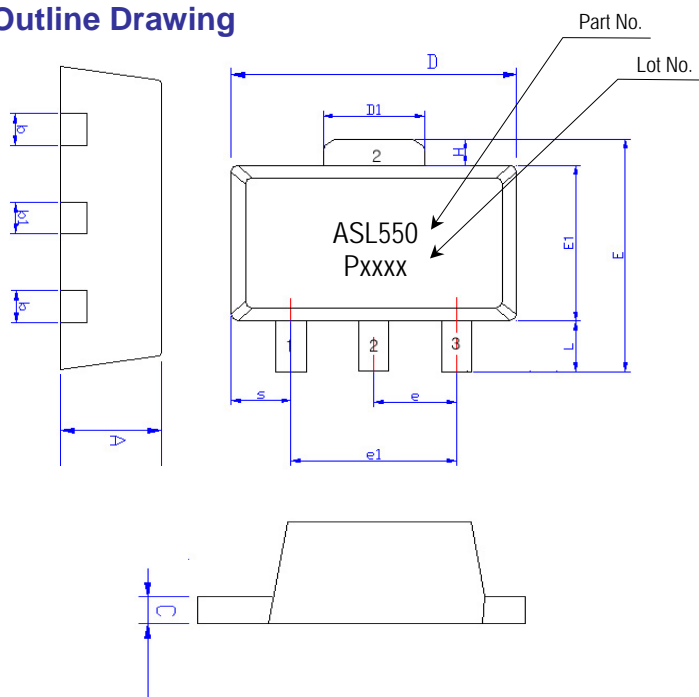
- 50 ~ 1000 MHz (Gain Flatness: 0.2 dB)
- 50 ~ 1000 MHz (Gain Flatness, 5 V)
- 50 ~ 1000 MHz (Gain Flatness, 6 V)
- 50 ~ 1000 MHz (Positive Gain Slope)
- 50 ~ 1000 MHz (Min. VSWR)
- 50 ~ 1000 MHz (Low Gain)
- 5 ~ 200 MHz
- 5 ~ 200 MHz (Min. VSWR)
- 950 ~ 2600 MHz (SMATV)
- 90 ~ 2600 MHz
- 50 ~ 1000 MHz (Push-Pull / 2:1 transformer)
- 50 ~ 1000 MHz (Push-Pull / 1:1 transformer)
- 5 ~ 200 MHz (Push-Pull / 2:1 transformer)
- 5 ~ 200 MHz (Push-Pull / 1:1 transformer)

### Pin Configuration



Pin No.	Function
1	RF IN
2	GND
3	RF OUT / Bias

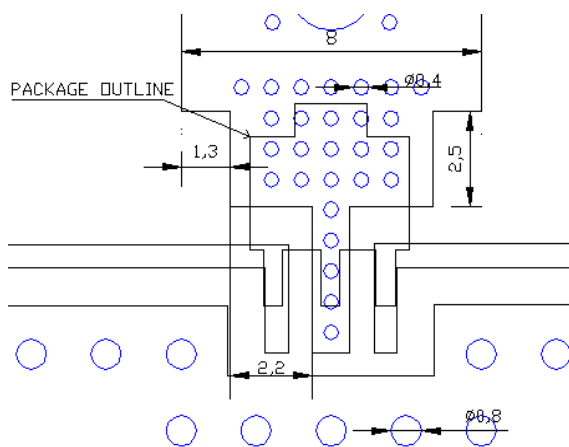
### Outline Drawing



Symbols	Dimensions (In mm)		
	MIN	NOM	MAX
A	1.40	1.50	1.60
L	0.89	1.04	1.20
b	0.36	0.42	0.48
b1	0.41	0.47	0.53
C	0.38	0.40	0.43
D	4.40	4.50	4.60
D1	1.40	1.60	1.75
E	3.64	---	4.25
E1	2.40	2.50	2.60
e1	2.90	3.00	3.10
H	0.35	0.40	0.45
S	0.65	0.75	0.85
e	1.40	1.50	1.60

Pin No.	Function
1	RF IN
2	GND
3	RF OUT / Bias

### 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 bottom of the lead pin 2 and exposed pad of the device for better RF and thermal performance, as shown in the drawing at the left side.

### ESD Classification & Moisture Sensitivity Level

#### ESD Classification

HBM	Class 1B
	Voltage Level: 550 V
MM	Class A
	Voltage Level: 50 V

CAUTION: ESD-sensitive device!

#### Moisture Sensitivity Level (MSL)

Level 3 at 260°C reflow

## Wideband Linear Amplifier MMIC

### APPLICATION CIRCUIT

Gain Flatness (0.2 dB)

CATV

50 ~ 1000

+8 V

Frequency (MHz)	50	500	860
Noise Figure (dB)	2.0	2.0	2.2
Magnitude S21 (dB)	17.1	17.0	16.9
Magnitude S11 (dB)	-15	-15	-16
Magnitude S22 (dB)	-14	-17	-20
Output P1dB (dBm)	23	25	25
Output IP3 <sup>1)</sup> (dBm)	40	43	41.5
Output IP2 <sup>1),2)</sup> (dBm)	53	54	53
CSO <sup>3)</sup> (dBc)	74		
CTB <sup>3)</sup> (dBc)	75		
Device Voltage (V)	8		
Current (mA)	120		

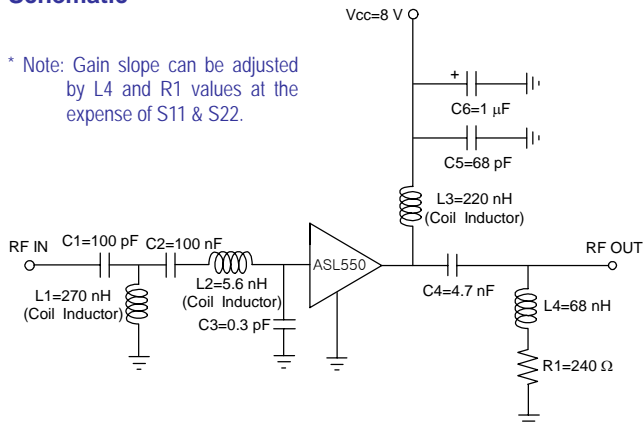
1) OIP3 and OIP2 are measured with two tones at an output power of +9 dBm/tone separated by 6 MHz.

2) OIP2 is measured at F1+F2 Frequency.

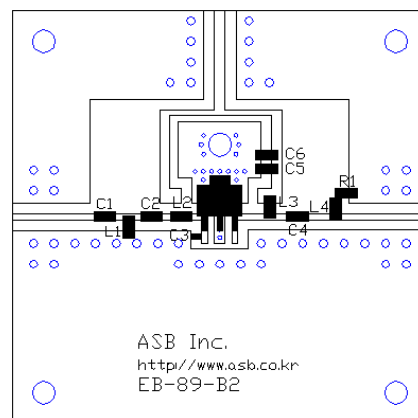
3) CSO & CTB was measured at 335.25 MHz. For 116 flat channels at the input, measured at the output were 77 analog channels (55 MHz to 550 MHz) @ +20 dBmV per channel and 39 digital channels (550 MHz to 750 MHz) @ 6 dB lower than that of the analog channel.

### Schematic

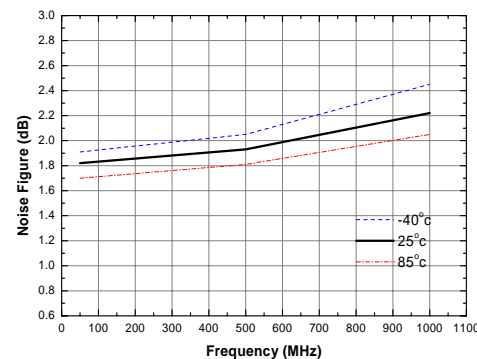
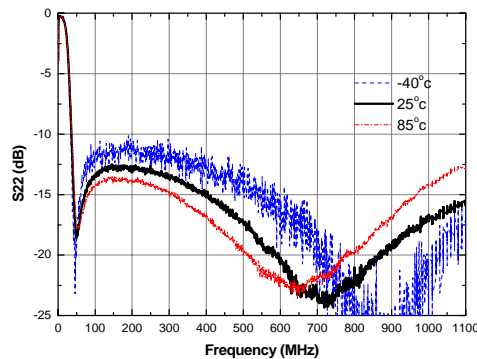
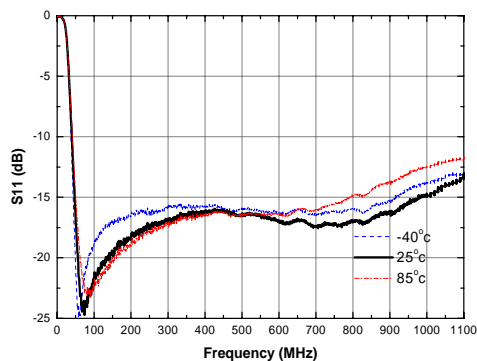
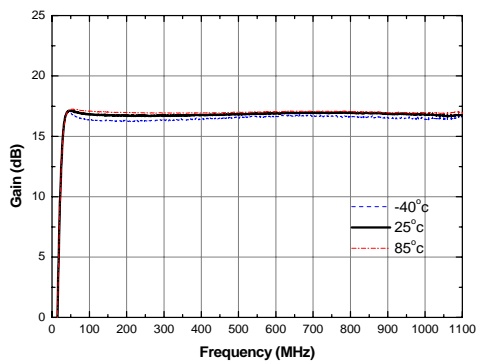
\* Note: Gain slope can be adjusted by L4 and R1 values at the expense of S11 & S22.



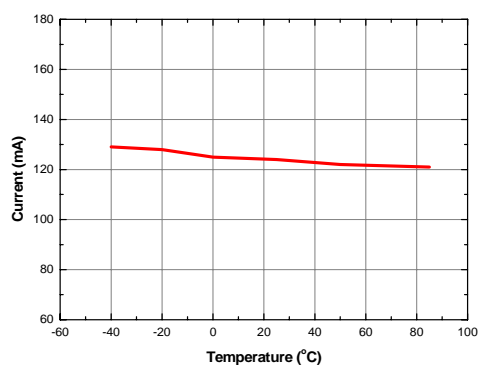
### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



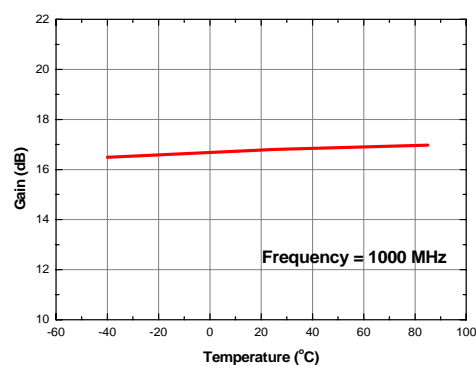
### S-parameters & Noise Figure



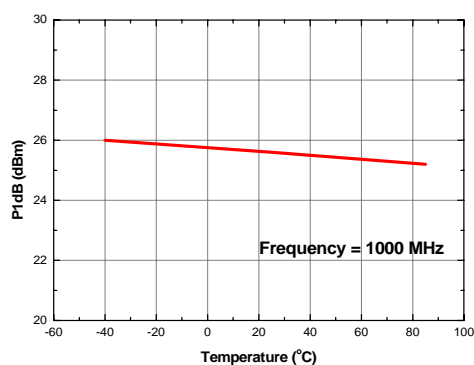
### Current vs. Temperature



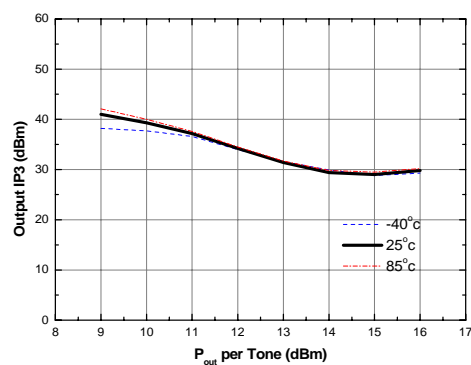
### Gain vs. Temperature



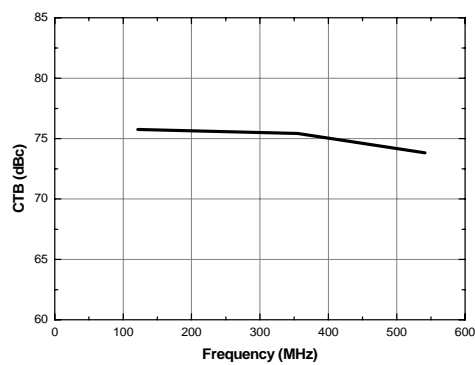
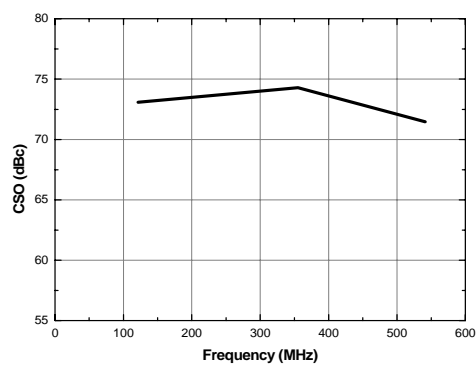
### P1dB vs. Temperature



### Output IP3 vs. Tone Power (Frequency = 1000 MHz)



### CSO & CTB



### Typical Performance (at 4.8V / 55mA)

Frequency (MHz)	50	500	860
Noise Figure (dB)	2.0	2.0	2.2
Magnitude S21 (dB)	16.7	16.4	16.7
Magnitude S11 (dB)	-15	-14	-11
Magnitude S22 (dB)	-13	-17	-11
Output P1dB (dBm)	17	20	19
Output IP3 <sup>1)</sup> (dBm)	31	36	33.5
Supply Voltage (V)	4.8		
Current (mA)	55		

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

### APPLICATION CIRCUIT

**Gain Flatness (0.3 dB)**

**CATV**

**50 ~ 1000**

**+5 V**

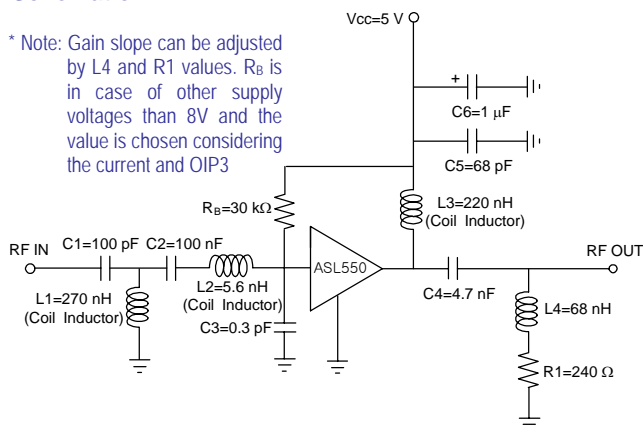
Frequency (MHz)	50	500	860
Noise Figure (dB)	1.9	2.0	2.2
Magnitude S21 (dB)	16.9	16.7	16.6
Magnitude S11 (dB)	-15	-14	-14
Magnitude S22 (dB)	-14	-18	-18
Output P1dB (dBm)	20	21	21
Output IP3 <sup>1)</sup> (dBm)	38	39	36.5
CSO <sup>2)</sup> (dBc)	66		
CTB <sup>2)</sup> (dBc)	76		
Device Voltage (V)	5		
Current (mA)	92		

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

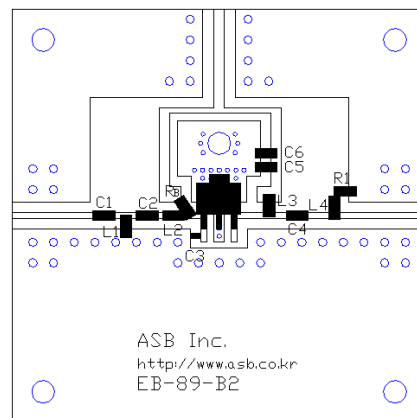
2) 160 channels, +20 dBmV per channel (measured at output).

### Schematic

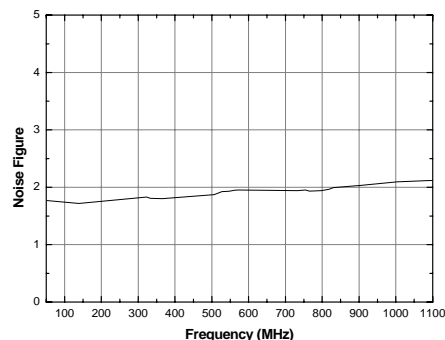
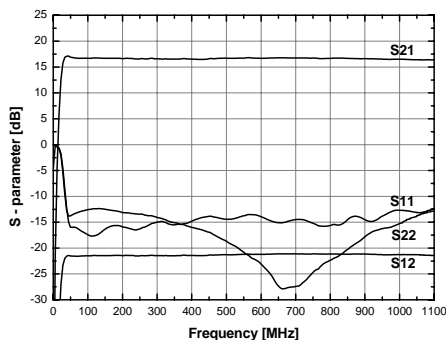
\* Note: Gain slope can be adjusted by L4 and R1 values. R<sub>B</sub> is in case of other supply voltages than 8V and the value is chosen considering the current and OIP3



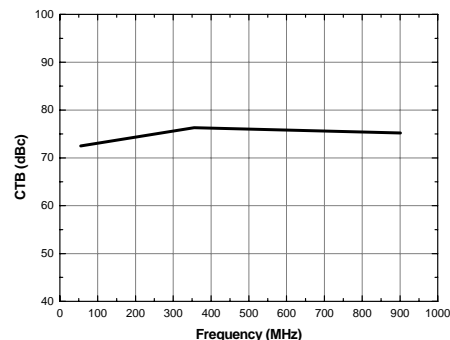
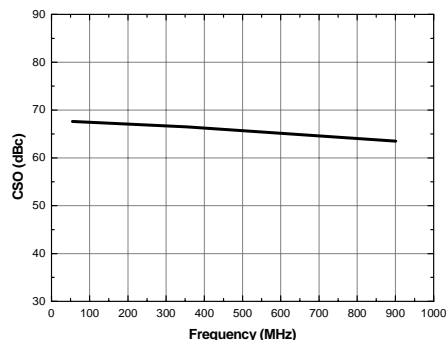
### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters & Noise Figure



### CSO & CTB



### APPLICATION CIRCUIT

**Gain Flatness (0.3 dB)**

**CATV**

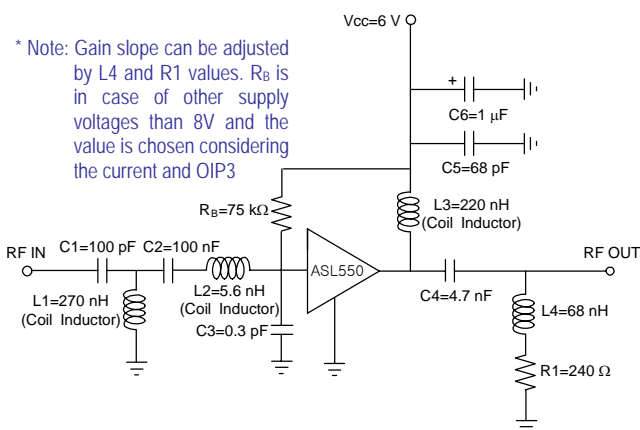
**50 ~ 1000**

**+6 V**

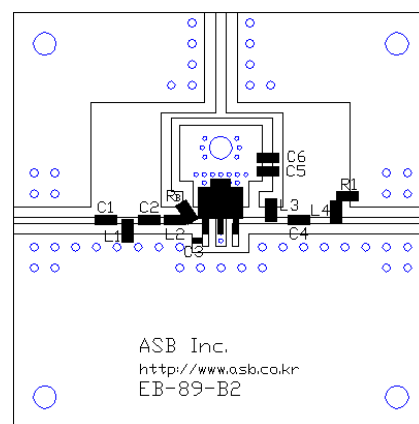
Frequency (MHz)	50	500	860
Noise Figure (dB)	1.9	2.0	2.2
Magnitude S21 (dB)	16.9	16.7	16.6
Magnitude S11 (dB)	-15	-14	-14
Magnitude S22 (dB)	-14	-18	-18
Output P1dB (dBm)	21	23	23
Output IP3 <sup>1)</sup> (dBm)	38	42	39.5
Device Voltage (V)	6		
Current (mA)	92		

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

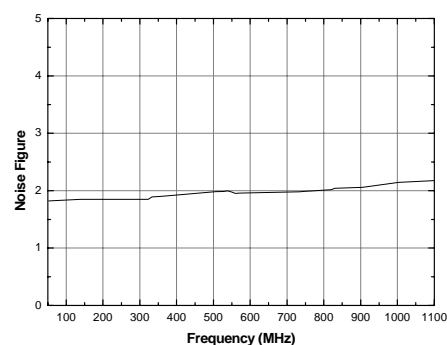
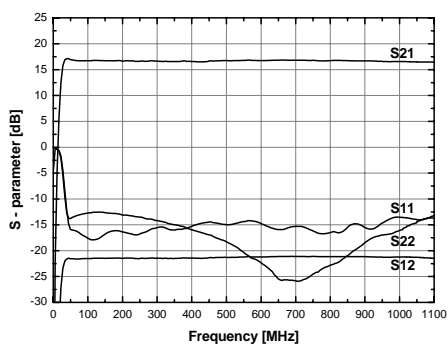
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters & Noise Figure



### APPLICATION CIRCUIT

**Gain Flatness (0.8 dB)**

**CATV**

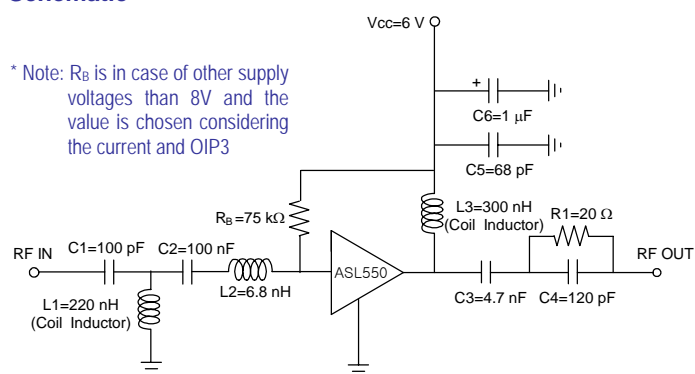
**50 ~ 1000**

**+6 V**

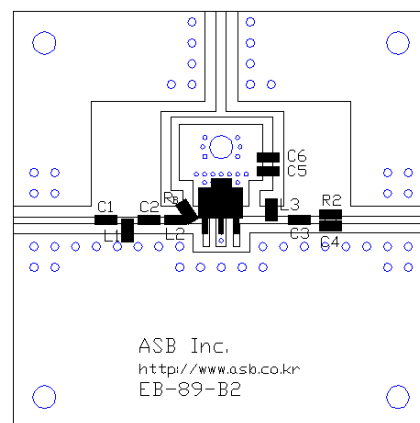
Frequency (MHz)	50	500	860
Noise Figure (dB)	2.1	2.2	2.5
Magnitude S21 (dB)	17.7	17.4	16.9
Magnitude S11 (dB)	-18	-18	-16
Magnitude S22 (dB)	-15	-22	-18
Output P1dB (dBm)	20	21	20
Output IP3 <sup>1)</sup> (dBm)	36	40	36.5
Device Voltage (V)	6		
Current (mA)	92		

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

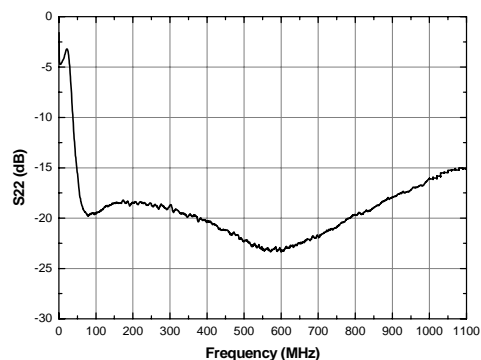
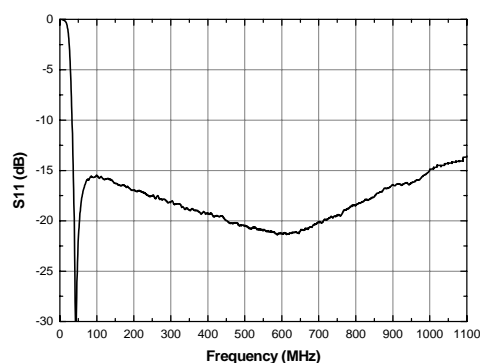
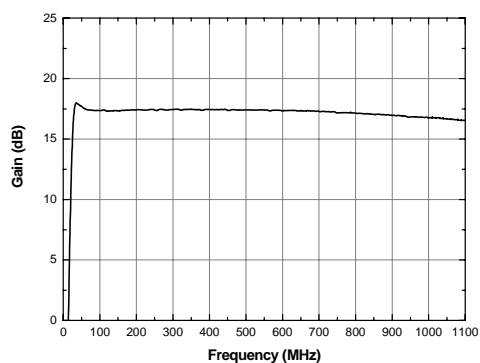
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### APPLICATION CIRCUIT

**Gain Flatness (1.0 dB)**

**CATV**

**50 ~ 1000**

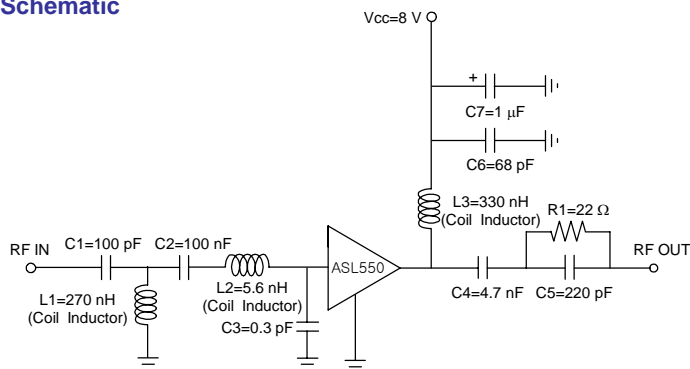
**+8 V**

Frequency (MHz)	50	500	860
Noise Figure (dB)	2.0	2.0	2.2
Magnitude S21 (dB)	17.8	17.5	16.8
Magnitude S11 (dB)	-16	-18	-16
Magnitude S22 (dB)	-20	-20	-16
Output P1dB (dBm)	24	25	25
Output IP3 <sup>1)</sup> (dBm)	40	42	43
CSO <sup>2)</sup> (dBc)	74		
CTB <sup>2)</sup> (dBc)	75		
Device Voltage (V)	8		
Current (mA)	120		

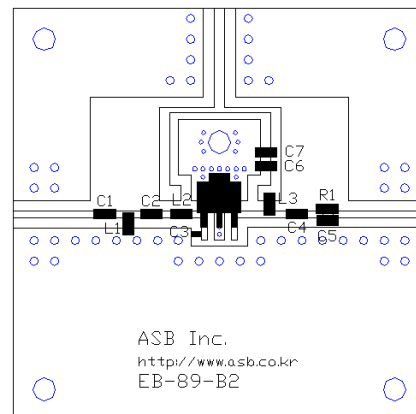
1) OIP3 is measured with two tones at an output power of +10 dBm/tone separated by 6 MHz.

2) 116 total channels, flat input; 77 analog channels (55 MHz to 550MHz) @ +20 dBmV per channel; 39 digital channels (550 MHz to 750 MHz) @ 6 dB below analog channels, measured at 335.25 MHz.

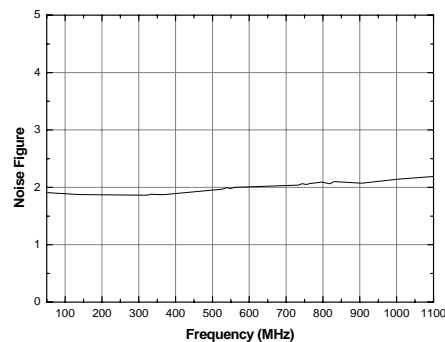
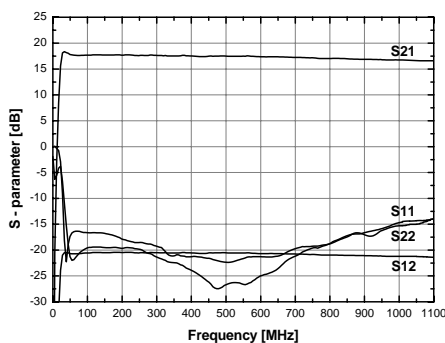
### Schematic



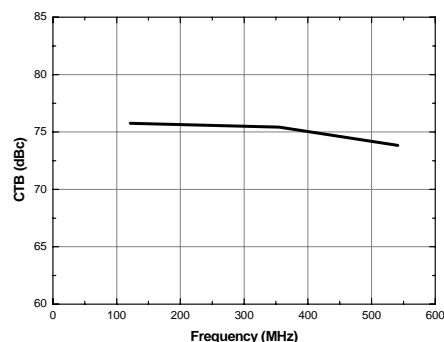
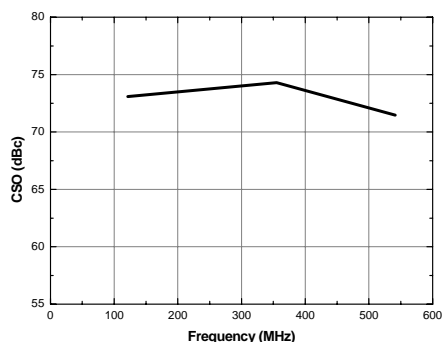
### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters & Noise Figure



### CSO & CTB





### APPLICATION CIRCUIT

*Positive Gain Slope*

CATV

50 ~ 1000

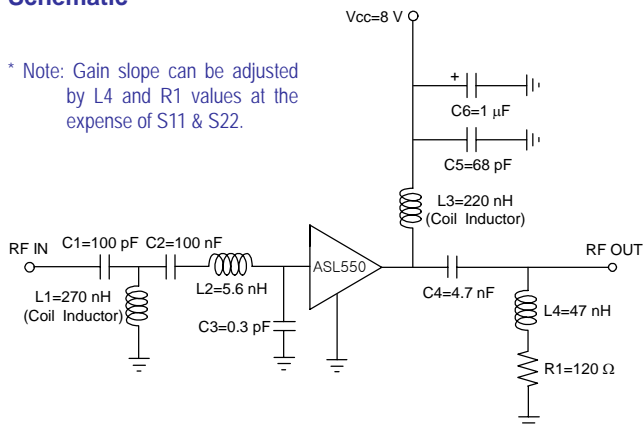
+8 V

Frequency (MHz)	50	500	860
Noise Figure (dB)	1.9	1.9	2.2
Magnitude S21 (dB)	15.9	16.6	16.9
Magnitude S11 (dB)	-15	-11	-12
Magnitude S22 (dB)	-10	-13	-20
Output P1dB (dBm)	23.5	25	24.5
Output IP3 <sup>1)</sup> (dBm)	40	42	40
CSO <sup>2)</sup> (dBc)	74		
CTB <sup>2)</sup> (dBc)	75		
Device Voltage (V)	8		
Current (mA)	120		

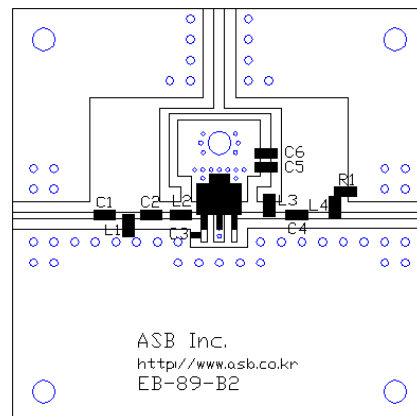
- 1) OIP3 is measured with two tones at an output power of +9 dBm/tone separated by 6 MHz.
- 2) 116 total channels, flat input; 77 analog channels (55 MHz to 550MHz) @ +20 dBmV per channel; 39 digital channels (550 MHz to 750 MHz) @ 6 dB below analog channels, measured at 335.25 MHz.

### Schematic

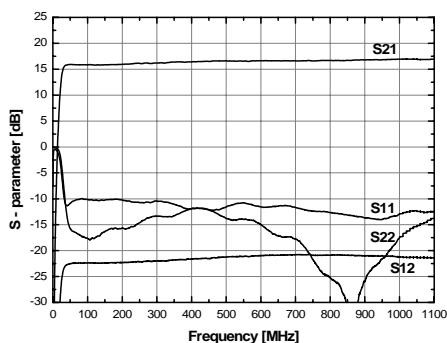
\* Note: Gain slope can be adjusted by L4 and R1 values at the expense of S11 & S22.



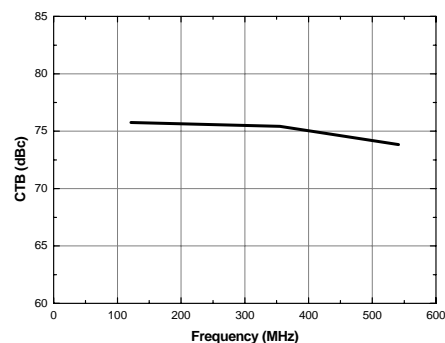
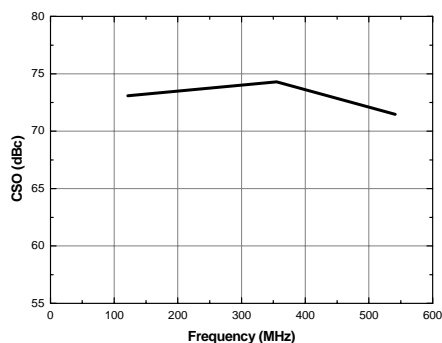
### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### CSO & CTB



## Wideband Linear Amplifier MMIC

### APPLICATION CIRCUIT

**Min. VSWR**

**CATV**

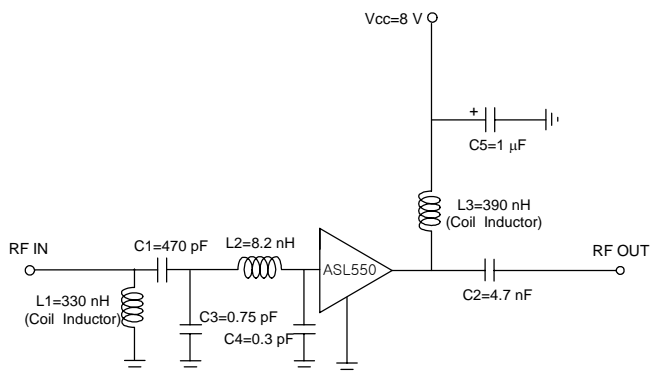
**50 ~ 1000**

**+8 V**

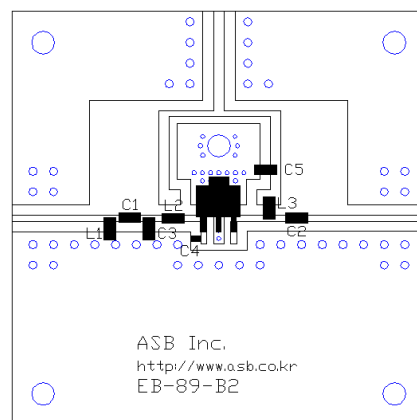
Frequency (MHz)	50	500	860
Noise Figure (dB)	2.0	2.0	2.2
Magnitude S21 (dB)	18.2	17.5	16.9
Magnitude S11 (dB)	-18	-18	-17
Magnitude S22 (dB)	-20	-20	-17
Output P1dB (dBm)	24	25	25
Output IP3 <sup>1)</sup> (dBm)	40	42	39.5
Output IP2 <sup>1),2)</sup> (dBm)	55	56	54
CSO <sup>3)</sup> (dBc)	74		
CTB <sup>3)</sup> (dBc)	75		
Device Voltage (V)	8		
Current (mA)	120		

- OIP3 is measured with two tones at an output power of +10 dBm/tone separated by 6 MHz.
- OIP2 is measured at F1+F2 Frequency.
- 116 total channels, flat input; 77 analog channels (55 MHz to 550MHz) @ +20 dBmV per channel; 39 digital channels (550 MHz to 750 MHz) @ 6 dB below analog channels, measured at 335.25 MHz.

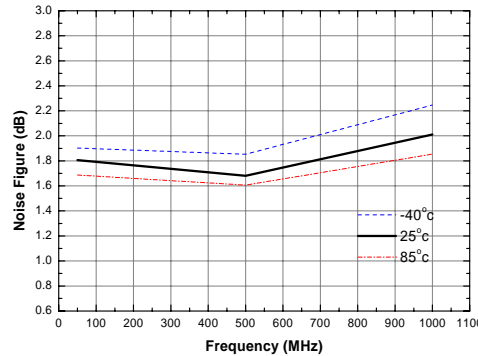
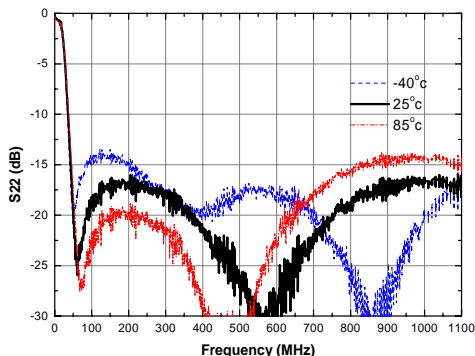
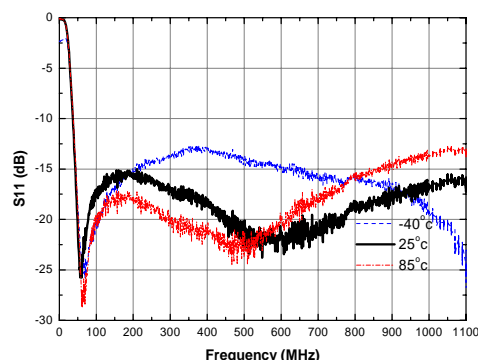
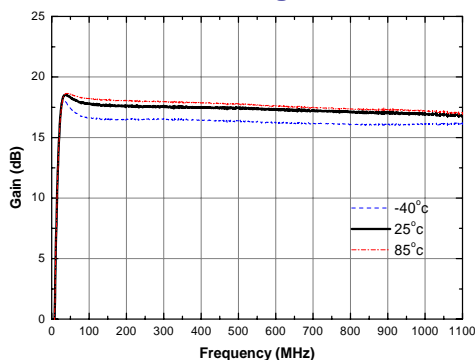
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters & Noise Figure



### APPLICATION CIRCUIT

CATV

5 ~ 200

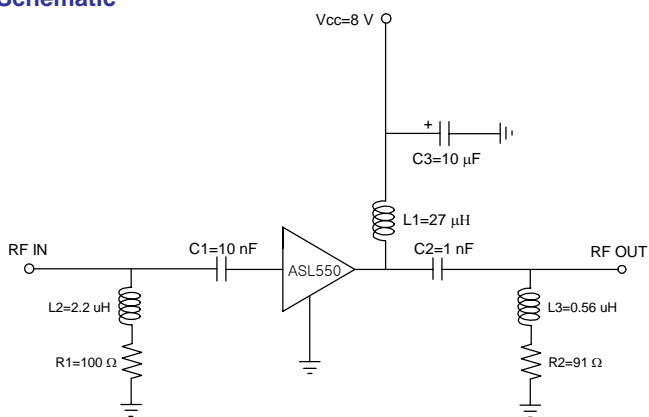
+8 V

Frequency (MHz)	5	50	200
Noise Figure (dB)	1.7	1.9	2.1
Magnitude S21 (dB)	17.1	16.8	16.8
Magnitude S11 (dB)	-14	-12	-18
Magnitude S22 (dB)	-7	-15	-15
Output P1dB (dBm)	22	25	25
Output IP3 <sup>1)</sup> (dBm)	32	39	41
Output IP2 <sup>1),2)</sup> (dBm)	35	58	56
Device Voltage (V)	8		
Current (mA)	120		

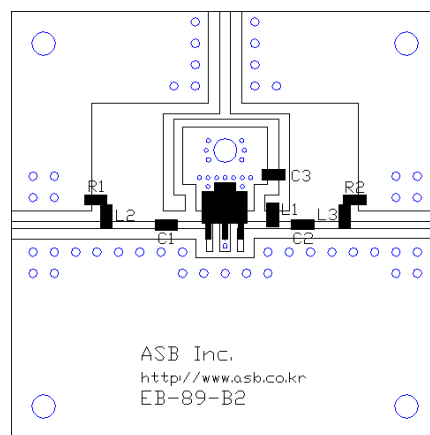
1) OIP3 and OIP2 are measured with two tones at an output power of +12 dBm/tone separated by 6 MHz.

2) OIP2 is measured at F1+F2 Frequency.

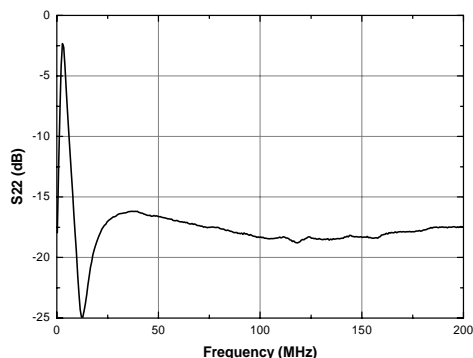
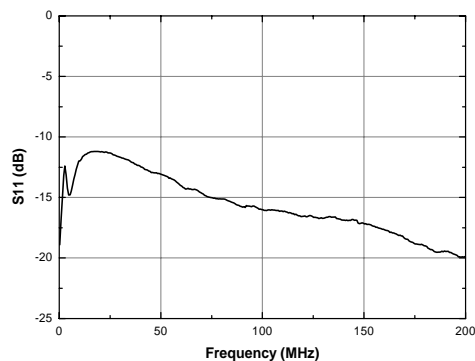
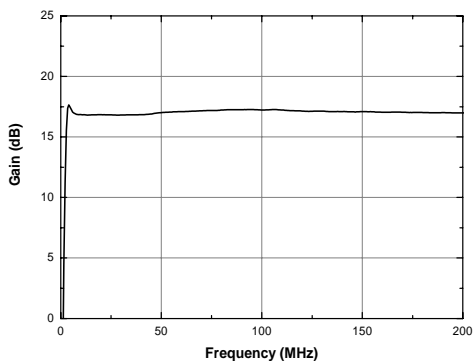
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### APPLICATION CIRCUIT

CATV

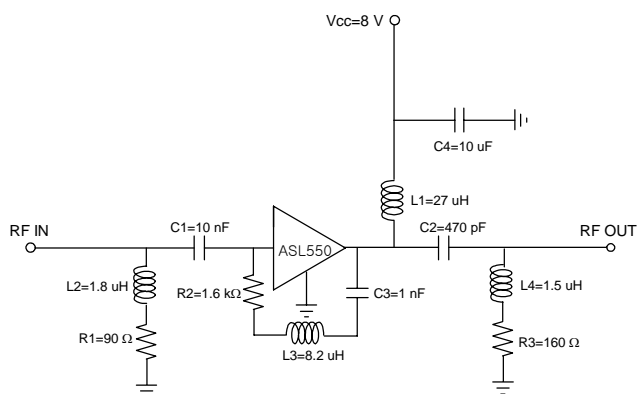
5 ~ 200

+8 V

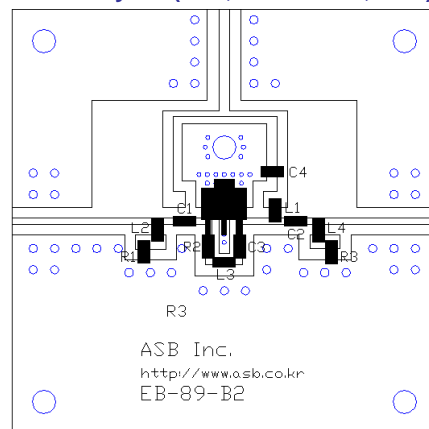
Frequency (MHz)	5	50	200
Noise Figure (dB)	2.3	2.1	2.3
Magnitude S21 (dB)	16.0	16.5	16.0
Magnitude S11 (dB)	-15	-16	-15
Magnitude S22 (dB)	-10	-15	-14
Output P1dB (dBm)	21	25.5	25.5
Output IP3 <sup>1)</sup> (dBm)	31	43	43
Device Voltage (V)	8		
Current (mA)	120		

1) OIP3 is measured with two tones at an output power of +9 dBm/tone separated by 1 MHz.

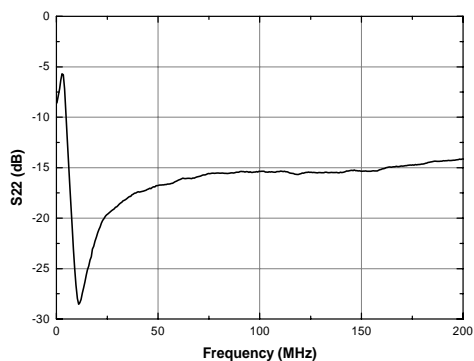
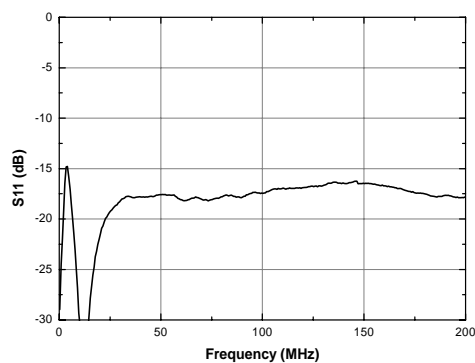
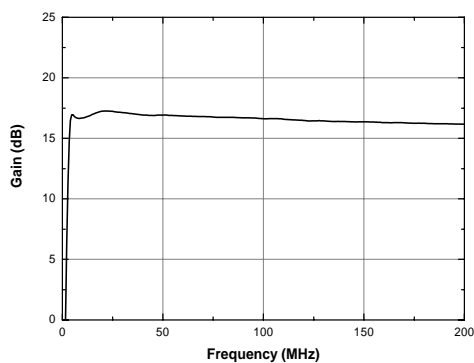
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### APPLICATION CIRCUIT

Min. VSWR

CATV

5 ~ 200

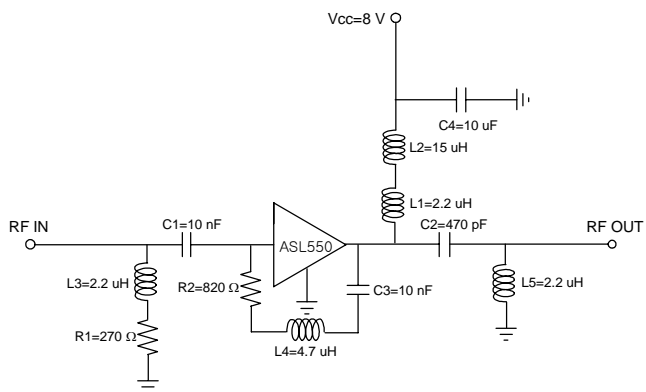
+8 V

Frequency (MHz)	5	50	200
Noise Figure (dB)	2.3	1.7	1.9
Magnitude S21 (dB)	16.6	16.3	15.2
Magnitude S11 (dB)	-20	-15	-14
Magnitude S22 (dB)	-16	-15	-13
Output P1dB (dBm)	22	25	25
Output IP3 <sup>1)</sup> (dBm)	27.5	38	43
Output IP2 <sup>1),2)</sup> (dBm)	37	55	56
Device Voltage (V)	8		
Current (mA)	120		

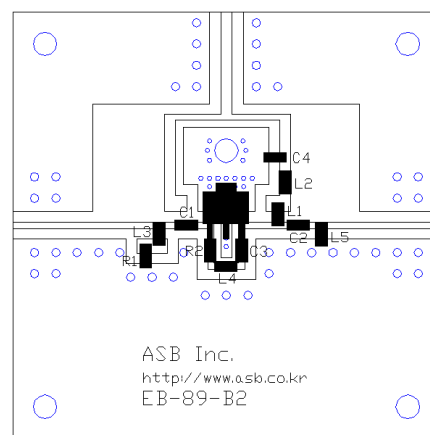
1) OIP3 is measured with two tones at an output power of +10 dBm/tone separated by 1 MHz.

2) OIP2 is measured at F1+F2 Frequency.

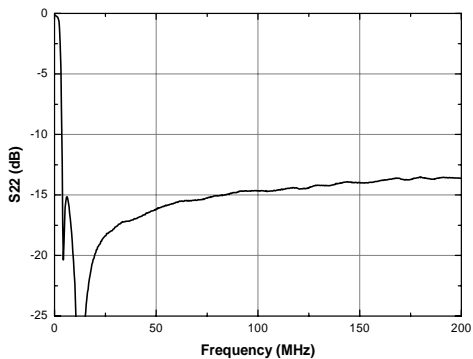
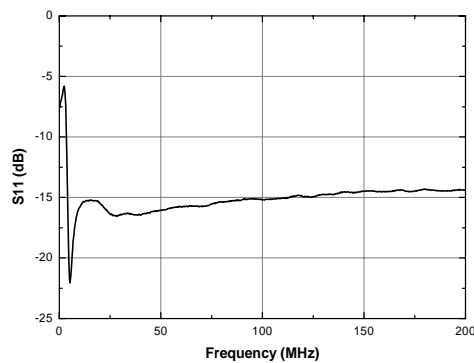
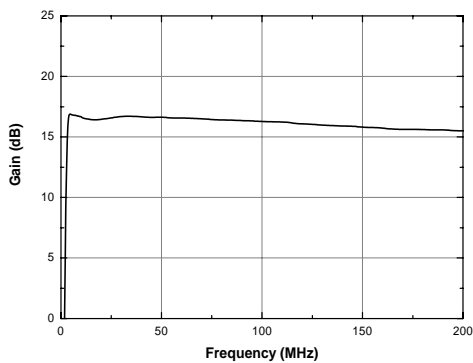
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### APPLICATION CIRCUIT

SMATV

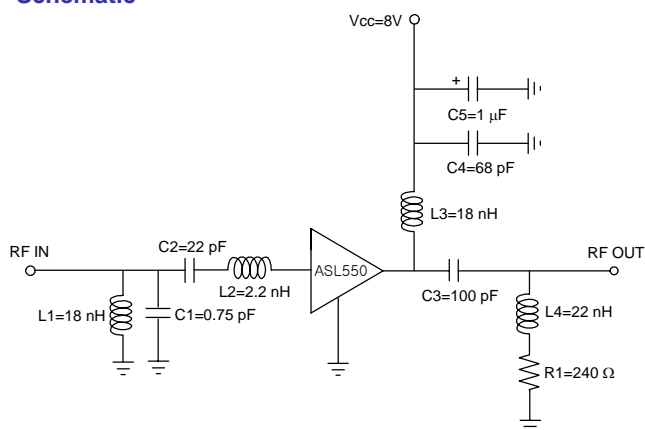
950 ~ 2600

+8 V

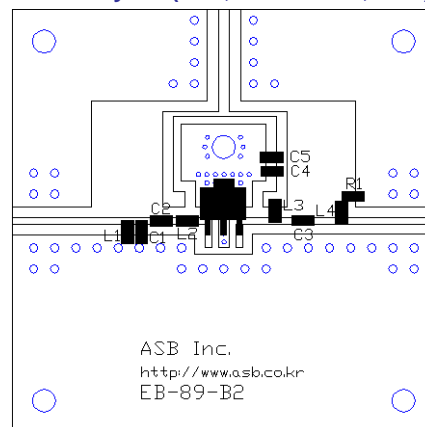
Frequency (MHz)	950	1800	2600
Noise Figure (dB)	2.2	2.5	3.6
Magnitude S21 (dB)	15.5	16.5	14.9
Magnitude S11 (dB)	-8	-12	-8
Magnitude S22 (dB)	-16	-8	-9
Output P1dB (dBm)	23	24	19
Output IP3 <sup>1)</sup> (dBm)	39	40.5	38
Device Voltage (V)	8		
Current (mA)	120		

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

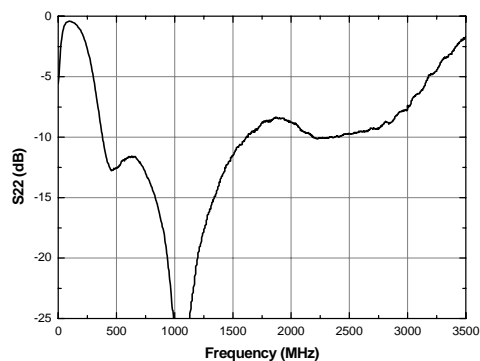
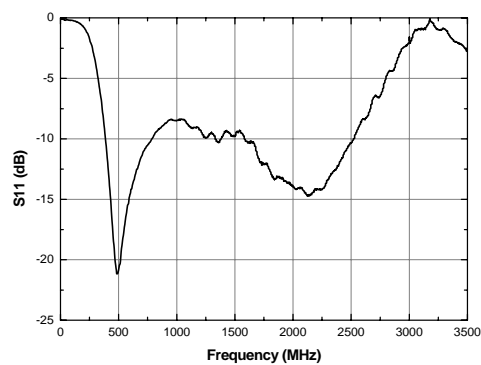
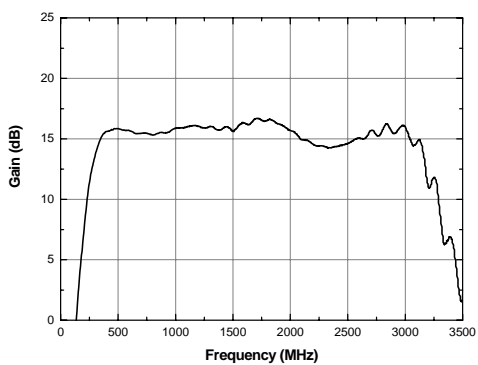
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### APPLICATION CIRCUIT

**Low Gain (12dB)**

**CATV**

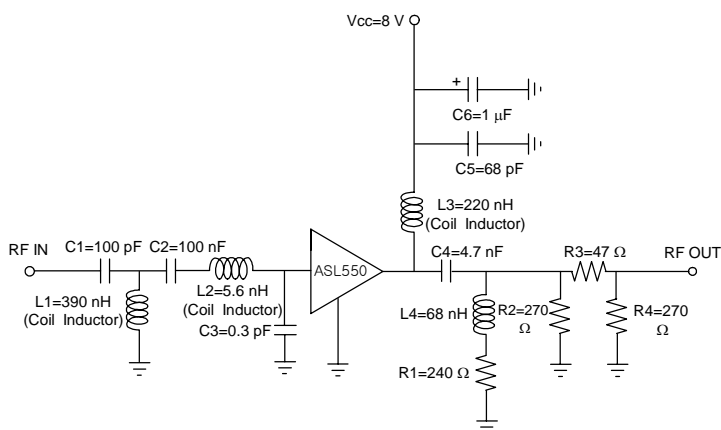
**50 ~ 1000**

**+8 V**

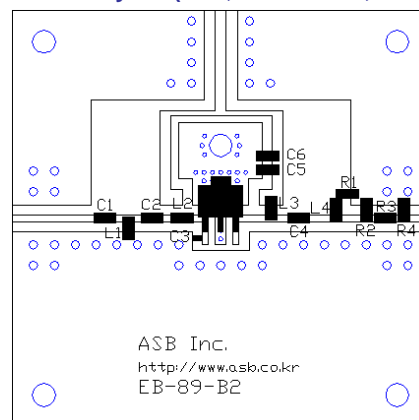
Frequency (MHz)	50	500	860
Noise Figure (dB)	2.2	2.2	2.6
Magnitude S21 (dB)	11.9	11.5	11.9
Magnitude S11 (dB)	-11	-14	-14
Magnitude S22 (dB)	-18	-18	-20
Output P1dB (dBm)	18.5	20	20
Output IP3 <sup>1)</sup> (dBm)	34	37	34.5
Device Voltage (V)	8		
Current (mA)	120		

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

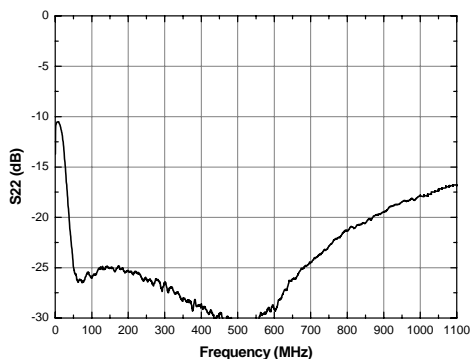
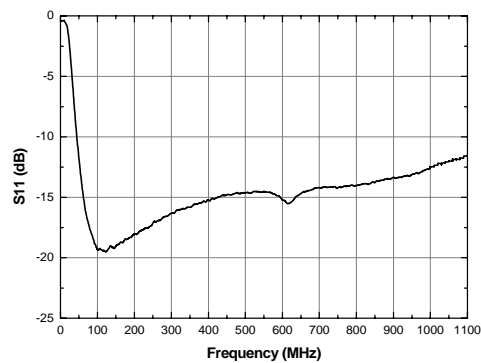
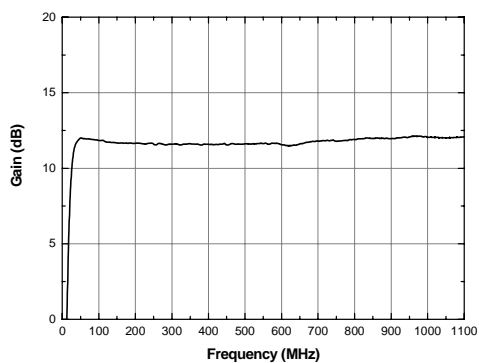
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### APPLICATION CIRCUIT

90 ~ 2600

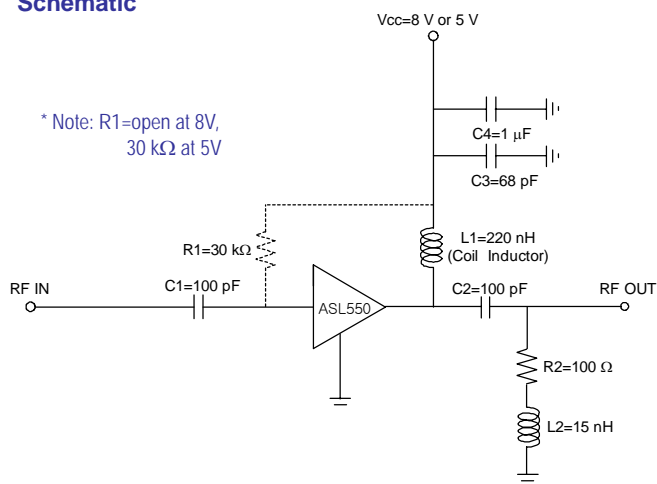
+8 V / +5 V

Frequency (MHz)	90	900	1800	2600	90	900	1800	2600
Noise Figure (dB)	1.7	2.2	2.5	3.4	1.7	2.1	2.4	3.4
Magnitude S21 (dB)	15.4	15	13.6	13.8	15.2	14.8	13.5	13.7
Magnitude S11 (dB)	-8	-7	-5	-7	-8	-7	-5	-7
Magnitude S22 (dB)	-13	-10	-4	-12	-13	-9	-4	-12
Output P1dB (dBm)	24	24	22.5	19.5	20.5	19	19	16
Output IP3 (dBm)	42 <sup>1)</sup>	39 <sup>1)</sup>	41 <sup>1)</sup>	37 <sup>1)</sup>	40 <sup>2)</sup>	38 <sup>2)</sup>	37 <sup>2)</sup>	35 <sup>2)</sup>
Device Voltage (V)	8				5			
Current (mA)	120				95			

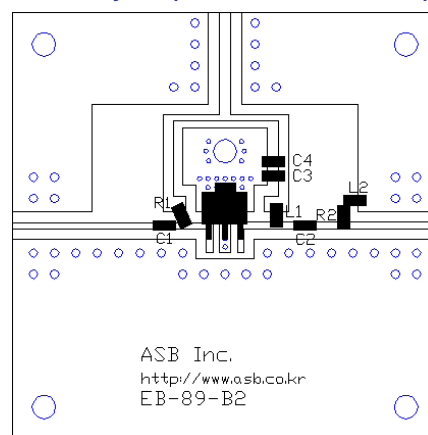
1) OIP3 is measured with two tones at an output power of +8 dBm/tone separated by 1 MHz.

2) OIP3 is measured with two tones at an output power of +3 dBm/tone separated by 1 MHz.

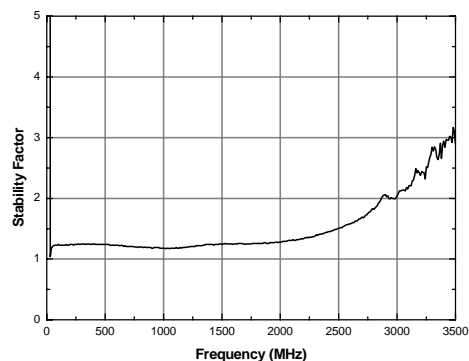
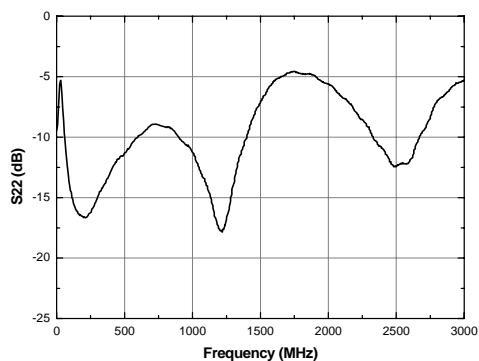
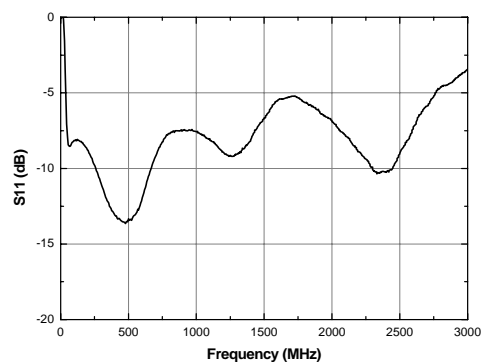
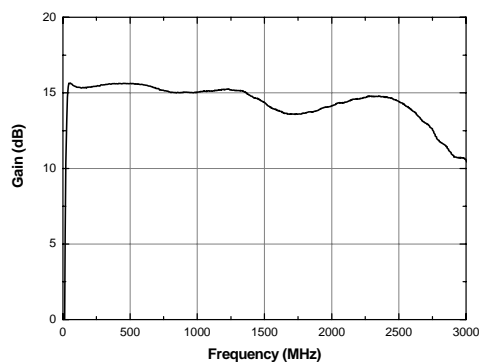
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters & K-factor





### APPLICATION CIRCUIT

CATV Push-Pull

2 : 1 transformer

50 ~ 1000

+8 V

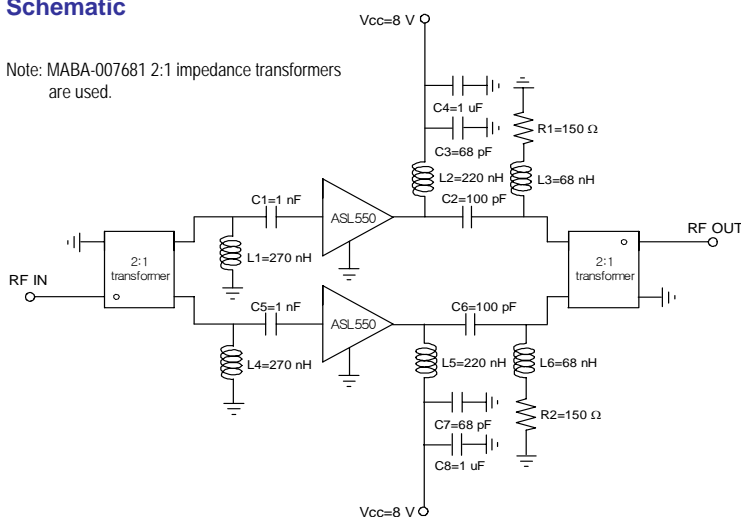
Frequency (MHz)	50	500	860
Magnitude S21 (dB)	15	14.9	14.1
Magnitude S11 (dB)	-15	-15	-11
Magnitude S22 (dB)	-9	-18	-13
Output P1dB (dBm)	26.5	26.5	26.5
Output IP3 <sup>1)</sup> (dBm)	44	43	44
Output IP2 <sup>1),2)</sup> (dBm)	81	69	70
Noise Figure (dB)	2.5	2.7	3.1
Device Voltage (V)	8		
Current (mA)	240		

1) OIP3 and OIP2 are measured with two tones at an output power of +9 dBm/tone separated by 6 MHz.

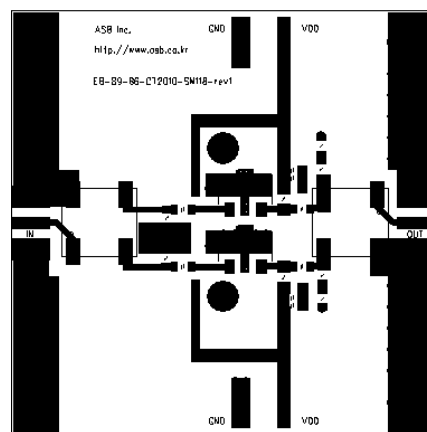
2) OIP2 is measured at F1+F2 Frequency.

### Schematic

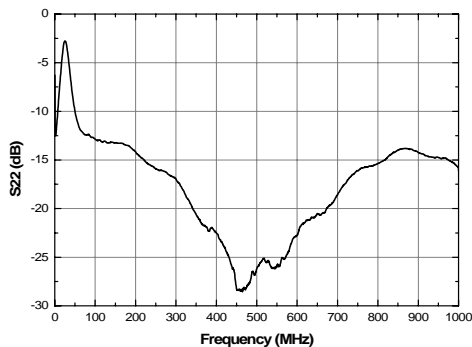
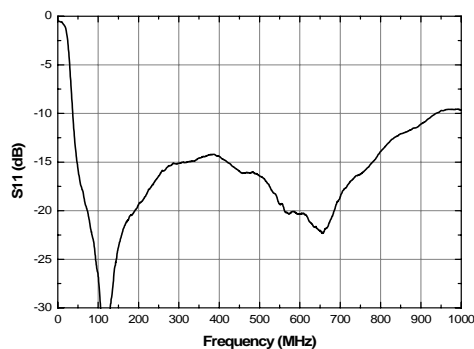
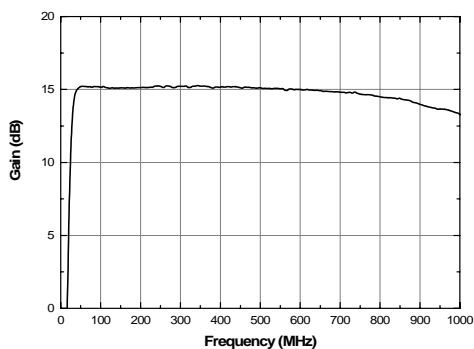
Note: MABA-007681 2:1 impedance transformers are used.



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### APPLICATION CIRCUIT

CATV Push-Pull

1 : 1 transformer

50 ~ 1000

+8 V

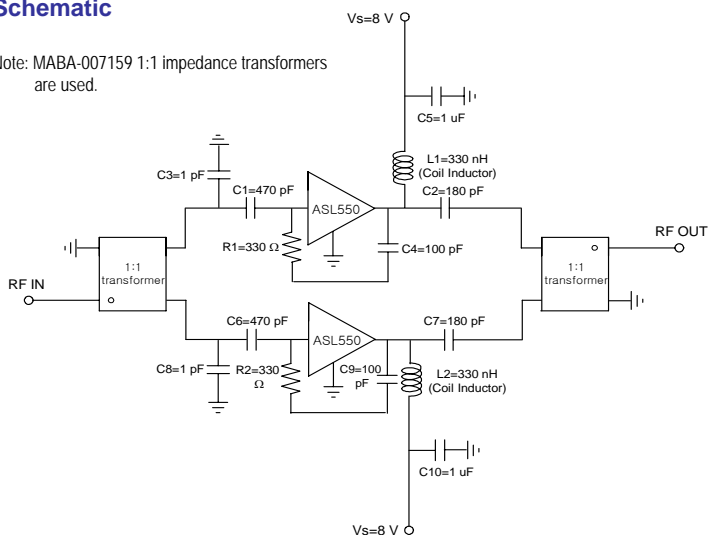
Frequency (MHz)	50	500	860
Magnitude S21 (dB)	11.7	11.5	11.2
Magnitude S11 (dB)	-17	-17	-17
Magnitude S22 (dB)	-20	-16	-16
Output P1dB (dBm)	26.5	27.5	27
Output IP3 <sup>1)</sup> (dBm)	41	47	44.5
Output IP2 <sup>1),2)</sup> (dBm)	70	69	63
Noise Figure (dB)	2.8	2.7	2.7
Device Voltage (V)	8		
Current (mA)	240		

1) OIP3 and OIP2 are measured with two tones at an output power of +10 dBm/tone separated by 6 MHz.

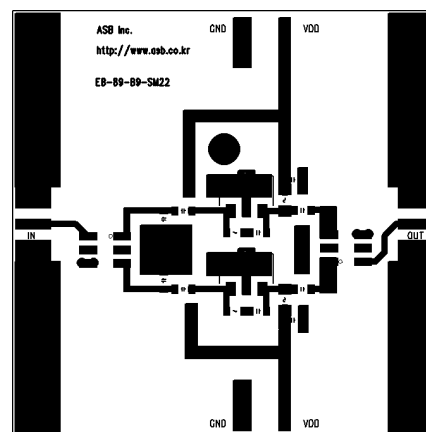
2) OIP2 is measured at F1+F2 Frequency.

### Schematic

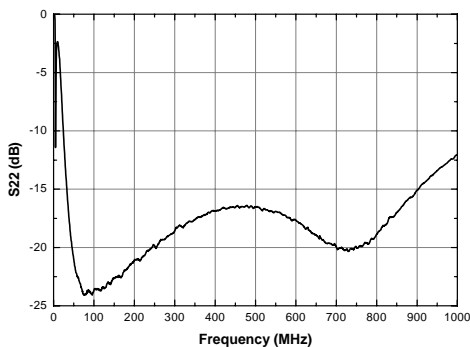
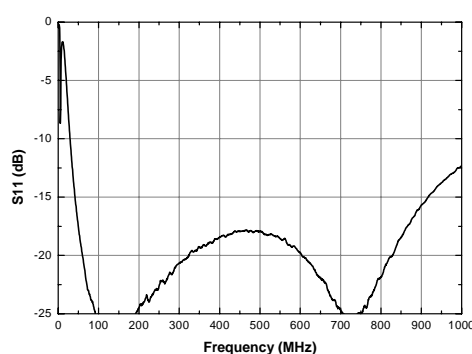
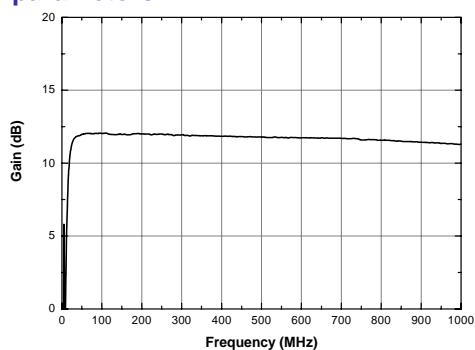
Note: MABA-007159 1:1 impedance transformers are used.



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### APPLICATION CIRCUIT

CATV Push-Pull

2 : 1 transformer

5 ~ 200

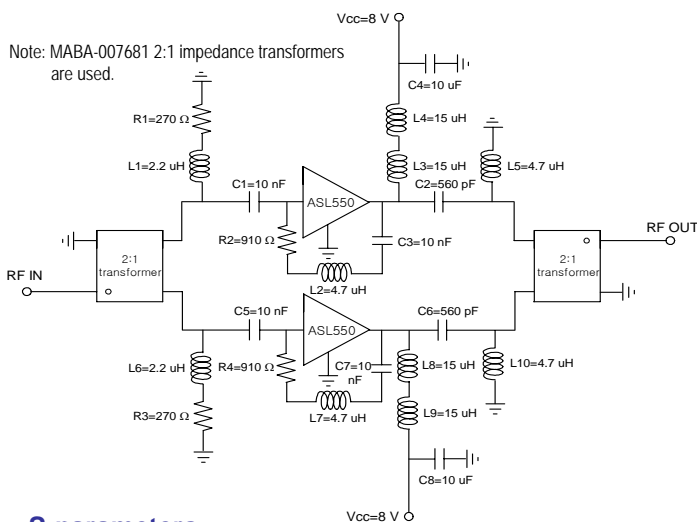
+8 V

Frequency (MHz)	5	50	200
Magnitude S21 (dB)	16.2	15.8	14.5
Magnitude S11 (dB)	-17	-15	-14
Magnitude S22 (dB)	-16	-15	-14
Output P1dB (dBm)	26.5	27.5	27.5
Output IP3 <sup>1)</sup> (dBm)	36.5	40.5	43.5
Output IP2 <sup>1),2)</sup> (dBm)	72	73	77
Noise Figure (dB)	2.9	2.2	2.4
Device Voltage (V)	8		
Current (mA)	240		

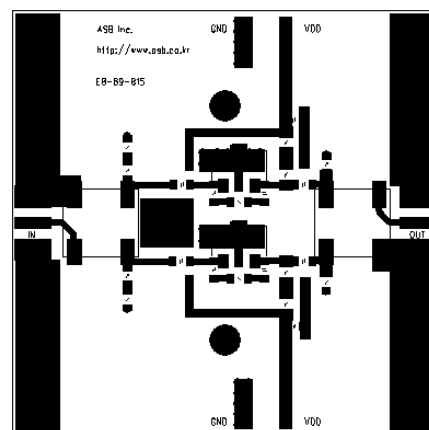
1) OIP3 and OIP2 are measured with two tones at an output power of +12 dBm/tone separated by 1 MHz.

2) OIP2 is measured at F1+F2 Frequency.

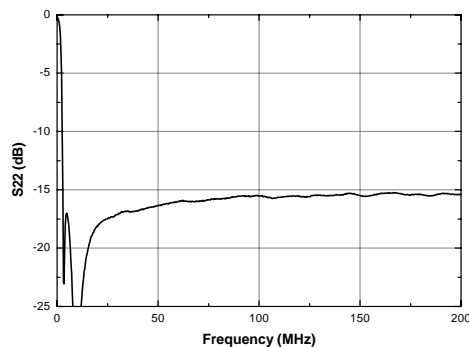
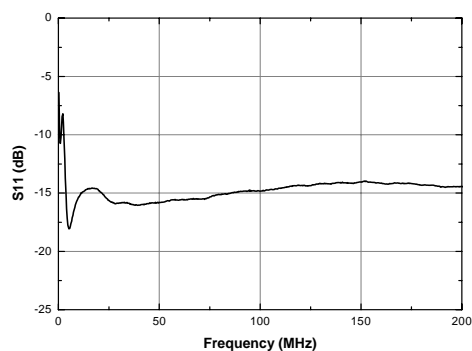
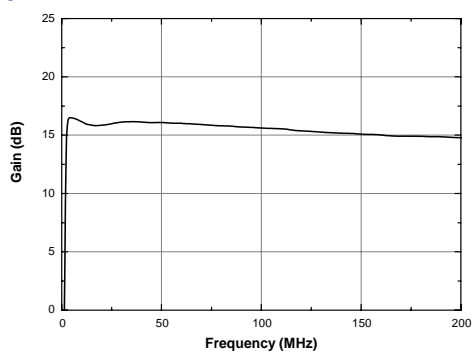
### Schematic



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters



### APPLICATION CIRCUIT

CATV Push-Pull

1 : 1 transformer

5 ~ 200

+8 V

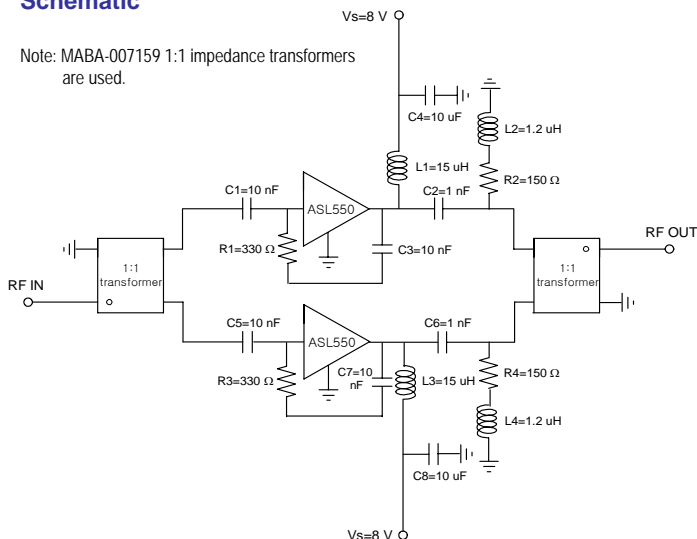
Frequency (MHz)	5	50	200
Magnitude S21 (dB)	12.5	11.8	11.7
Magnitude S11 (dB)	-20	-20	-20
Magnitude S22 (dB)	-18	-20	-20
Output P1dB (dBm)	25	25.5	26.5
Output IP3 <sup>1)</sup> (dBm)	34	41.5	46
Output IP2 <sup>1),2)</sup> (dBm)	47	70	74
Noise Figure (dB)	3.0	2.8	2.8
Device Voltage (V)	8		
Current (mA)	240		

1) OIP3 and OIP2 are measured with two tones at an output power of +12 dBm/tone separated by 1 MHz.

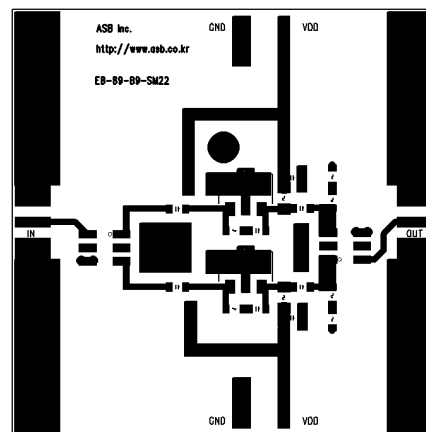
2) OIP2 is measured at F1+F2 Frequency.

### Schematic

Note: MABA-007159 1:1 impedance transformers are used.



### Board Layout (FR4, 40x40 mm<sup>2</sup>, 0.8T)



### S-parameters

