ASL550

Wideband Linear Amplifier MMIC

Features

- High Linearity 43 dBm OIP3
- Low Noise Figure 2.0 dB
- 24 dBm P1dB
- 75 Ω Input & Output Match
- Bandwidth 5 ~ 1200 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 2.6 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 a SOT89 package and passes through the stringent DC, RF, and reliability tests.

RoHS-compliant



Package Style: SOT89

Typical Performance

(Supply Voltage = +8 V, T_A = +25 °C, Z_0 = 75 Ω)

Parameters	Units	Typical					
Frequency	MHz	5	50	500	860	1200	2600
Noise Figure	dB	2.9	2.0	2.0	2.2	2.2	3.6
Gain	dB	15.5	17.1	17.0	16.9	15.0	14.9
S11	dB	-16	-15	-15	-16	-15	-8
S22	dB	-16	-14	-17	-20	-12	-9
Output P1dB	dBm	26.5	23.0	24.0	24.0	22.0	19.0
Output IP3[1]	dBm	41.5	40.0	43.0	41.5	39.0	38.0
Output IP2[1),2)]	dBm	74	53	54	53	48	-
CSO[3] (@ 355.25 MHz)	dBc	-	74			-	
CTB[3] (@ 355.25 MHz)	dBc	-	75			-	
Current	mA	240	120			120	
Device Voltage	V	+8	+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	23	24	
Current	mA	100	120	142
Device Voltage	V		+8	

Absolute Maximum Ratings, T_A = +25 °C

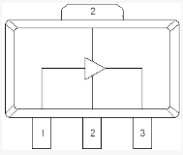
Parameters	Rating
Operating Case Temperature	-40 to +85 °C
Storage Temperature	-40 to +150 °C
Device Voltage	+9 V
Operating Junction Temperature	+150 °C
Input RF Power (CW, 75 Ω matched)*	+5 dBm
Maximum Current	220 mA
Thermal Resistance	43 °C/W

The operation of this device in excess of any of these limits may cause permanent damage.
* Refer to the max. input power data at http://www.asb.co.kr/pdf/Maximum_Input_Power_Analysis.pdf. The max. input power, in principle, depends upon the application frequency, the matching circuit, and device voltage.

Application Circuit

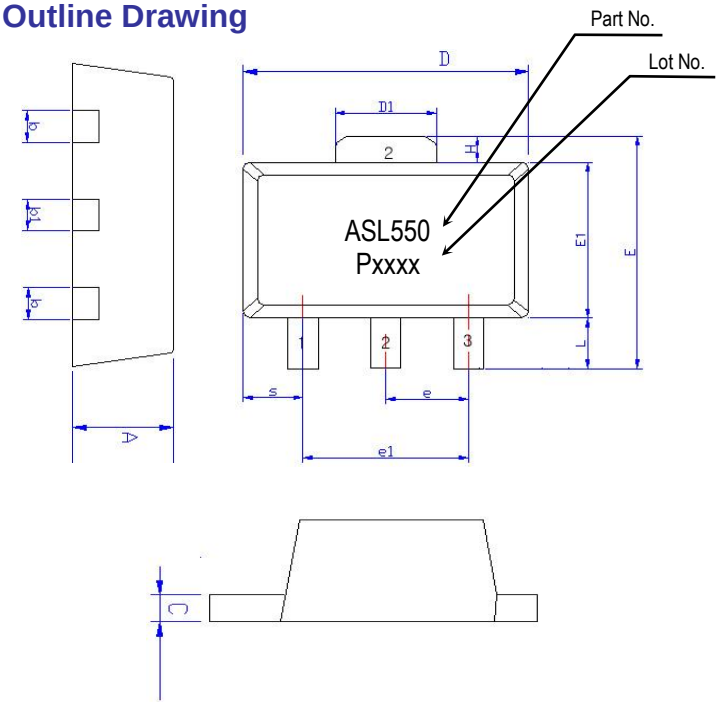
- 50 ~ 1000 MHz (Gain Flatness: 8 V)
- 50 ~ 1000 MHz (High Linearity)
- 50 ~ 1000 MHz (Gain Flatness, 5 V)
- 50 ~ 1000 MHz (Gain Flatness, 6 V)
- 50 ~ 1000 MHz (Positive Gain Slope)
- 50 ~ 1000 MHz (Min. VSWR)
- 50 ~ 1000 MHz (Low Gain)
- 50 ~ 1200 MHz
- 2 ~ 32 MHz
- 5 ~ 200 MHz (8V & 5V)
- 950 ~ 2600 MHz (SMATV)
- 90 ~ 2600 MHz
- 50 ~ 1000 MHz (Push-Pull, 2:1 transformer)
- 50 ~ 1000 MHz (Push-Pull, 1:1 transformer)
- 50 ~ 1200 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

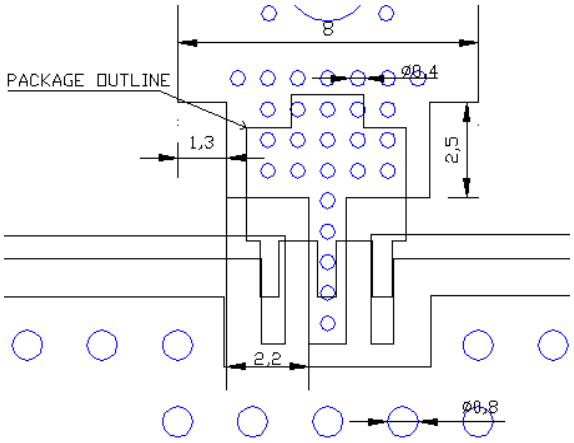
Outline Drawing



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: Gallium Arsenide Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Moisture Sensitivity Level (MSL)

Level 3 at 260 °C reflow

APPLICATION CIRCUIT

CATV

Gain Flatness (0.2 dB)

50 ~ 1000 MHz

+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	24	24
Output IP3[1] (dBm)	40.0	43.0	41.5
Output IP2[1),2)] (dBm)	53	54	53
CSO[3] (dBc)	74		
CTB[3] (dBc)	75		
Device Voltage (V)	+8		
Current (mA)	120		

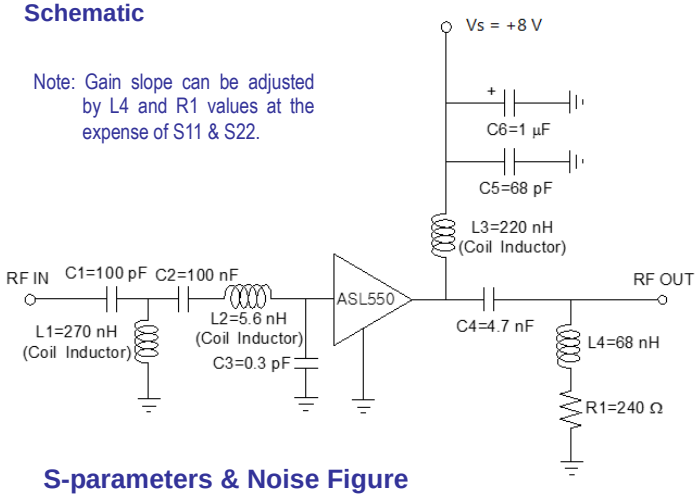
1) OIP3 and OIP2 are measured with two tones at an output power of +9 dBm/tone seperated by 6 MHz.

2) OIP2 is measured at F1+F2 Frequency.

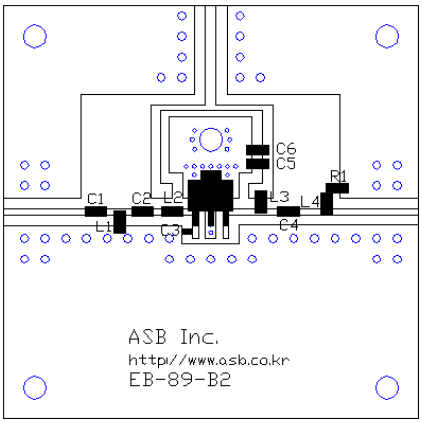
3) CSO & CTB was measured at 335.25 MHz. For 116 flat channels at the input, measured at the output were 77 analog channels (55 MHz to 550 MHz) @ +20 dBmV per channel and 39 digital channels (550 MHz to 750 MHz) @ 6 dB lower than that of the analog channel.

Schematic

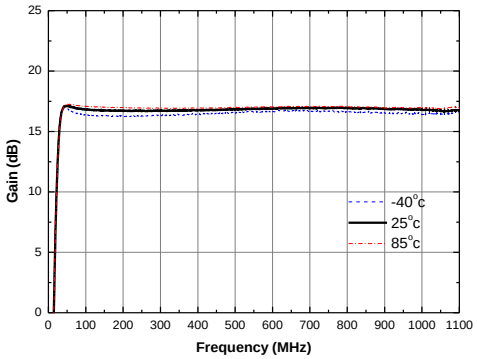
Note: Gain slope can be adjusted by L4 and R1 values at the expense of S11 & S22.

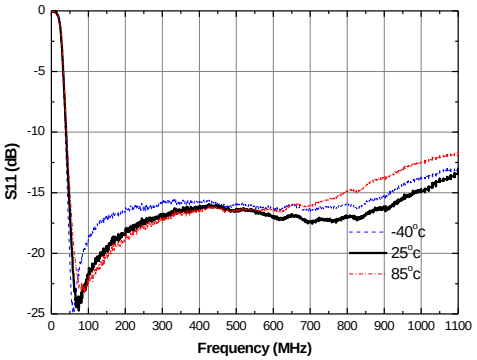


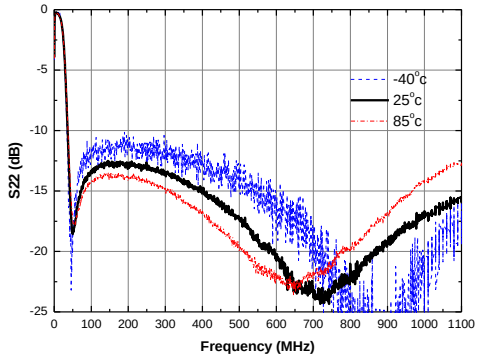
Board Layout (FR4, 40x40 mm², 0.8T)

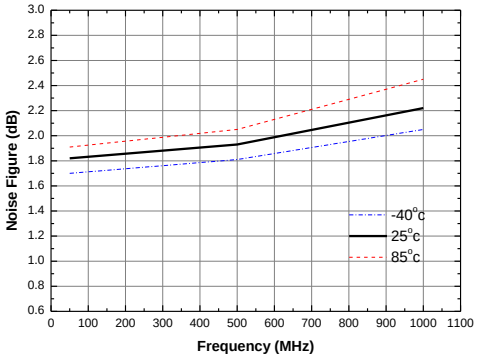


S-parameters & Noise Figure

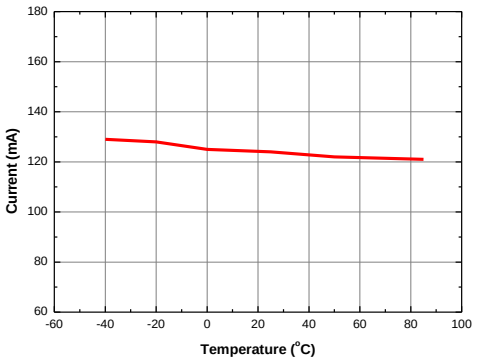




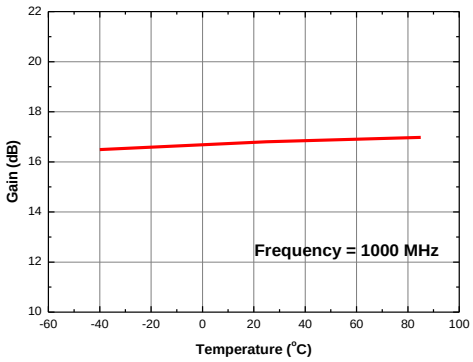




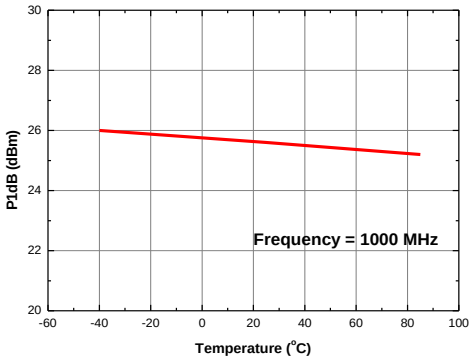
Current vs. Temperature



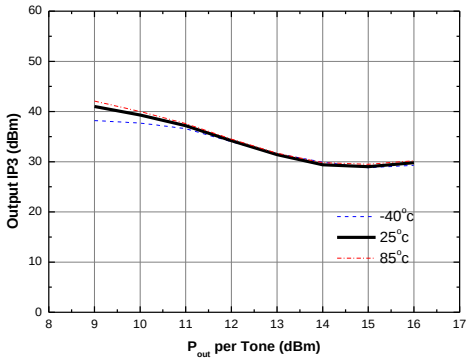
Gain vs. Temperature



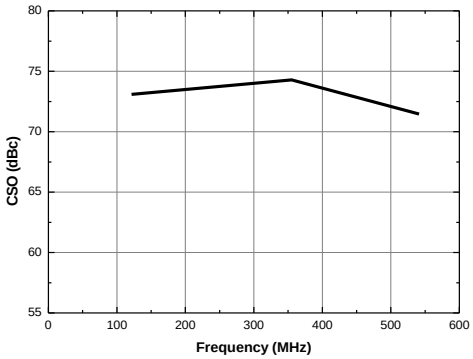
P1dB vs. Temperature

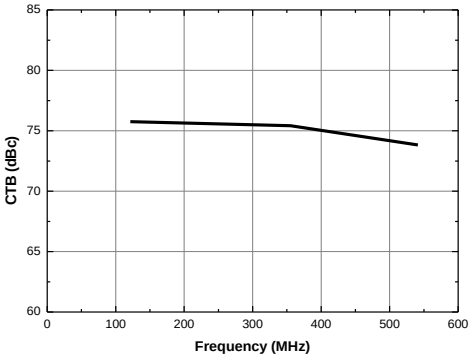


Output IP3 vs. Tone Power (Frequency = 1000 MHz)



CSO & CTB





Typical Performance (at +4.8 V, 55 mA)

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)	17.0	20.0	19.0
Output IP3[1)] (dBm)	31.0	36.0	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

CATV

Gain Flatness (0.2 dB)

50 ~ 1000 MHz

+8 V

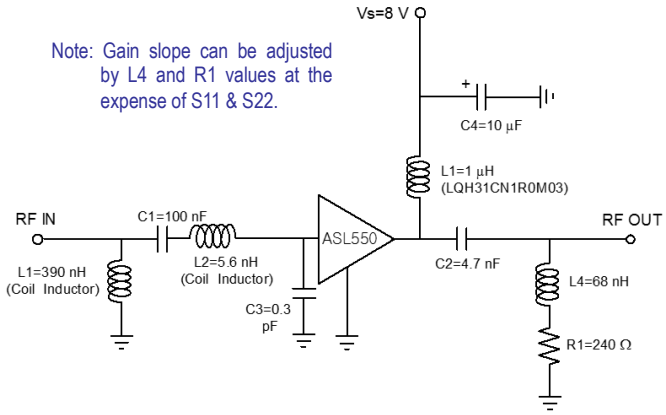
Frequency (MHz)	50	500	860
Noise Figure (dB)	2.0	1.9	2.1
Magnitude S21 (dB)	16.3	16.0	16.1
Magnitude S11 (dB)	-18	-17	-14
Magnitude S22 (dB)	-12	-16	-16
Output P1dB (dBm)	24.5	25.0	24.5
Output IP3[1] (dBm)	42.0	43.5	39.0
Output IP2[1),2)] (dBm)	55	50	54
CSO[3] (dBc)	74		
CTB[3] (dBc)	75		
Device Voltage (V)	+8		
Current (mA)	120		

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

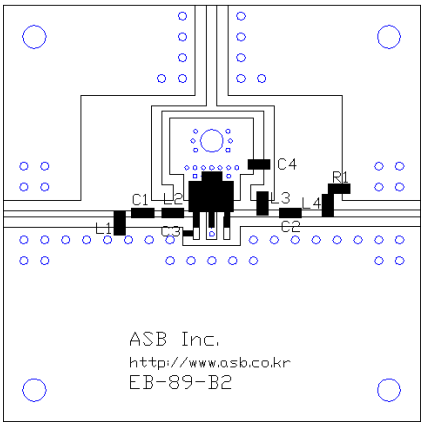
2) OIP2 is measured at F1+F2 Frequency.

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.

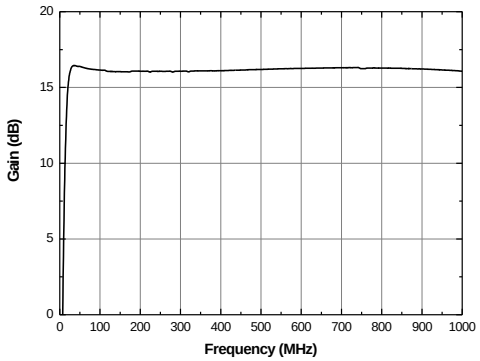
Schematic

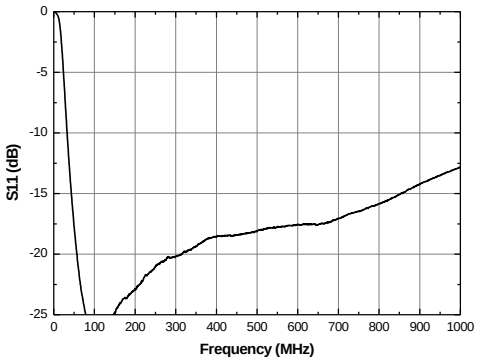


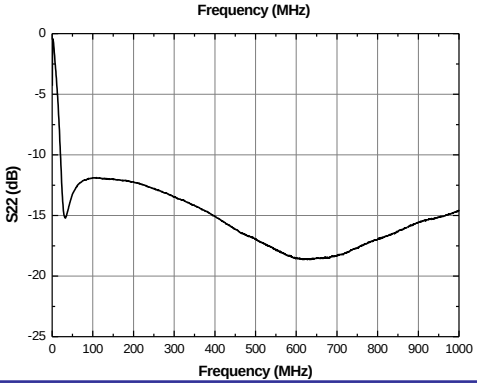
Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV

Gain Flatness (1.0 dB)

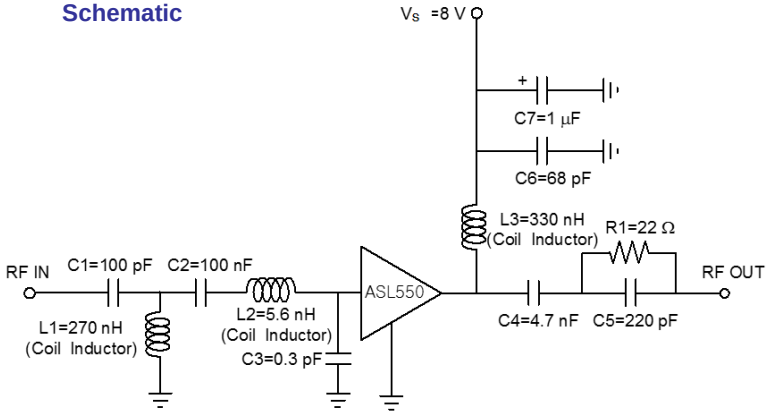
50 ~ 1000 MHz

+8 V

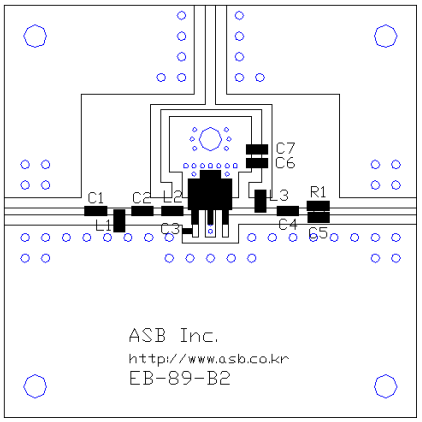
Frequency (MHz)	50	500	860
Noise Figure (dB)	2.0	2.0	2.2
Magnitude S21 (dB)	17.8	17.5	16.8
Magnitude S11 (dB)	-16	-18	-16
Magnitude S22 (dB)	-20	-20	-16
Output P1dB (dBm)	24	25	25
Output IP3[1] (dBm)	40	42	43
CSO[2] (dBc)	74		
CTB[2] (dBc)	75		
Device Voltage (V)	+8		
Current (mA)	120		

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.

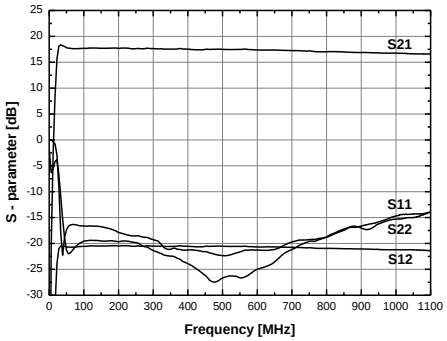
Schematic

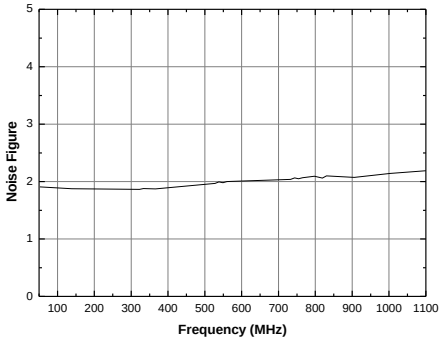


Board Layout (FR4, 40x40 mm², 0.8T)

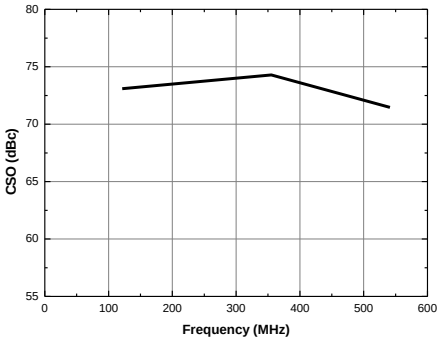


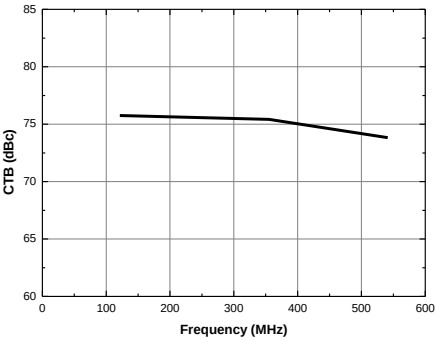
S-parameters & Noise Figure





CSO & CTB





APPLICATION CIRCUIT

CATV

Gain Flatness (0.2 dB)

High Linearity

50 ~ 1000 MHz

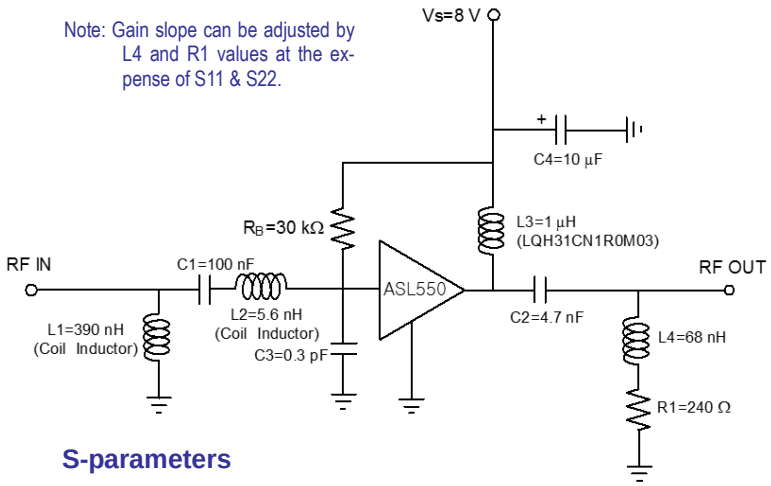
+8 V

Frequency (MHz)	50	500	860
Noise Figure (dB)	2.0	1.9	2.1
Magnitude S21 (dB)	16.4	16.2	16.2
Magnitude S11 (dB)	-18	-16	-13
Magnitude S22 (dB)	-12	-17	-16
Output P1dB (dBm)	25.0	24.5	24.0
Output IP3[1] (dBm)	44	43	40
Output IP2[1),2)] (dBm)	61	59	58
CSO (dBc)	-		
CTB (dBc)	-		
Device Voltage (V)	+8		
Current (mA)	185		

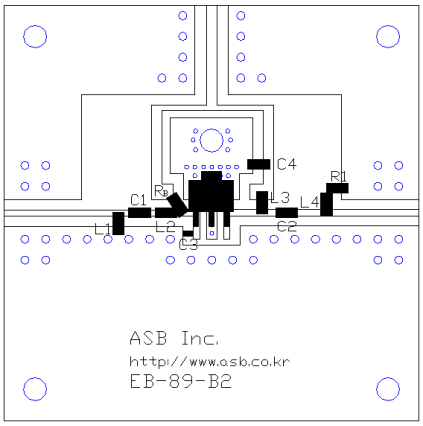
1) OIP3 and OIP2 are measured with two tones at an output power of +10 dBm/tone separated by 6 MHz.

2) OIP2 is measured at F1+F2 Frequency.

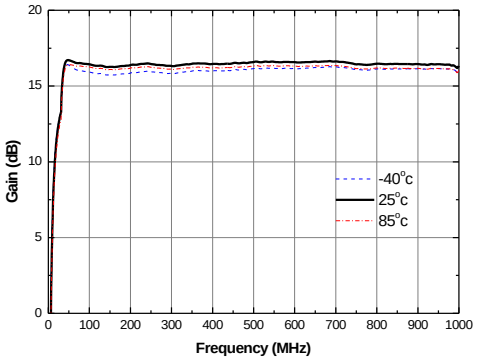
Schematic

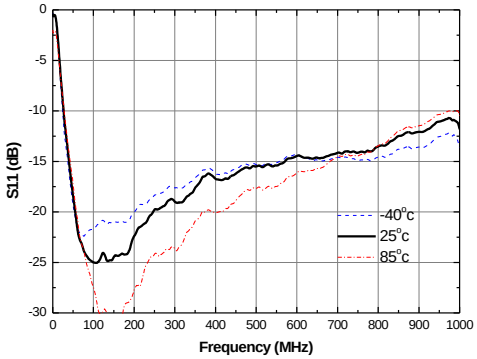


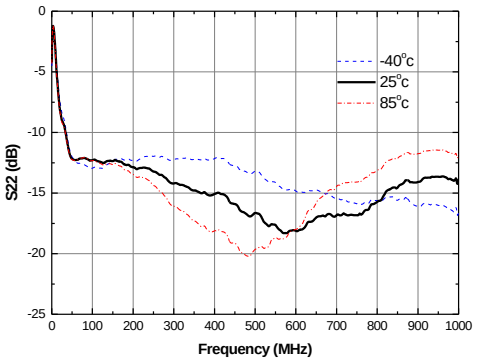
Board Layout (FR4, 40x40 mm², 0.8T)



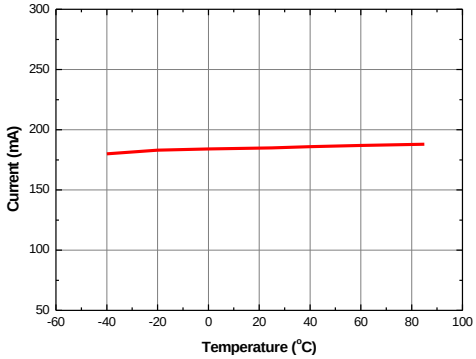
S-parameters



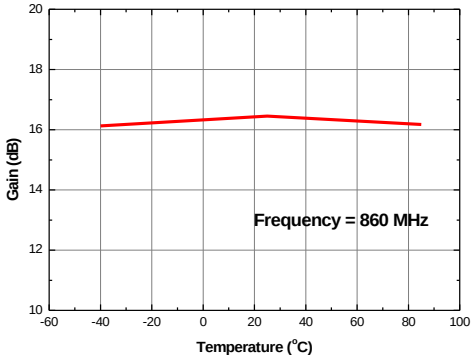




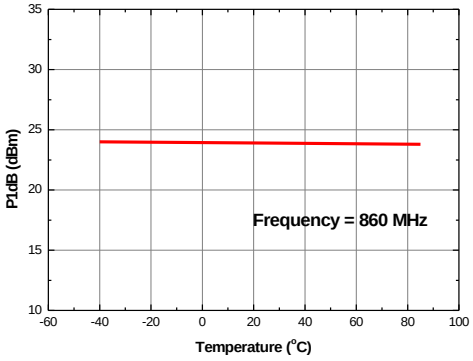
Current vs. Temperature



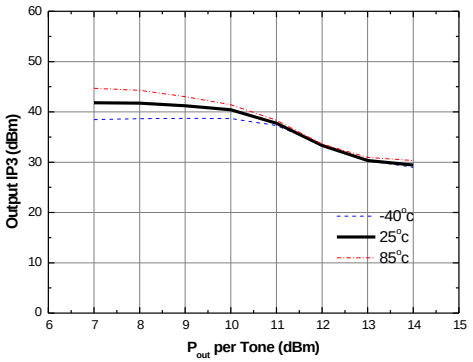
Gain vs. Temperature



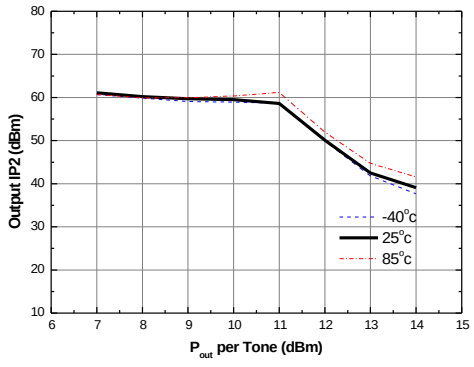
P1dB vs. Temperature



Output IP3 vs. Tone Power (Frequency = 860 MHz)



Output IP2 vs. Tone Power (Frequency = 860 MHz)



APPLICATION CIRCUIT

CATV

Gain Flatness (0.2 dB)

50 ~ 1000 MHz

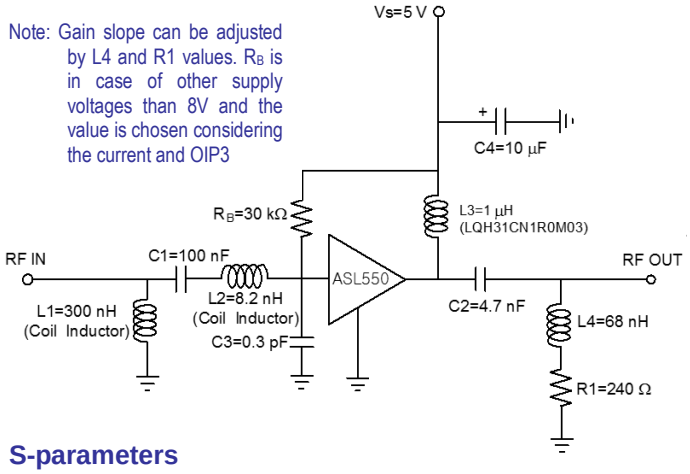
+5 V

Frequency (MHz)	50	500	860
Noise Figure (dB)	2.1	2.1	2.2
Magnitude S21 (dB)	15.8	15.7	15.6
Magnitude S11 (dB)	-13	-16	-12
Magnitude S22 (dB)	-11	-15	-16
Output P1dB (dBm)	20.0	21.0	19.5
Output IP3[1] (dBm)	37	39	35
Output IP2[2] (dBm)	50	48	54
CSO[3] (dBc)	66		
CTB[3] (dBc)	76		
Device Voltage (V)	+5		
Current (mA)	92		

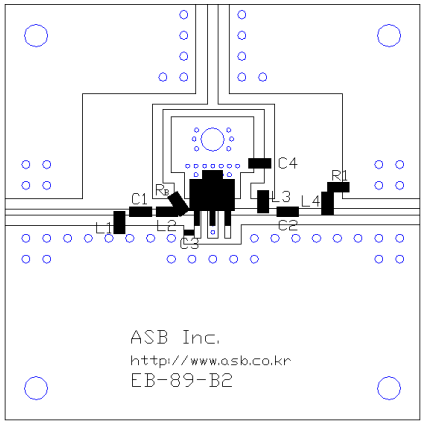
1) OIP3 and OIP2 are measured with two tones at an output power of +6 dBm/tone separated by 6 MHz.
2) OIP2 is measured at F1+F2 Frequency.
3) 160 channels, +20 dBmV per channel (measured at output).

Schematic

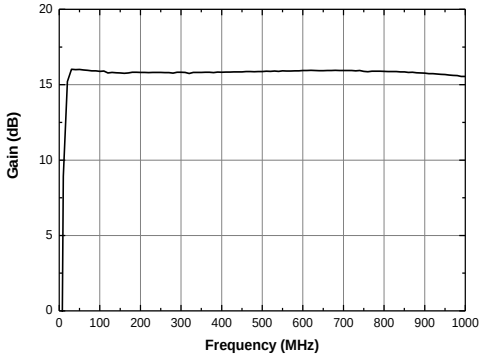
Note: Gain slope can be adjusted by L4 and R1 values. R_B is in case of other supply voltages than 8V and the value is chosen considering the current and OIP3

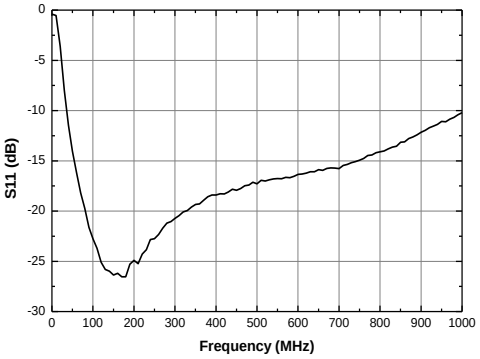


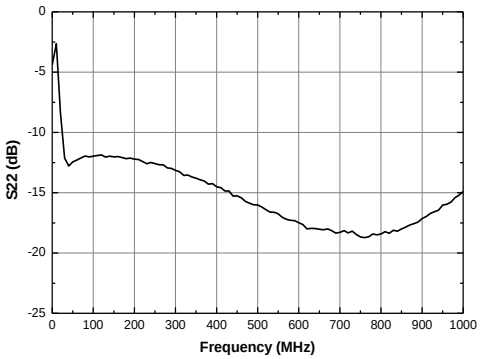
Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV

Gain Flatness (0.3 dB)

50 ~ 1000 MHz

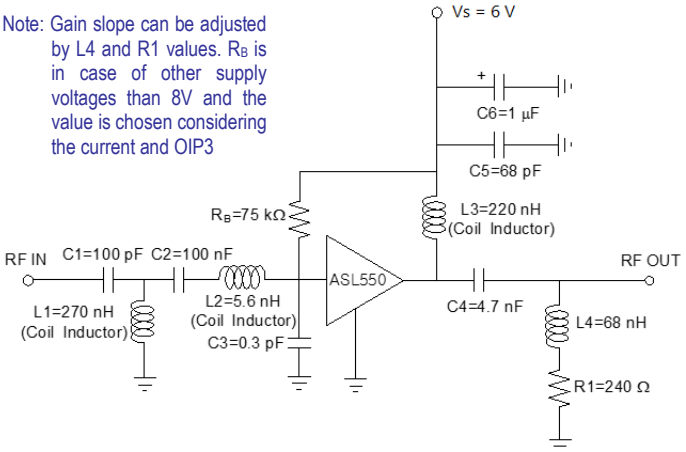
+6 V

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[1)] (dBm)	38.0	42.0	39.5
Device Voltage (V)	+6		
Current (mA)	92		

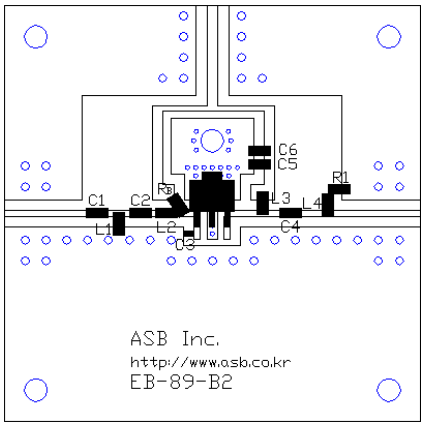
1) OIP3 is measured with two tones at an output power of +5 dBm/tone separated by 6 MHz.

Schematic

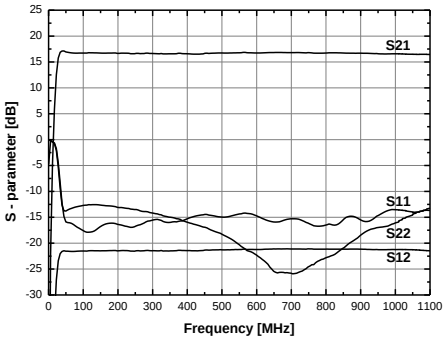
Note: Gain slope can be adjusted by L4 and R1 values. R_B is in case of other supply voltages than 8V and the value is chosen considering the current and OIP3

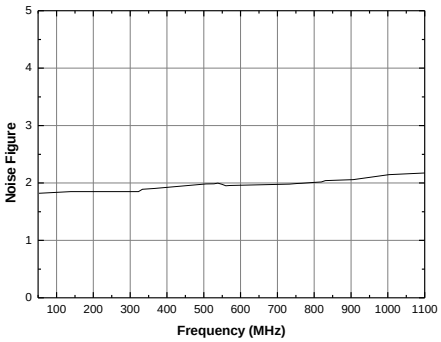


Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters & Noise Figure





APPLICATION CIRCUIT

CATV

Gain Flatness (0.8 dB)

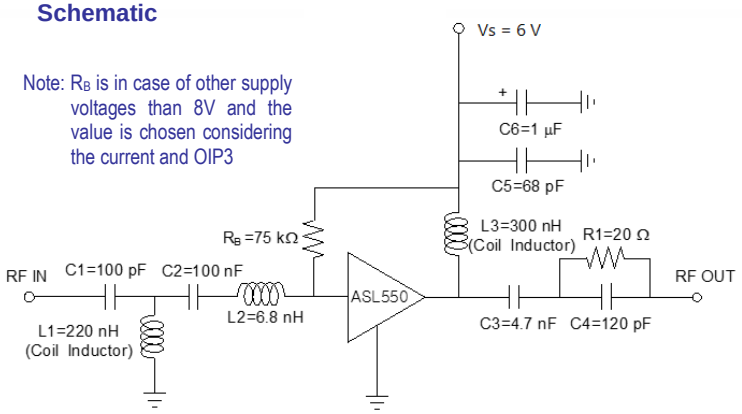
50 ~ 1000 MHz

+6 V

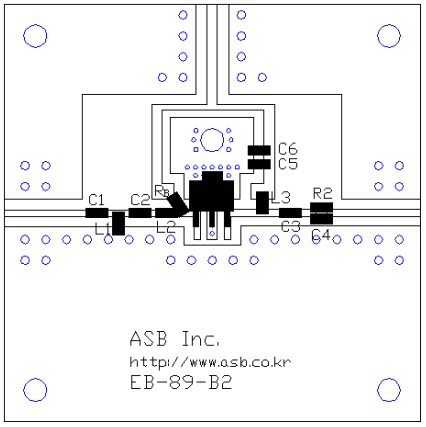
Frequency (MHz)	50	500	860
Noise Figure (dB)	2.1	2.2	2.5
Magnitude S21 (dB)	17.7	17.4	16.9
Magnitude S11 (dB)	-18	-18	-16
Magnitude S22 (dB)	-15	-22	-18
Output P1dB (dBm)	20	21	20
Output IP3[1)] (dBm)	36.0	40.0	36.5
Device Voltage (V)	+6		
Current (mA)	92		

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

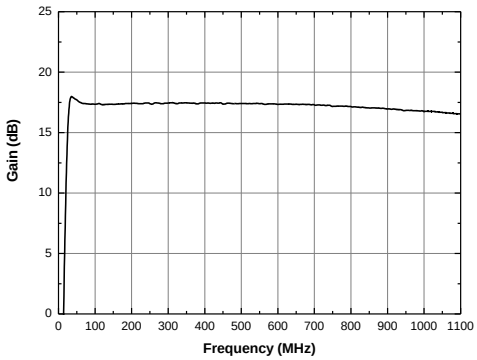
Schematic

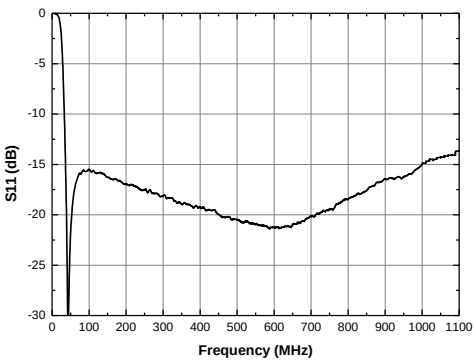


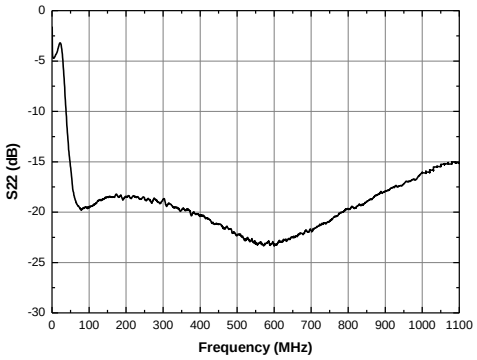
Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV

Positive Gain Slope

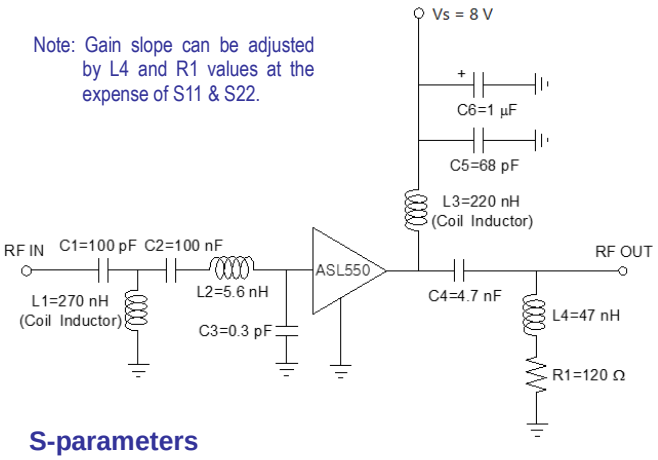
50 ~ 1000 MHz

+8 V

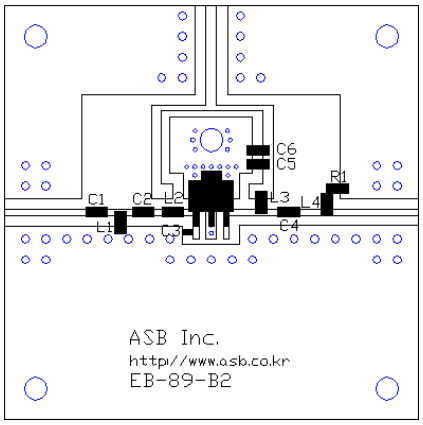
Frequency (MHz)	50	500	860
Noise Figure (dB)	1.9	1.9	2.2
Magnitude S21 (dB)	15.9	16.6	16.9
Magnitude S11 (dB)	-15	-11	-12
Magnitude S22 (dB)	-10	-13	-20
Output P1dB (dBm)	23.5	25.0	24.5
Output IP3[1] (dBm)	40	42	40
CSO[2] (dBc)	74		
CTB[2] (dBc)	75		
Device Voltage (V)	+8		
Current (mA)	120		

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 550 MHz) @ +20 dBmV per channel; 39 digital channels (550 MHz to 750 MHz) @ 6 dB below analog channels, measured at 335.25 MHz.

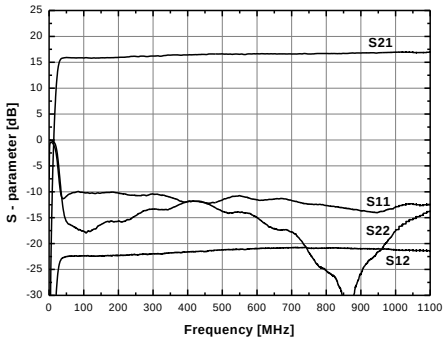
Schematic



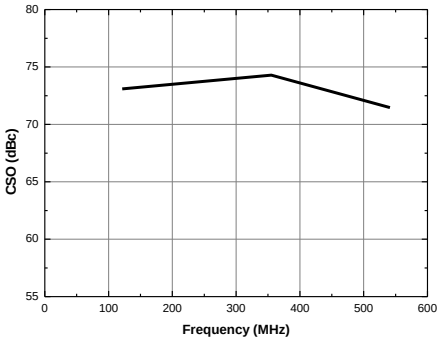
Board Layout (FR4, 40x40 mm², 0.8T)

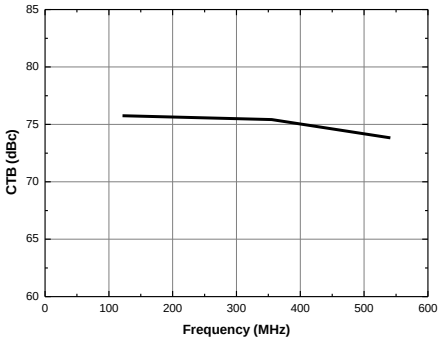


S-parameters



CSO & CTB





APPLICATION CIRCUIT

CATV

Min. VSWR

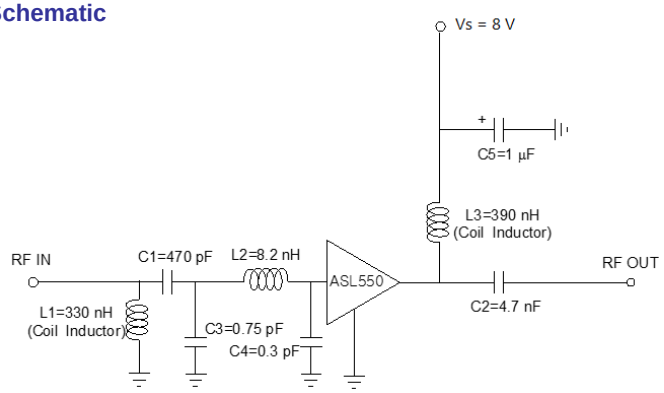
50 ~ 1000 MHz

+8 V

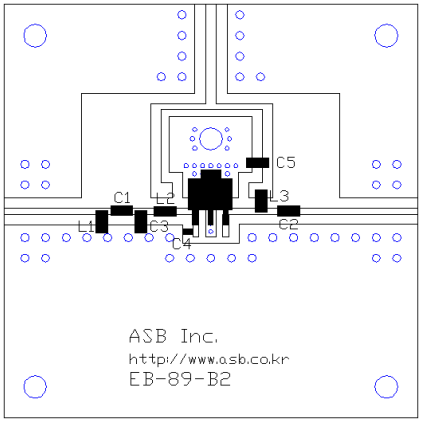
Frequency (MHz)	50	500	860
Noise Figure (dB)	2.0	2.0	2.2
Magnitude S21 (dB)	18.2	17.5	16.9
Magnitude S11 (dB)	-18	-18	-17
Magnitude S22 (dB)	-20	-20	-17
Output P1dB (dBm)	24	25	25
Output IP3[1] (dBm)	40.0	42.0	39.5
Output IP2[1),2)] (dBm)	55	56	54
CSO[3] (dBc)	74		
CTB[3] (dBc)	75		
Device Voltage (V)	+8		
Current (mA)	120		

1) OIP3 is measured with two tones at an output power of +10 dBm/tone separated by 6 MHz.
2) OIP2 is measured at F1+F2 Frequency.
3) 116 total channels, flat input; 77 analog channels (55 MHz to 550 MHz) @ +20 dBmV per channel; 39 digital channels (550 MHz to 750 MHz) @ 6 dB below analog channels, measured at 335.25 MHz.

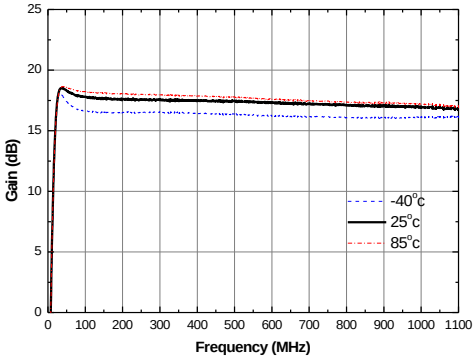
Schematic

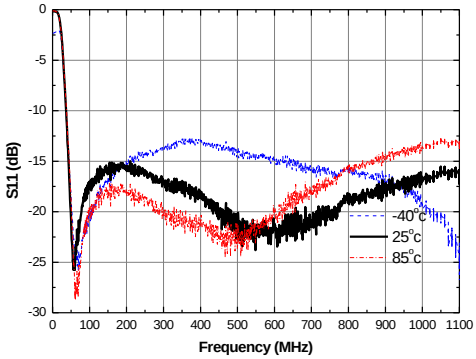


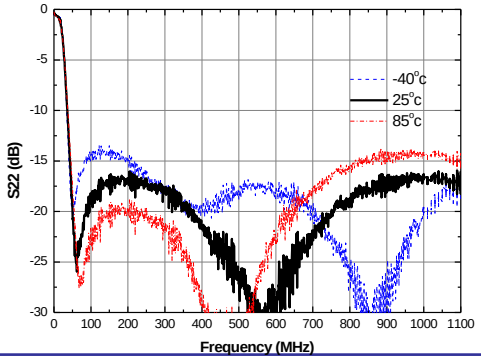
Board Layout (FR4, 40x40 mm², 0.8T)

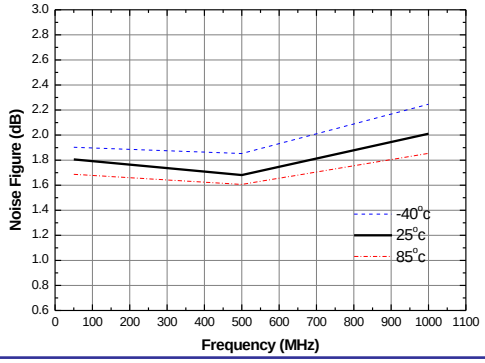


S-parameters & Noise Figure









APPLICATION CIRCUIT

CATV

Low Gain (12 dB)

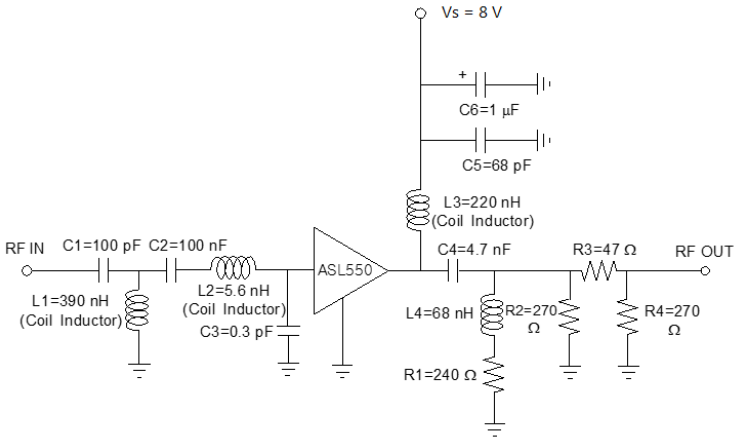
50 ~ 1000 MHz

+8 V

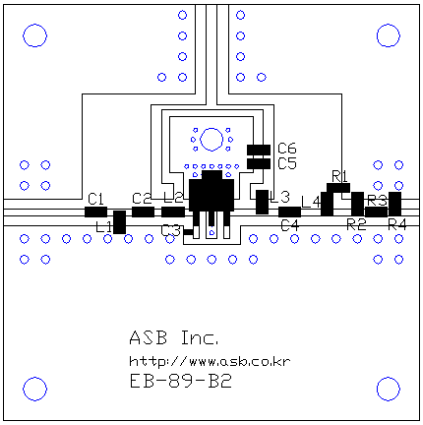
Frequency (MHz)	50	500	860
Noise Figure (dB)	2.2	2.2	2.6
Magnitude S21 (dB)	11.9	11.5	11.9
Magnitude S11 (dB)	-11	-14	-14
Magnitude S22 (dB)	-18	-18	-20
Output P1dB (dBm)	18.5	20.0	20.0
Output IP3[1)] (dBm)	34.0	37.0	34.5
Device Voltage (V)	+8		
Current (mA)	120		

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

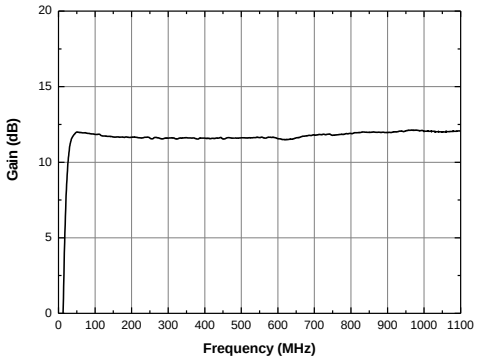
Schematic

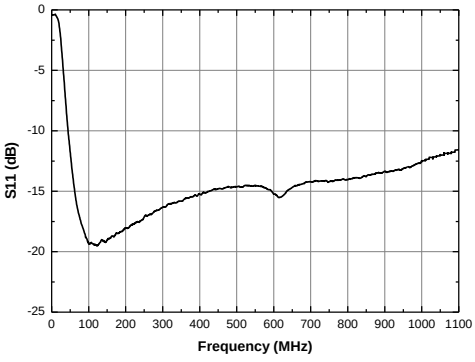


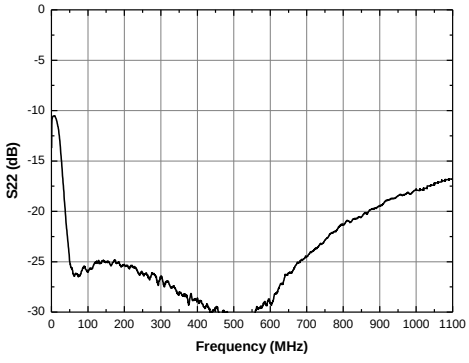
Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV

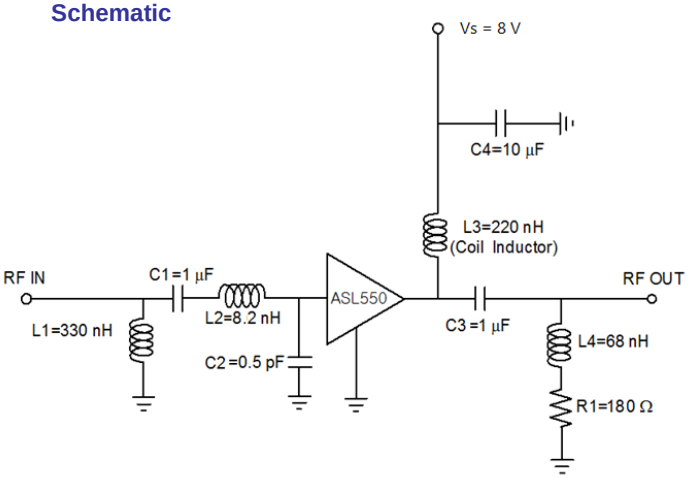
50 ~ 1200 MHz

+8 V

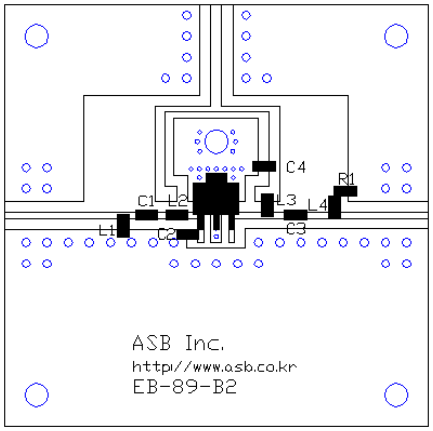
Frequency (MHz)	50	500	1200
Noise Figure (dB)	2.0	2.1	2.2
Magnitude S21 (dB)	15.8	15.5	15.0
Magnitude S11 (dB)	-10	-14	-15
Magnitude S22 (dB)	-11	-15	-12
Output P1dB (dBm)	23	24	22
Output IP3[1] (dBm)	40.0	42.0	39.0
Output IP2[1),2)] (dBm)	54	55	48
Device Voltage (V)	+8		
Current (mA)	120		

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.

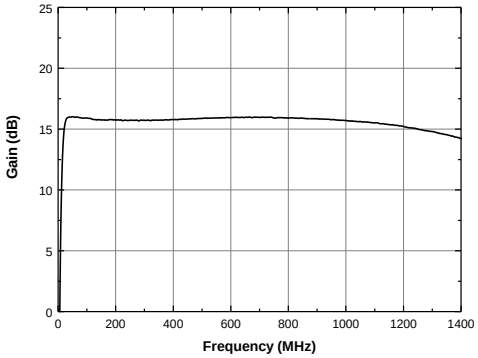
Schematic

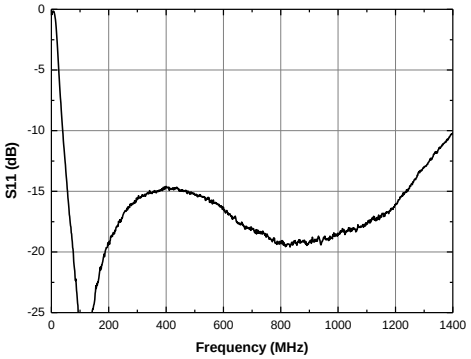


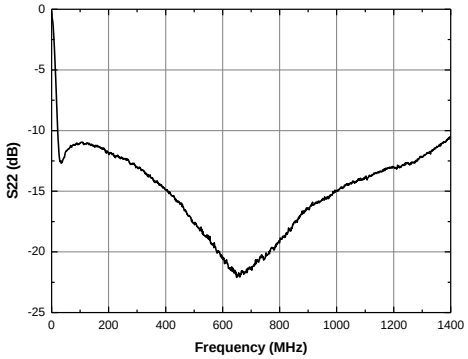
Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters







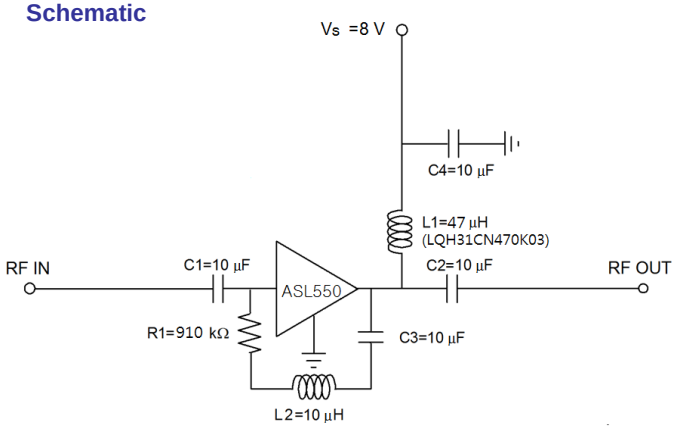
APPLICATION CIRCUIT

IF
2 ~ 32 MHz
+8 V, 50 Ω

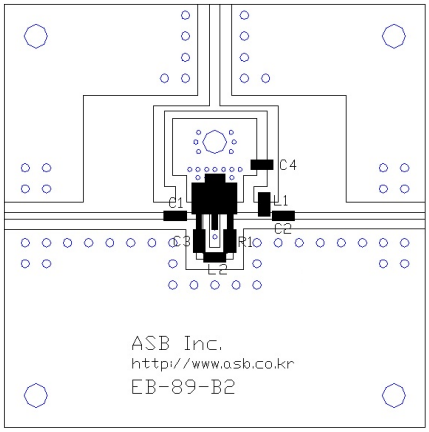
Frequency (MHz)	2	32
Noise Figure (dB)	1.7	2.0
Magnitude S21 (dB)	17.5	16.5
Magnitude S11 (dB)	-6	-10
Magnitude S22 (dB)	-7	-10
Output P1dB (dBm)	23	23
Output IP3[1)] (dBm)	34	40
Output IP2[1),2)] (dBm)	54	54
Device Voltage (V)	+8	
Current (mA)	120	

1) OIP3 and OIP2 are measured with two tones at an output power of +10 dBm/tone separated by 1 MHz.
2) OIP2 is measured at F1+F2 Frequency.

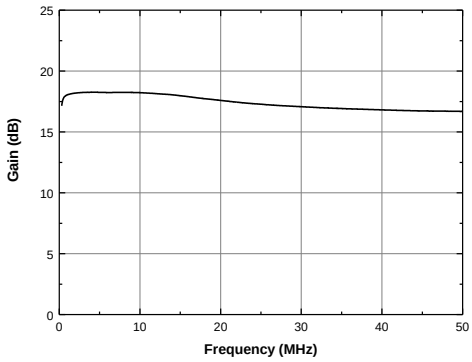
Schematic

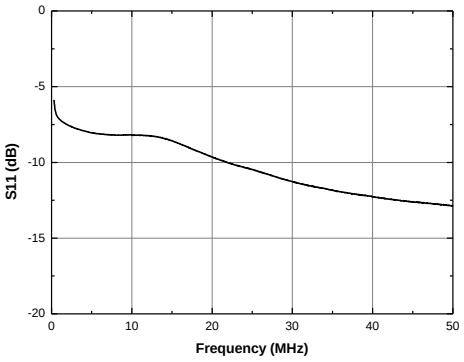


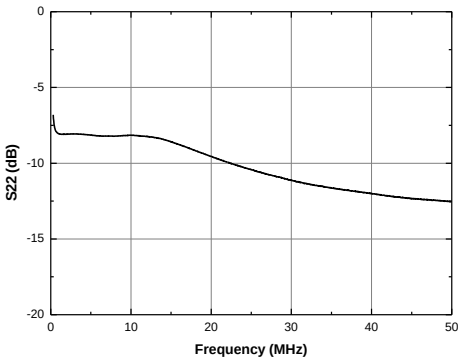
Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV

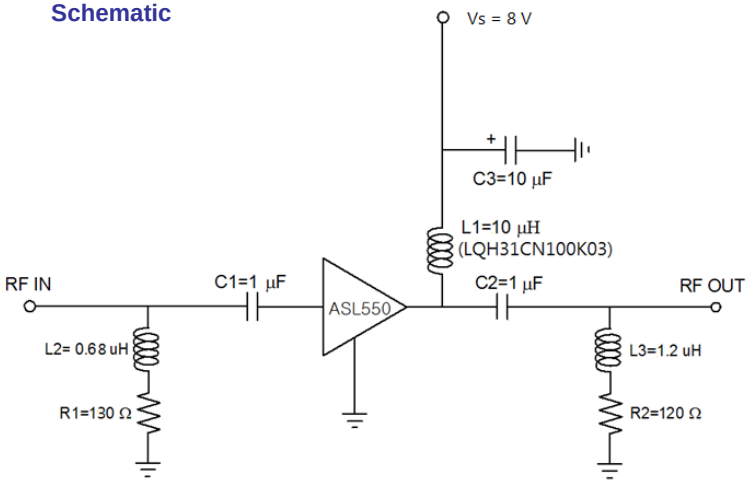
5 ~ 200 MHz

+8 V

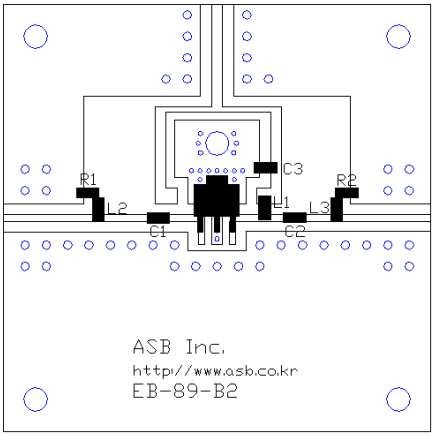
Frequency (MHz)	5	50	200
Noise Figure (dB)	1.7	1.9	2.1
Magnitude S21 (dB)	16.8	16.5	16.5
Magnitude S11 (dB)	-12	-16	-18
Magnitude S22 (dB)	-14	-14	-16
Output P1dB (dBm)	24	25	25
Output IP3[1] (dBm)	39	42	44
Output IP2[1),2)] (dBm)	52	56	56
Device Voltage (V)	+8		
Current (mA)	120		

1) OIP3 and OIP2 are measured with two tones at an output power of +13 dBm/tone separated by 6 MHz.
2) OIP2 is measured at F1+F2 Frequency.

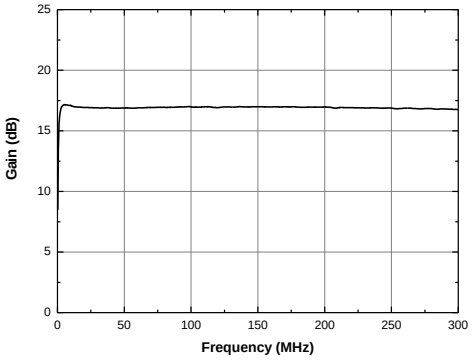
Schematic

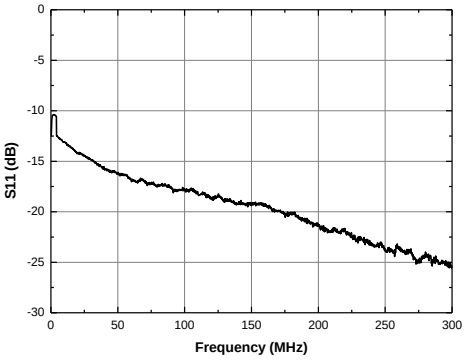


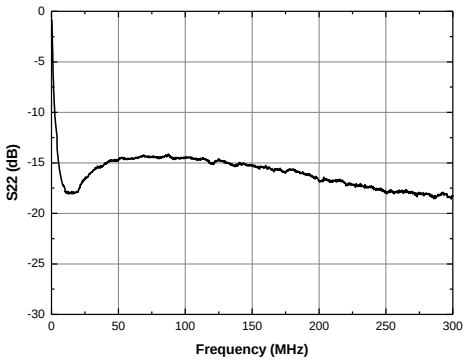
Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV

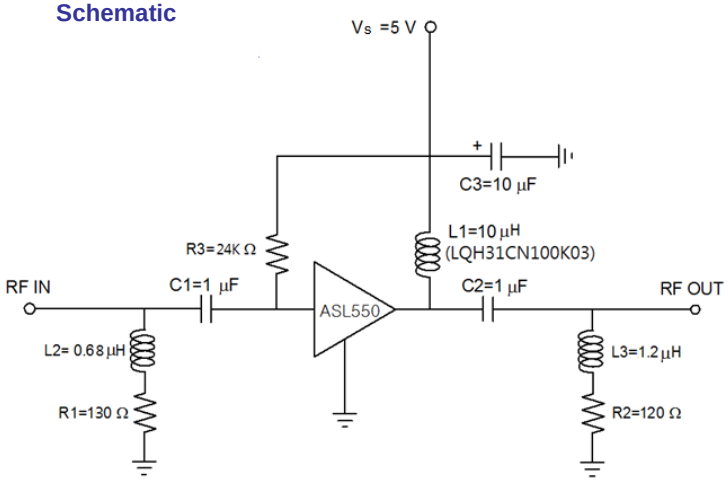
5 ~ 200 MHz

+5 V

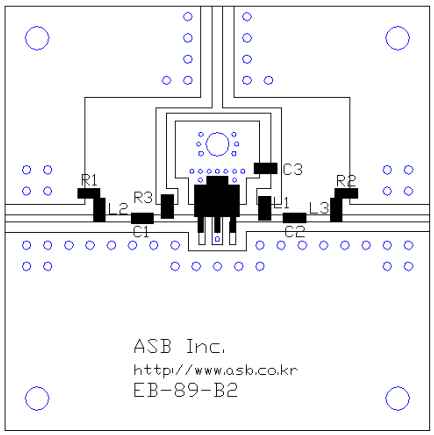
Frequency (MHz)	5	50	200
Noise Figure (dB)	1.7	1.9	2.1
Magnitude S21 (dB)	16.8	16.5	16.5
Magnitude S11 (dB)	-12	-16	-18
Magnitude S22 (dB)	-14	-14	-16
Output P1dB (dBm)	24	25	25
Output IP3[1)] (dBm)	39	41	40
Output IP2[1),2)] (dBm)	50	54	55
Device Voltage (V)	+5		
Current (mA)	100		

1) OIP3 and OIP2 are measured with two tones at an output power of +13 dBm/tone separated by 6 MHz.
2) OIP2 is measured at F1+F2 Frequency.

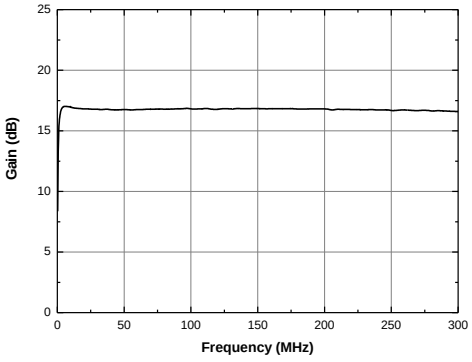
Schematic

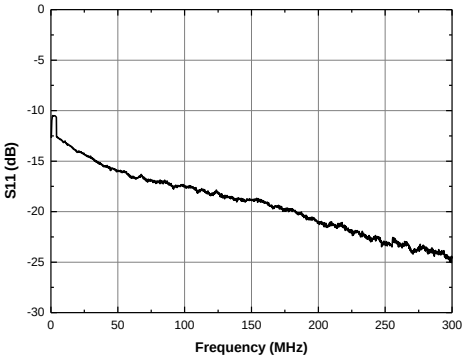


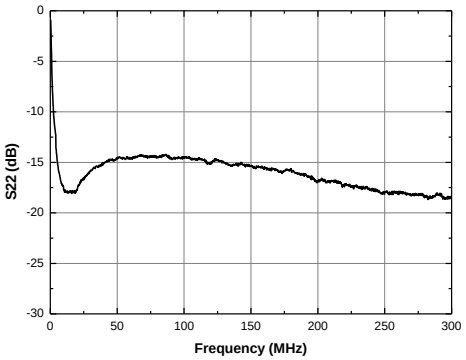
Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters







APPLICATION CIRCUIT

SMATV

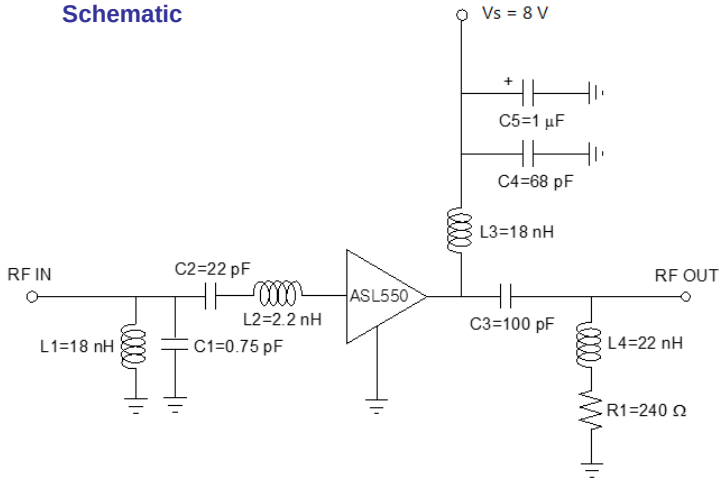
950 ~ 2600 MHz

+8 V

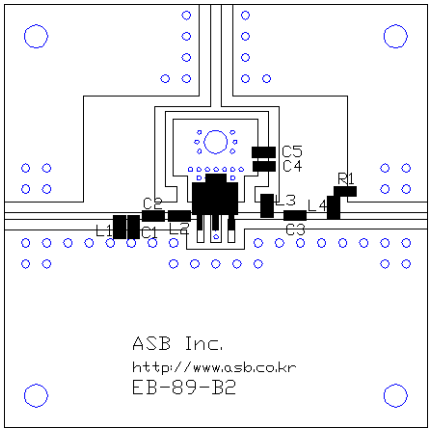
Frequency (MHz)	950	1800	2600
Noise Figure (dB)	2.2	2.5	3.6
Magnitude S21 (dB)	15.5	16.5	14.9
Magnitude S11 (dB)	-8	-12	-8
Magnitude S22 (dB)	-16	-8	-9
Output P1dB (dBm)	23	24	19
Output IP3[1)] (dBm)	39.0	40.5	38.0
Device Voltage (V)	+8		
Current (mA)	120		

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

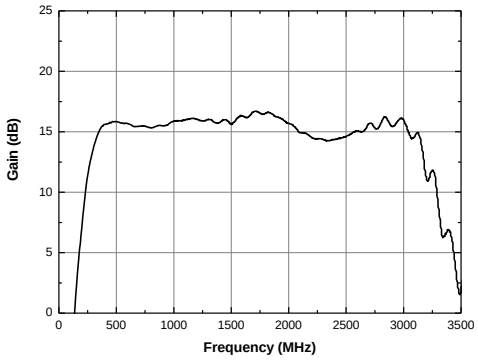
Schematic

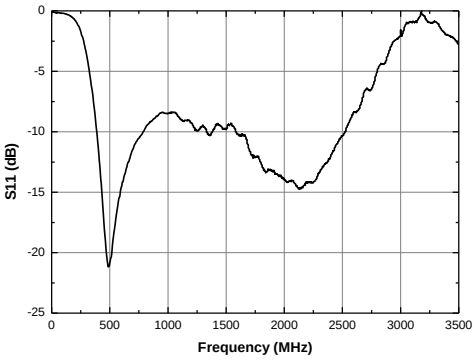


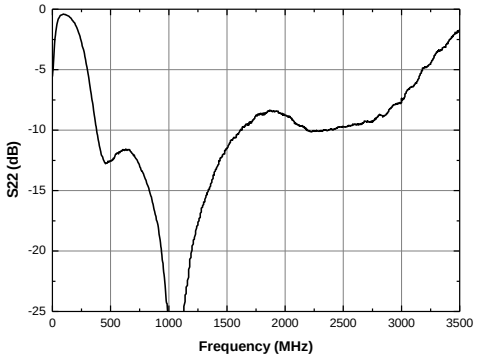
Board Layout (FR4, 40x40 mm², 0.8T)



S-parameters







APPLICATION CIRCUIT

ONU

90 ~ 2600 MHz

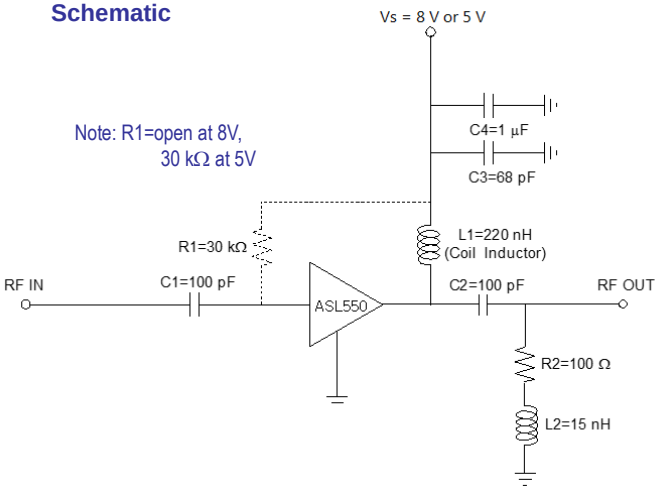
+8 V & +5 V

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	15.0	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)	24.0	24.0	22.5	19.5	20.5	19.0	19.0	16.0
Output IP3 (dBm)	42[1)]	39[1)]	41[1)]	37[1)]	40[2)]	38[2)]	37[2)]	35[2)]
Device Voltage (V)	+8				+5			
Current (mA)	120				95			

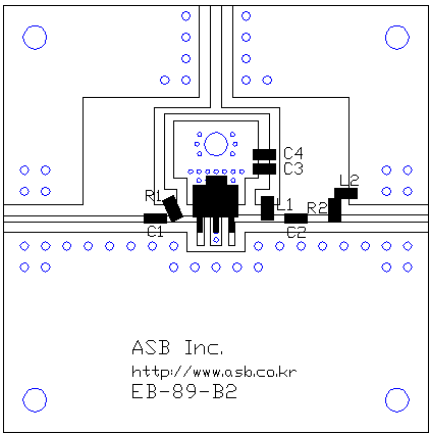
1) OIP3 is measured with two tones at an output power of +8 dBm/tone separated by 1 MHz.

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

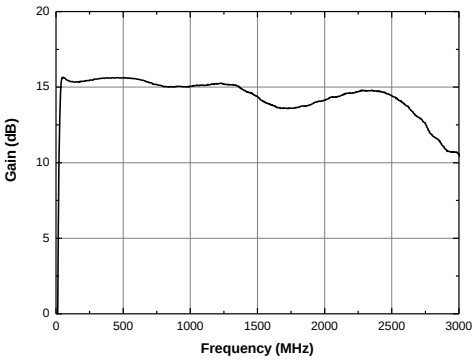
Schematic

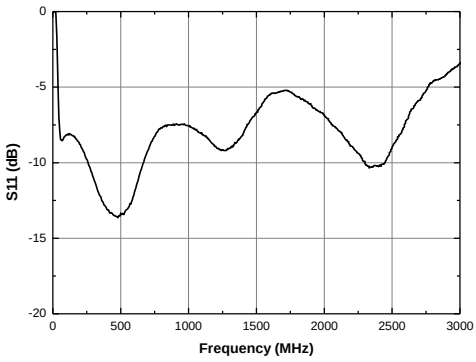


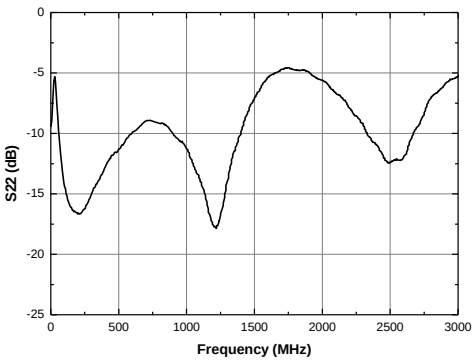
Board Layout (FR4, 40x40 mm², 0.8T)

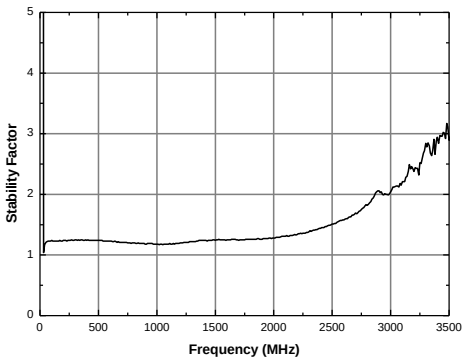


S-parameters & K-factor









APPLICATION CIRCUIT

CATV Push-Pull

2 : 1 transformer

50 ~ 1000 MHz

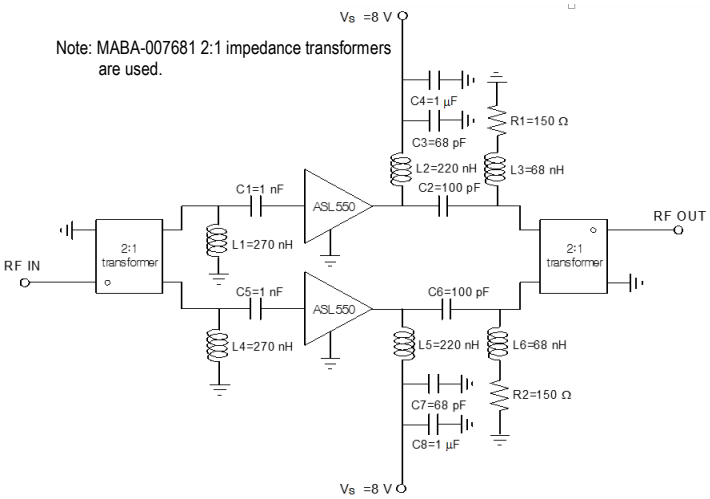
+8 V

Frequency (MHz)	50	500	860
Magnitude S21 (dB)	15.0	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[1)] (dBm)	44	43	44
Output IP2[1),2)] (dBm)	81	69	70
Noise Figure (dB)	2.5	2.7	3.1
Device Voltage (V)	+8		
Current (mA)	240		

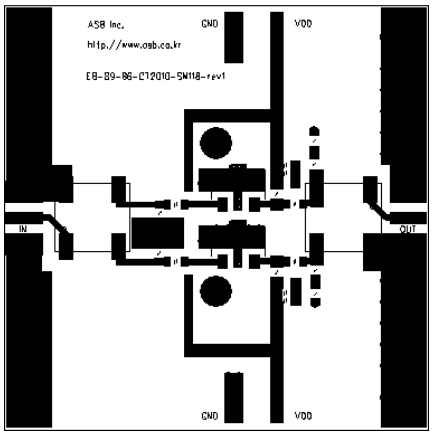
1) OIP3 and OIP2 are measured with two tones at an output power of +9 dBm/tone separated by 6 MHz.

2) OIP2 is measured at F1+F2 Frequency.

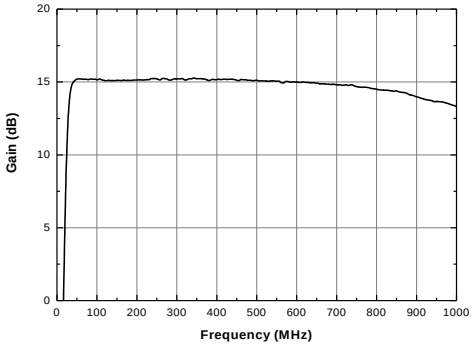
Schematic

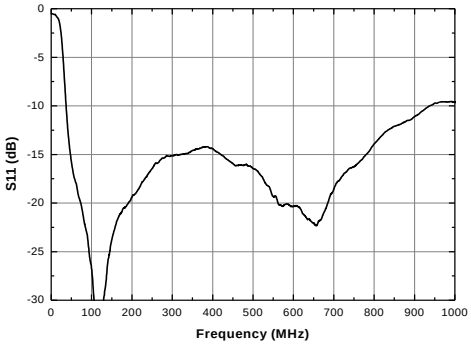


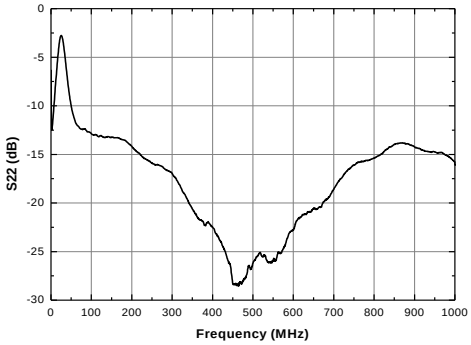
Board Layout (FR4, 40x40 mm^2, 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV Push-Pull

1 : 1 transformer

50 ~ 1000 MHz

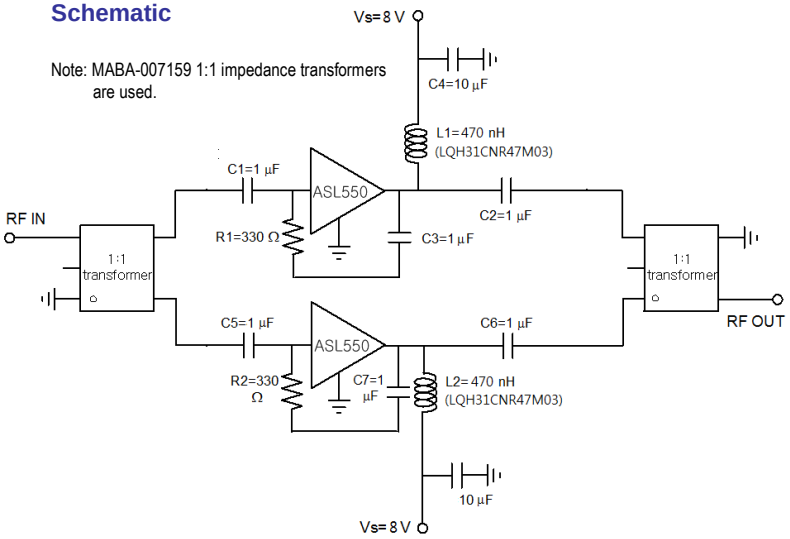
+8 V

Frequency (MHz)	50	500	860
Magnitude S21 (dB)	11.2	11.0	10.8
Magnitude S11 (dB)	-15	-15	-13
Magnitude S22 (dB)	-15	-15	-13
Output P1dB (dBm)	26.0	27.5	27.0
Output IP3[1)] (dBm)	40.0	46.0	43.0
Output IP2[1),2)] (dBm)	61	59	59
Noise Figure (dB)	3.0	2.9	2.9
Device Voltage (V)	+8		
Current (mA)	240		

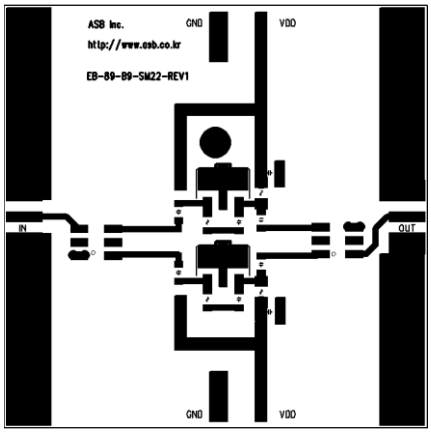
1) OIP3 and OIP2 are measured with two tones at an output power of +10 dBm/tone separated by 6 MHz.

2) OIP2 is measured at F1+F2 Frequency.

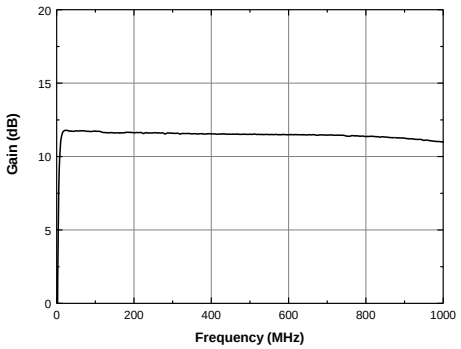
Schematic

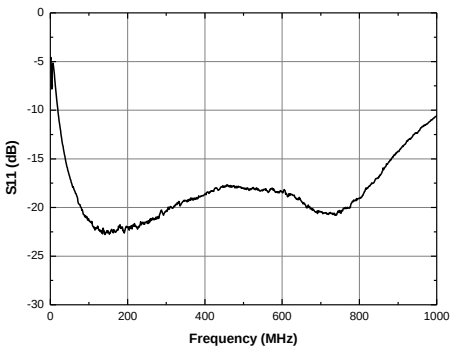


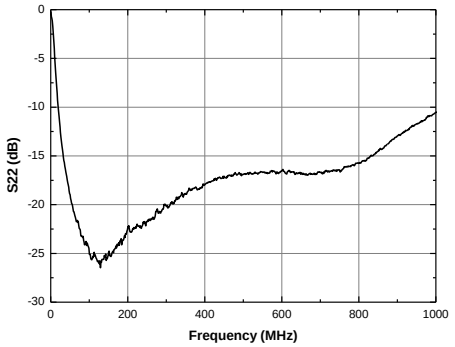
Board Layout (FR4, 40x40 mm^2, 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV Push-Pull

1 : 1 transformer

50 ~ 1200 MHz

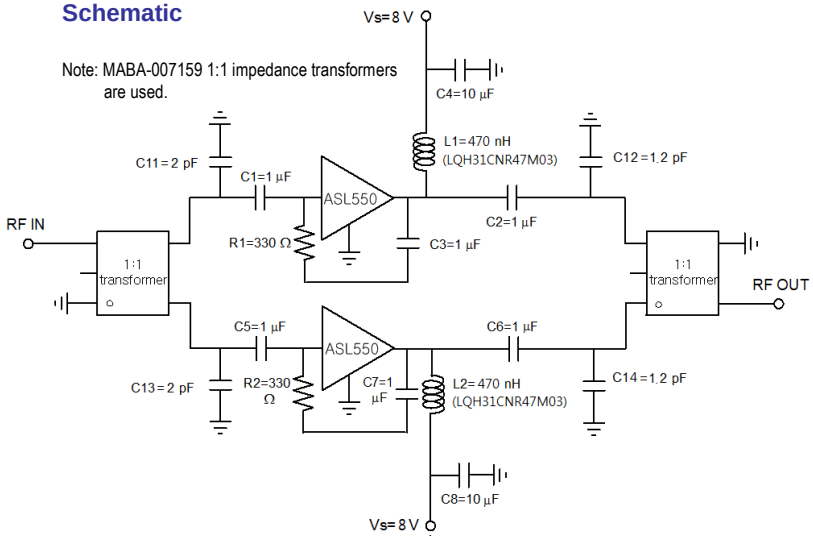
+8 V

Frequency (MHz)	50	500	1200
Magnitude S21 (dB)	11.2	10.8	10.8
Magnitude S11 (dB)	-14	-12	-12
Magnitude S22 (dB)	-15	-12	-14
Output P1dB (dBm)	26.0	27.5	27.0
Output IP3[1)] (dBm)	40.5	44.0	45.0
Output IP2[1),2)] (dBm)	66	68	62
Noise Figure (dB)	3.0	3.0	3.1
Device Voltage (V)	+8		
Current (mA)	240		

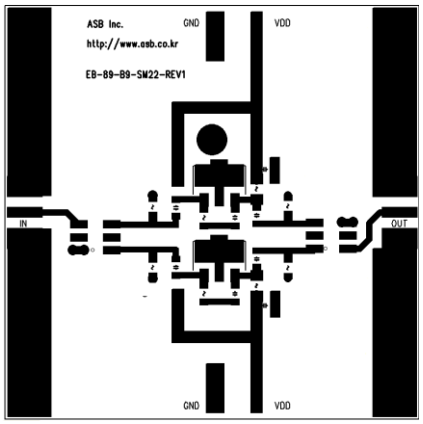
1) OIP3 and OIP2 are measured with two tones at an output power of +12 dBm/tone separated by 6 MHz.

2) OIP2 is measured at F1+F2 Frequency.

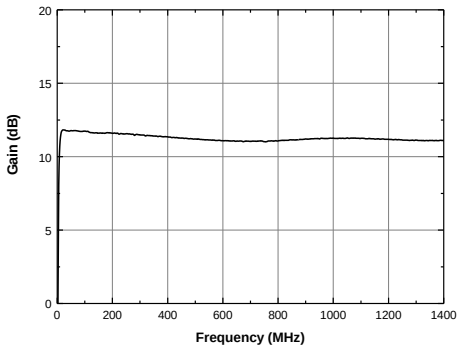
Schematic

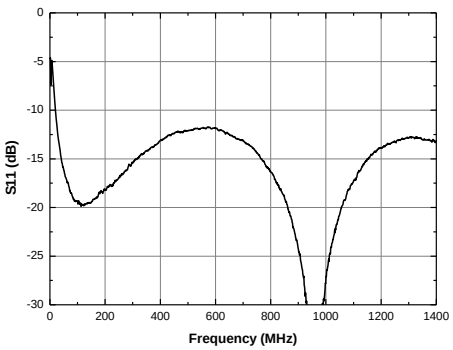


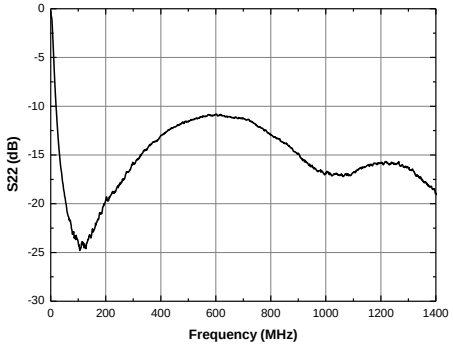
Board Layout (FR4, 40x40 mm^2, 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV Push-Pull

2 : 1 transformer

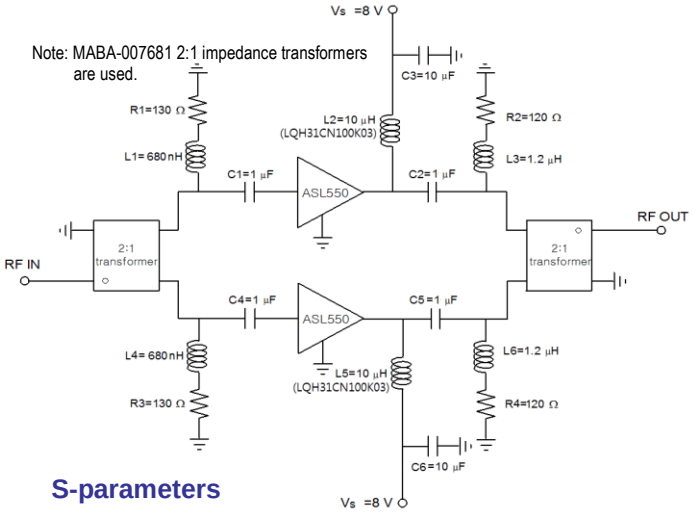
5 ~ 200 MHz

+8 V

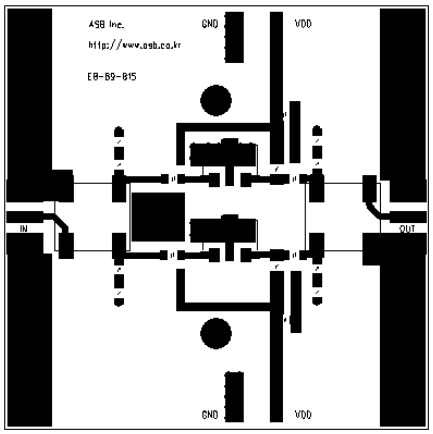
Frequency (MHz)	5	50	200
Magnitude S21 (dB)	15.5	15.8	15.5
Magnitude S11 (dB)	-16	-15	-18
Magnitude S22 (dB)	-16	-15	-13
Output P1dB (dBm)	26.5	27.5	27.5
Output IP3[1)] (dBm)	41.5	42.0	43.0
Output IP2[1),2)] (dBm)	74	78	75
Noise Figure (dB)	2.9	2.2	2.4
Device Voltage (V)	+8		
Current (mA)	240		

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.

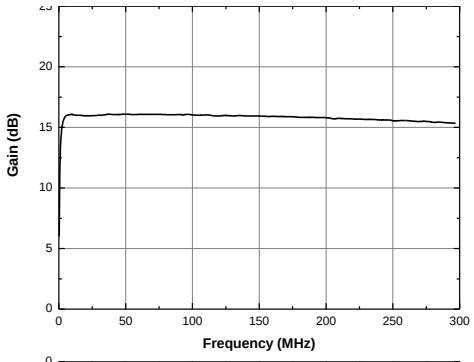
Schematic

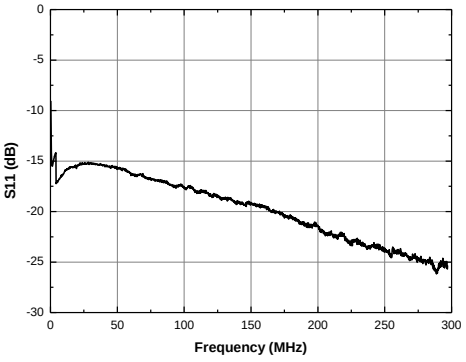


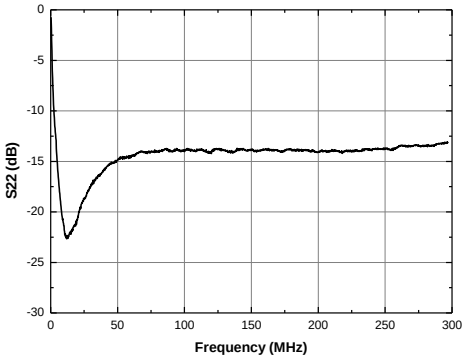
Board Layout (FR4, 40x40 mm^2, 0.8T)



S-parameters







APPLICATION CIRCUIT

CATV Push-Pull

1 : 1 transformer

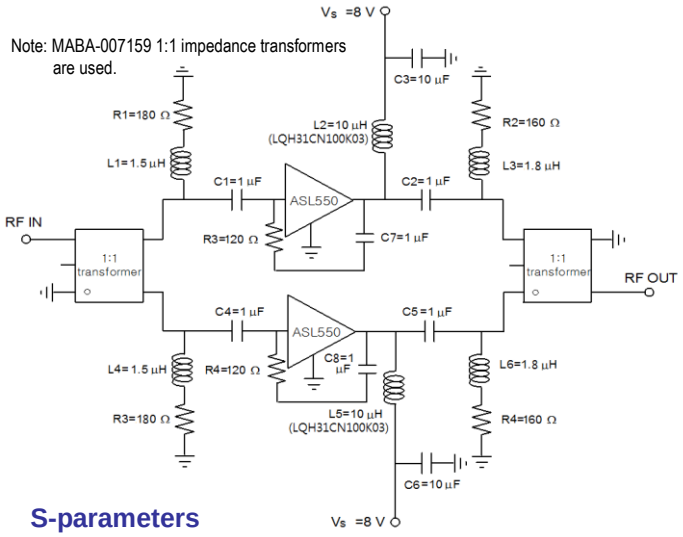
5 ~ 200 MHz

+8 V

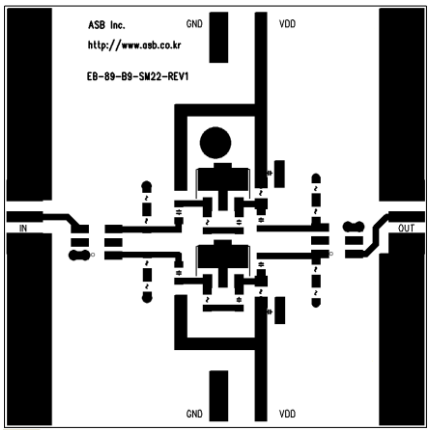
Frequency (MHz)	5	50	200
Magnitude S21 (dB)	11.5	11.5	11.3
Magnitude S11 (dB)	-17	-20	-20
Magnitude S22 (dB)	-16	-20	-20
Output P1dB (dBm)	25.0	25.5	26.5
Output IP3[1)] (dBm)	39.0	41.0	44.0
Output IP2[1),2)] (dBm)	61	65	70
Noise Figure (dB)	3.0	2.8	2.8
Device Voltage (V)	+8		
Current (mA)	240		

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.

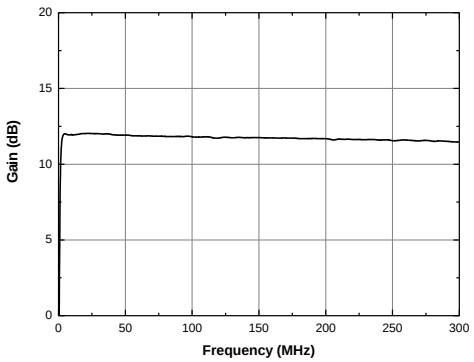
Schematic

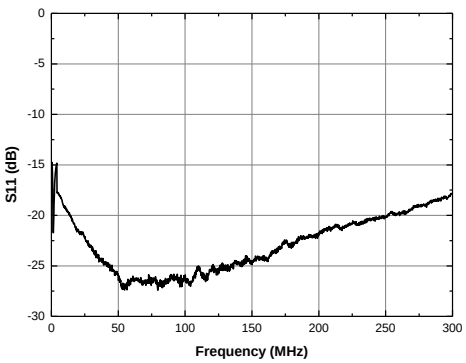


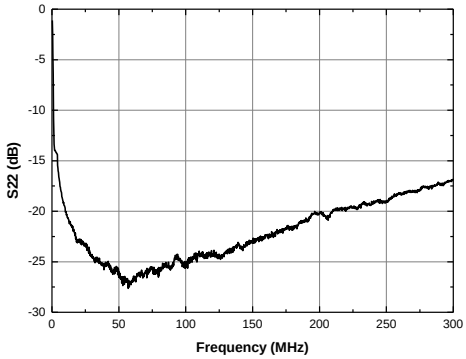
Board Layout (FR4, 40x40 mm², 0.8T)



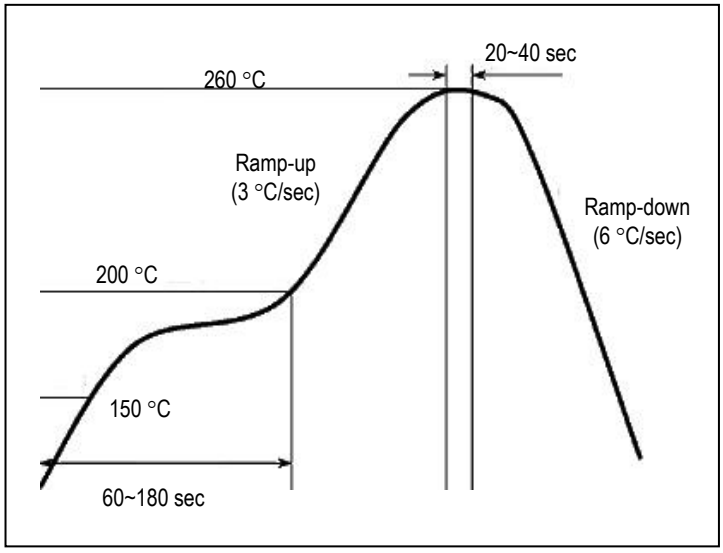
S-parameters







Recommended Soldering Reflow Profile



Copyright ©2007-2020 ASB Inc. All rights reserved. Datasheet subject to change without notice. ASB assumes no responsibility for any errors which may appear in this datasheet. No part of the datasheet may be copied or reproduced in any form or by any means without the prior written consent of ASB.