0.05-1.0 GHz Optical Node RF Amplifier

Product Features

- 40-1000MHz operating frequency range
- High linearity, 60dBc CTB/CSO 135 Channels @ +20dBmV/ch
- 41dB Gain at 55MHz；41.5dB Gain at 1000MHz
- High dynamic gain range, 24dB Gain Control Range, Support 12dBm optical range
- Single supply, Single +5V Supply
- Low power consumption, 180mA for one RF output at 5V supply voltage
- Lead-free/RoHS compliant QFN4X4—24L package

Product Performance (T_a=25℃)

Symbol	Parameter[1]	Units	Frequency	Min.	Typ.	Max.
G	Trans-Impedance (Max. Gain State)	dB	0.05 GHz 0.87 GHz 1GHz	-	41.0 41.0 41.5	-
G Range	Gain Control Range	dB		-	24	-
P-1dB		dBm	0.45GHz	-	20.5	-
OIP3	Output IP3	dBm	0.45GHz	-	34	-
RL	Output Return Loss	dB	0.05-1 GHz	-	-15	-
IDD	Attenuator Current	mA	VDD=+5V	160	180	200

1. All measurements in a 75 Ohm system, unless otherwise specified.
2. Specified at maximum gain.
3. When the control voltage is changed, the attenuation is changed, Attenuation gain deviation is ±1.5dB.

Truth Lable:

Control Voltage					Attenuation
C1	C2	C3	C4	C5	RF1-RF2
Low	Low	Low	Low	Low	0
High	Low	Low	Low	Low	1dB
Low	High	Low	Low	Low	2dB
High	High	Low	Low	Low	3dB
Low	Low	High	Low	Low	4dB
High	Low	High	Low	Low	5dB
Low	High	High	Low	Low	6dB
High	High	High	Low	Low	7dB
Low	Low	Low	High	Low	8dB
High	Low	Low	High	Low	9dB
Low	High	Low	High	Low	10dB
High	High	Low	High	Low	11dB
Low	Low	High	High	Low	12dB
High	Low	High	High	Low	13dB
Low	High	High	High	Low	14dB
High	High	High	High	Low	15dB
High	High	High	Low	High	16dB
Low	Low	Low	High	High	17dB
High	Low	Low	High	High	18dB
Low	High	Low	High	High	19dB
High	High	Low	High	High	20dB
Low	Low	High	High	High	21dB
High	Low	High	High	High	22dB
Low	High	High	High	High	23dB
High	High	High	High	High	24dB

Note: V_{low}=0~0.5V @100μA Max

V_{high}=+3 to +5V @100μA Max

Vdd=5V±0.2V@5mA Max（管脚 7）

Absolute Maximum Rating

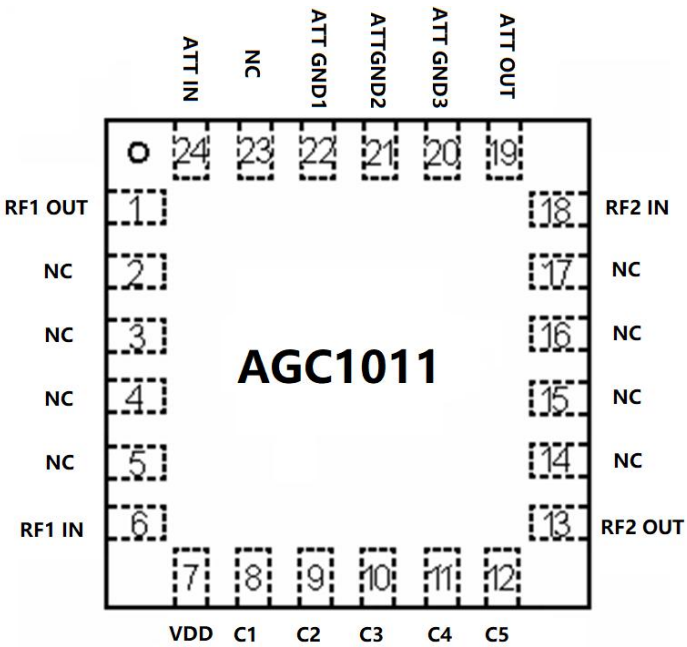
Parameter	Absolute Limit
Supply Voltage(VDD)	+5.5V
Operating Temperature	-40℃ to +85℃
Storage Temperature	-65℃ to +150℃
Maximum Input Power	-10 dBm
MSL	Level 2
Operation of this device above any one of these parameters may cause permanent damage.	

ESD Class 1A

ELECTROSTATIC
SENSITIVE DEVICE
OBSERVE HANDLING
PRECAUTIONS

Product Outline

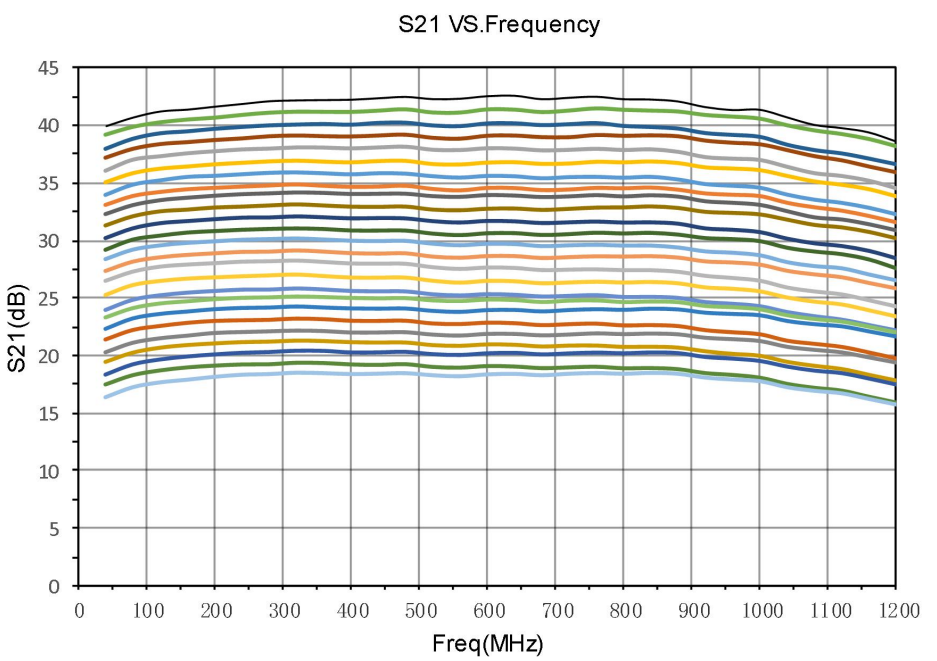
RoHS

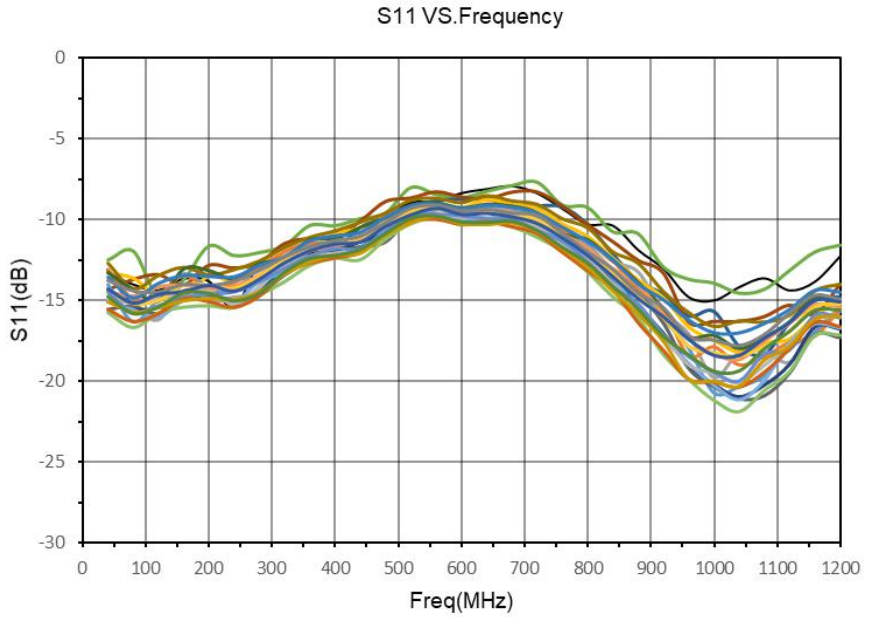


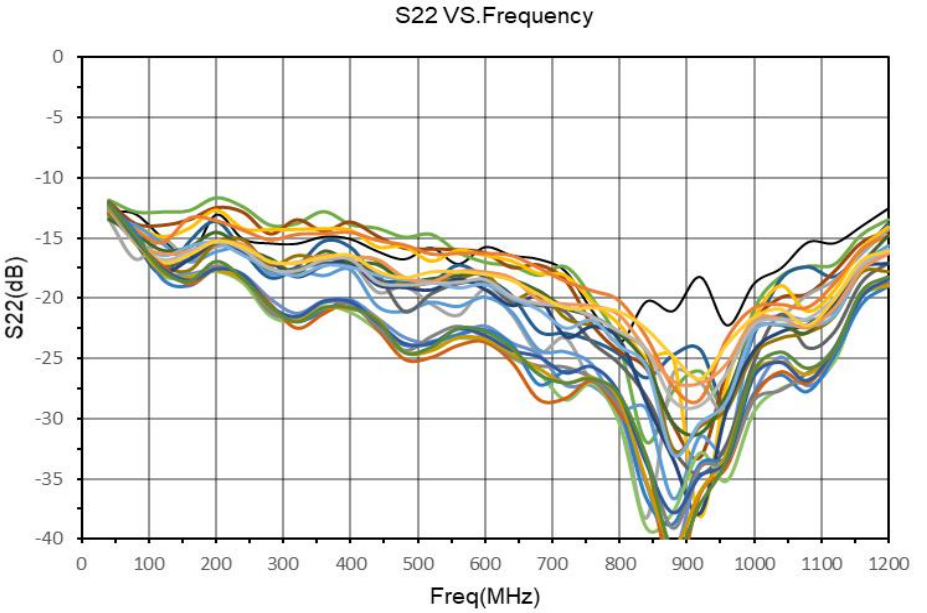
Pin	Function	Description	Pin	Function	Description
1	RF1 OUT	AMP1 RF IN PORT	13	RF2 OUT	AMP2 RF OUT PORT
2	N/C	Not connected	14	N/C	Not connected
3	N/C	Not connected	15	N/C	Not connected
4	N/C	Not connected	16	N/C	Not connected
5	N/C	Not connected	17	N/C	Not connected
6	RF1 IN	AMP1 RF IN PORT	18	RF2 IN	AMP2 RF IN PORT
7	VDD	ATT Supply voltage	19	ATT OUT	ATT Inter RF OUT
8	C1	ATT Control 1	20	ATT GND3	ATT RF GND3
9	C2	ATT Control 2	21	ATT GND2	ATT RF GND2
10	C3	ATT Control 3	22	ATT GND1	ATT RF GND1
11	C4	ATT Control 4	23	N/C	Not connected
12	C5	ATT Control 5	24	ATT IN	ATT Inter RF IN

Typical Peformance

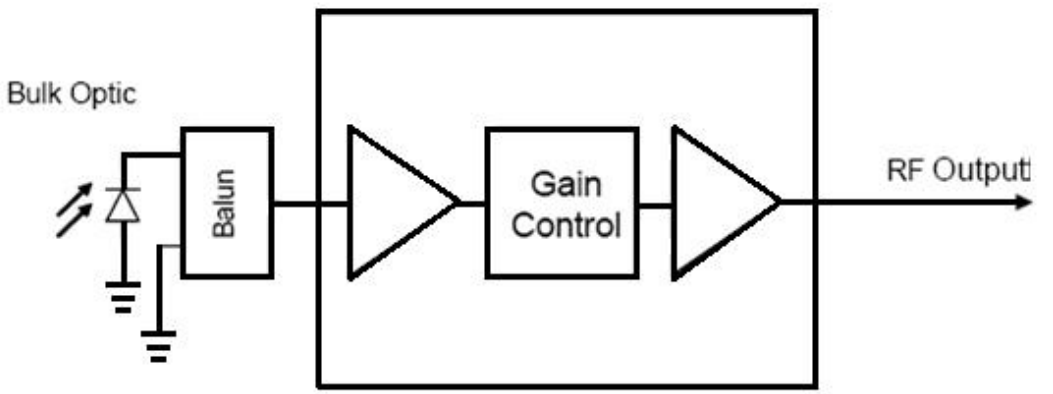
(+25℃)



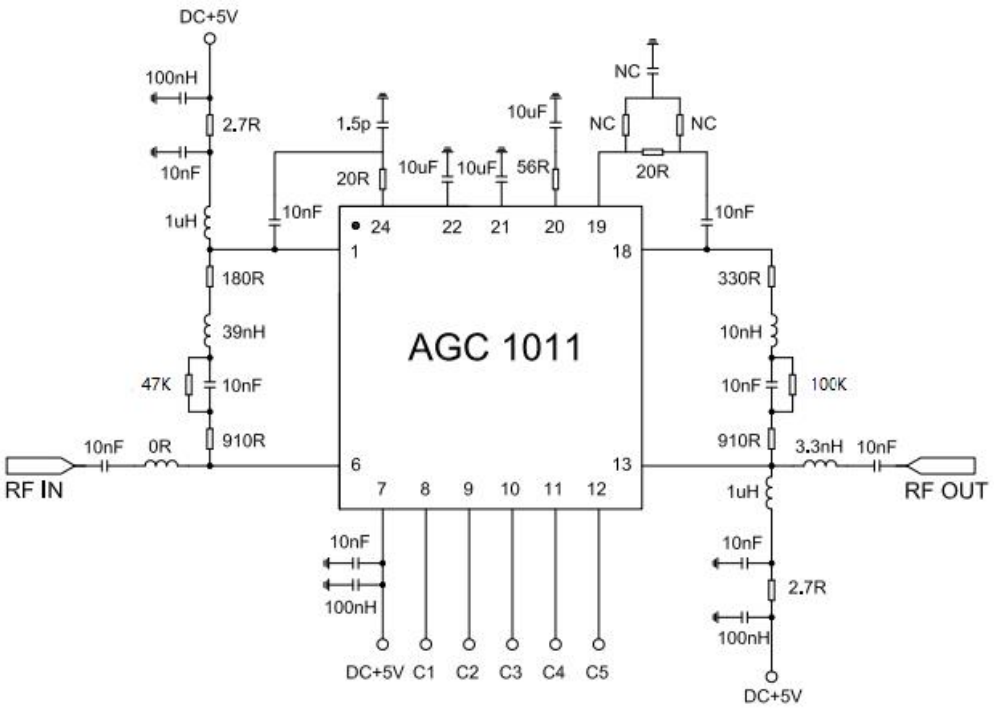

S11 VS.Frequency
S11(dB)
0
-5
-10
-15
-20
-25
-30
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
Freq(MHz)


S22 VS.Frequency
S22(dB)
0
-5
-10
-15
-20
-25
-30
-35
-40
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
Freq(MHz)

Application Schematic



Application Circuit



QFN4X4-24L Package Outline Dimension