

Descriptions

The power amplifier (SG102) is designed for base stations and repeater systems.

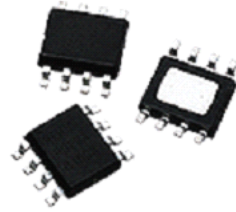
GaAs MMIC is used and attached on a copper carrier of 8 pin air cavity package with dual supply voltage. SG102 is RoHS compliant and manufactured with green molding compounds that contain no antimony trioxide nor halogenated fire retardants.

Application

- Repeater
- RF Sub-Systems
- Base Station
- Converter
- FTTH(G-PON,GE-PON)
- CATV

SG102  RoHS Compliant & Green Package

Linear Amplifier



Product Features

- Higher Linearity
- Low Distortion
- Low Noise Figure: 3.0dB
- 15dB Gain
- Single +8 V Supply
- Wide Bandwidth: 50 MHz to 1 GHz
- SOIC-8 Package Options
- RoHS Compliant Package Options

TYPICAL PARAMETERS (T_A=+25°C, V_{DD}=+8V/DC, 75 Ω system)

Parameter	Units	Typical		
Frequency	MHz	40	650	1000
Noise Figure	dB	-	2.5	-
Gain	dB	16.5	16	15
S11	dB	-24.8	-14.8	-17
S22	dB	-23	-21	-15.5
Output P1dB	dBm	27	27	27
Output IP3 ^①	dBm	44	46	46
Output IP2 ^②	dBm	58	62	60
CSO ^③	dBc	-	60	-
CTB ^③	dBc	-	69	-
Supply Current	mA	-	240	-
Supply Voltage	V	-	8	-

① Tone Spacing=6MHz, Pout per ton=9dBm

② OIP2 is measured at F1+F2 Frequency

③ 85Ch., Flat, +42dBm

TYPICAL PARAMETERS 2 (T_A=+25°C, V_{DD}=+10V/DC, 75 Ω system)

Parameter	Units	Typical		
Frequency	MHz	40	650	1000
Noise Figure	dB	-	2.5	-
Gain	dB	16.5	16	15
S11	dB	-24.8	-14.8	-17
S22	dB	-23	-21	-15.5
Output P1dB	dBm	27	27	27
Output IP3 ^①	dBm	44	46	46
Output IP2 ^②	dBm	58	62	60
CSO ^③	dBc	-	64	-
CTB ^③	dBc	-	71	-
Supply Current	mA	-	240	-
Supply Voltage	V	-	10	-

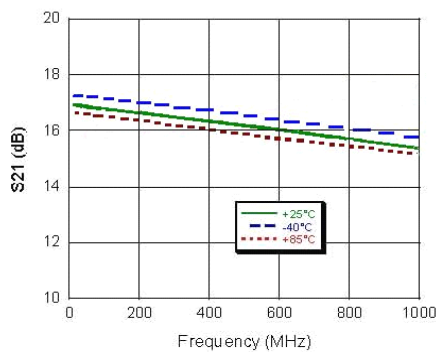
① Tone Spacing=6MHz, Pout per ton=9dBm

② OIP2 is measured at F1+F2 Frequency

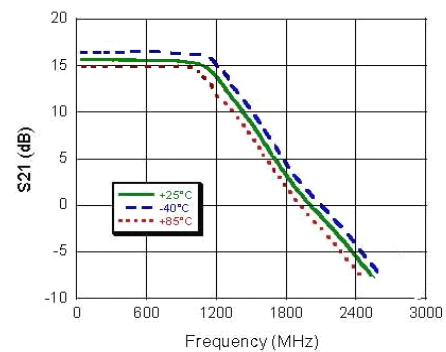
③ 85Ch., Flat, +42dBmV

Typical Performance Curves over temperature

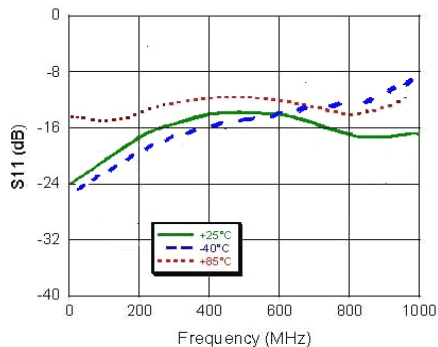
Gain to 1000 MHz



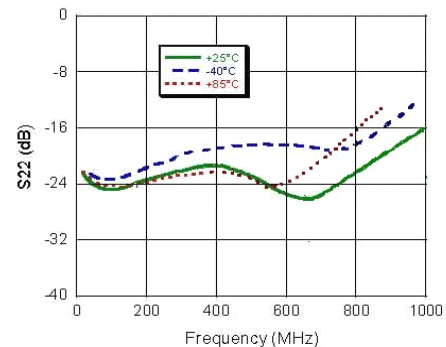
Gain to 3000 MHz



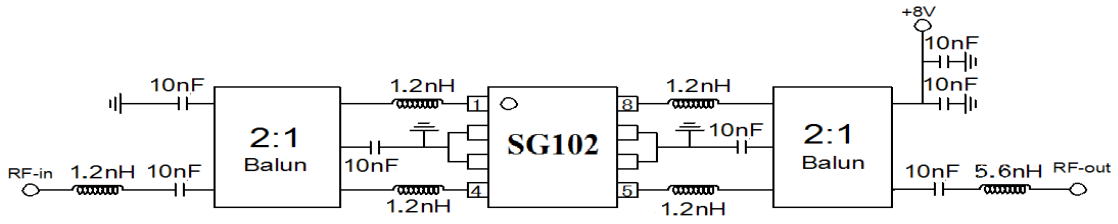
Input Return Loss



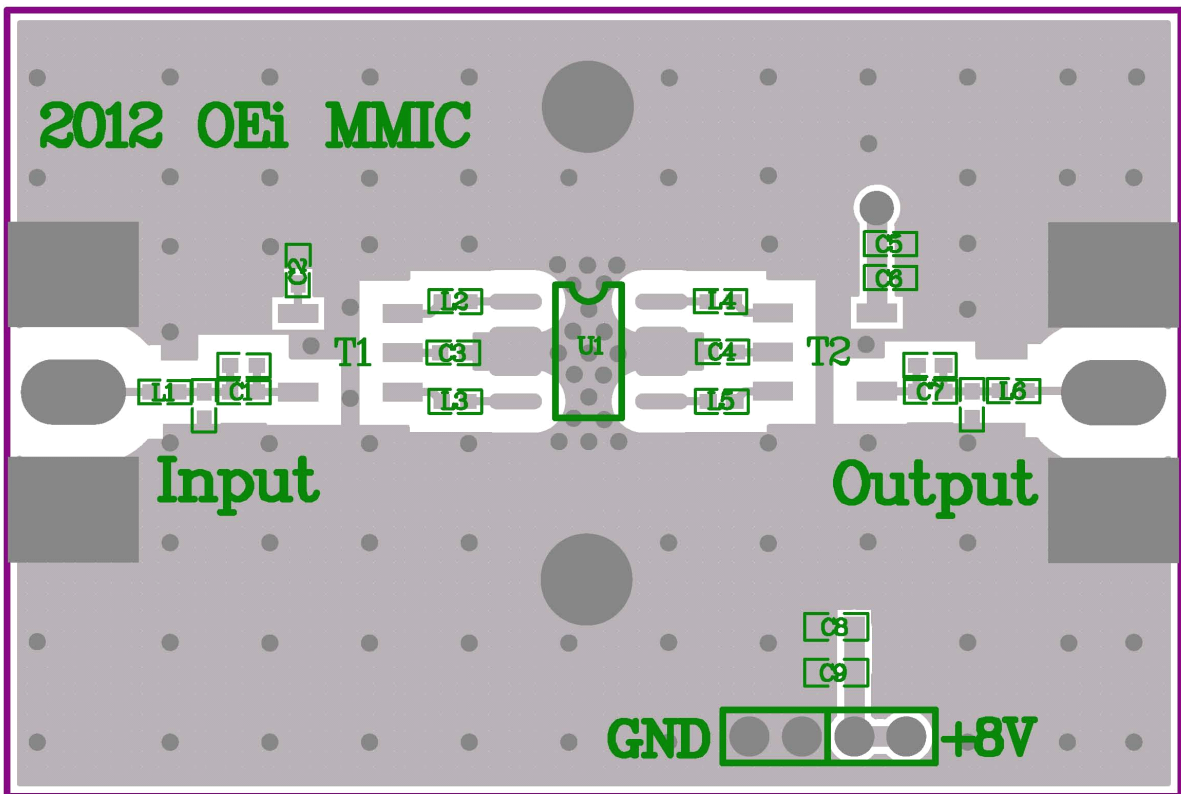
Output Return Loss



Application Circuit (40-1000MHz)



Board Layout(FR-4,44.5*30mm²,1.6T)



Ref	Des	Description	Value
L1、L2、L3		Ceramic Wire-Wound Ind.,0402,5%	1.2nH
L4、L5		Thick Film Res.,0402,5%	0R
L6		Ceramic Wire-Wound Ind.,0402,5%	5.6nH
C1、C2、C3、C4、C5、C7		Ceramic cap,0402,COG,50V,5%	10nF
C6		Ceramic cap,0402,COG,16V,5%	30pF
C8		Ceramic cap,0402,COG,50V,5%	100pF
C9		Ceramic cap,0402,COG,50V,5%	1UF
T1、T2		2:1 Transformer	
U1		SG102	

Package Dimensions (Type: SOIC-8)

