

Descriptions

The power amplifier (SG800) is designed for CATV output stage amplification.

GaAs MMIC is used and attached on a copper carrier of 8 pin air cavity package with dual supply voltage. SG800 is RoHS compliant and manufactured with green molding compounds that contain no antimony trioxide nor halogenated fire retardants.

Application

- Repeater
- FTTH(G-PON,GE-PON)
- CATV

SG800  RoHS Compliant & Green Package

Linear Amplifier



Product Features

- Higher Linearity
- Low Distortion
- Low Noise Figure: 2.5dB
- 20dB Gain
- Single +8 V Supply
- Wide Bandwidth: 50 MHz to 1 GHz
- SOIC-8 Package Options

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

Parameter	Units	Typical		
Frequency	MHz	50	650	1000
Noise Figure	dB	-	2.5	-
Gain	dB	17.5	19	20
S11	dB	-25	-18	-13
S22	dB	-23	-18	-15
Output P1dB	dBm	27	27	27
Output IP3 ^①	dBm	44	46	46
Output IP2 ^②	dBm	58	62	60
CSO ^③	dBc	-	65	-
CTB ^③	dBc	-	63	-
Supply Current	mA	-	320	-
Supply Voltage	V	-	8	-

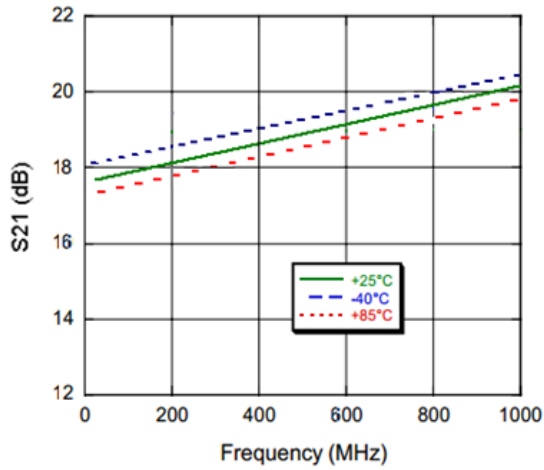
① Tone Spacing=6MHz, Pout per ton=9dBm

② OIP2 is measured at F1+F2 Frequency

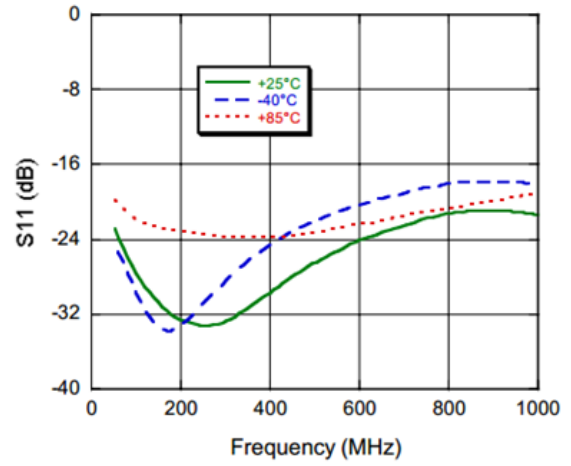
③ 85Ch., Flat, +44dBmV

Typical Performance Curves over temperature

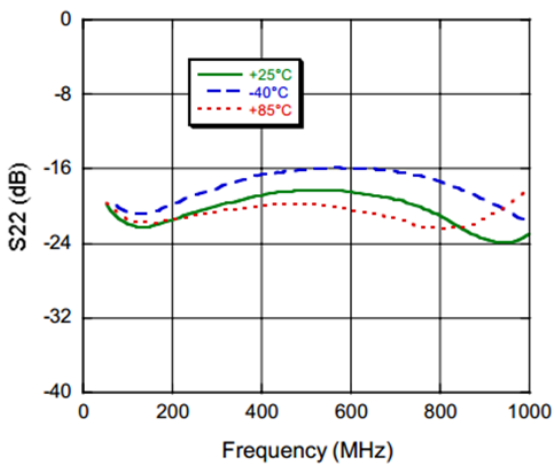
Gain to 1000 MHz



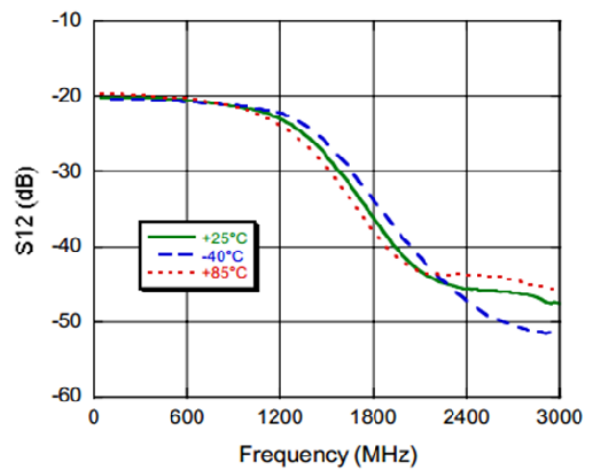
Input Return Loss



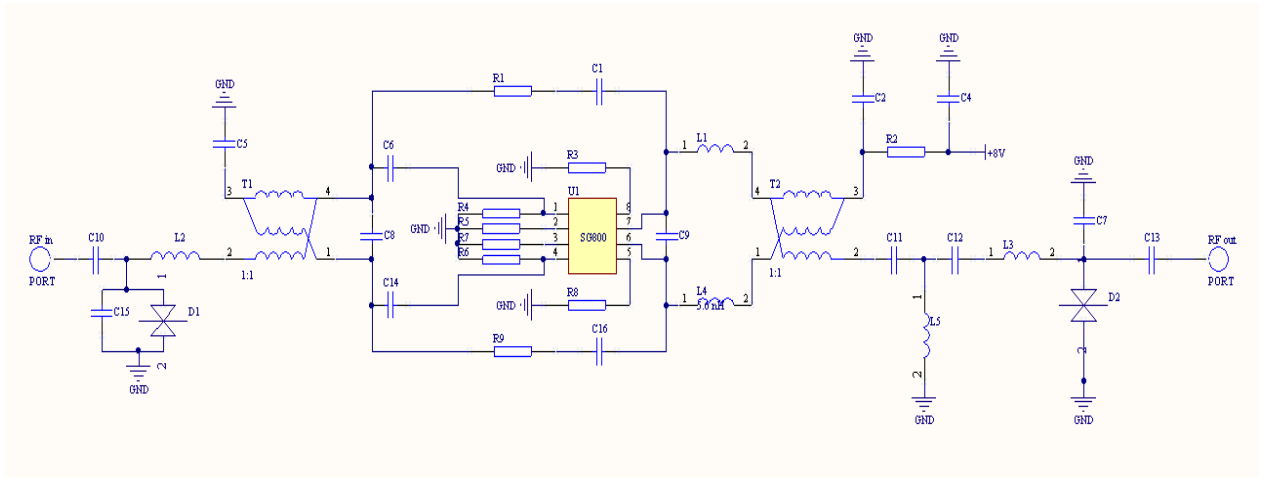
Output Return Loss



Reverse Isolation to 3000 MHz



Schematic Including Off-Chip Components



Off-Chip Component Values

Comment	Designator	Footprint	Quantity
10nF	C1, C2, C4, C5, C6, C10, C13, C14, C16	0402	9
0.25pF	C7, C15	0402	2
0.5pF	C8	0402	1
1.2pF	C9	0402	1
68pF	C11	0402	1
82pF	C12	0402	1
ESD18VU1UB-02LRH	D1	0402	1
ESD18VU1B-02LRH	D2	0402	1
5.6 nH	L1, L4	0402	2
4.7nH	L2	0402	1
8.2nH	L3	0402	1
270nH	L5	0402	1
430 ohm	R1, R4, R6, R9	0402	4
1.2R	R2	1206	1
4.02K	R3, R8	0402	2
0 ohm	R5, R7	0402	2
PORT	RF in, RF out		2
1:1	T1, T2	MABACT0069	2
SG800	U1	SOIC-8	1

Lead-Free SOIC-8 Plastic Package

Package Dimensions (Type: SOIC-8)

