

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, 75Ωsystem)

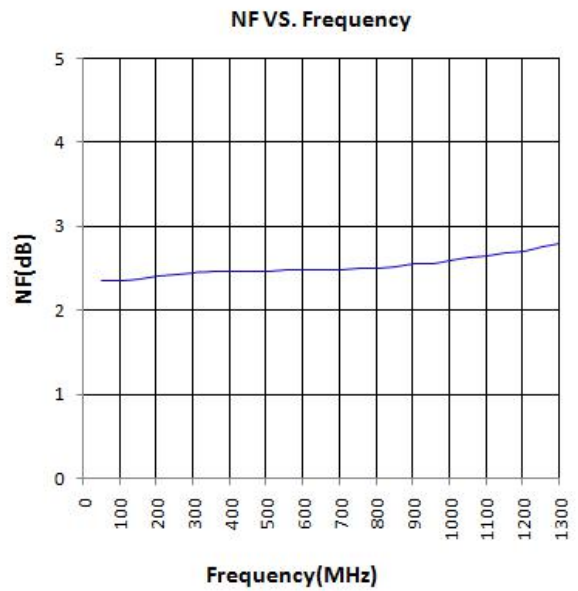
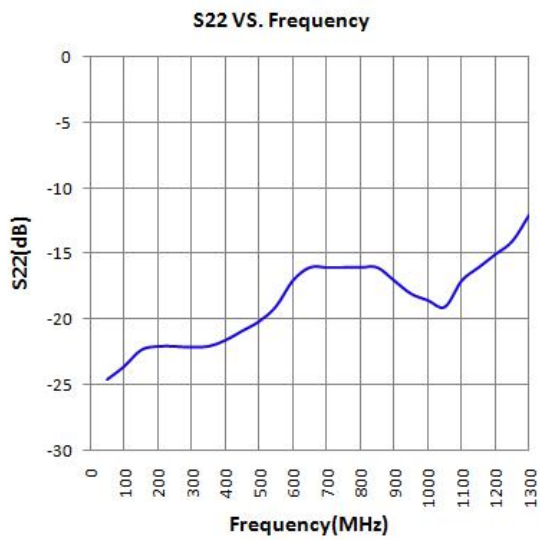
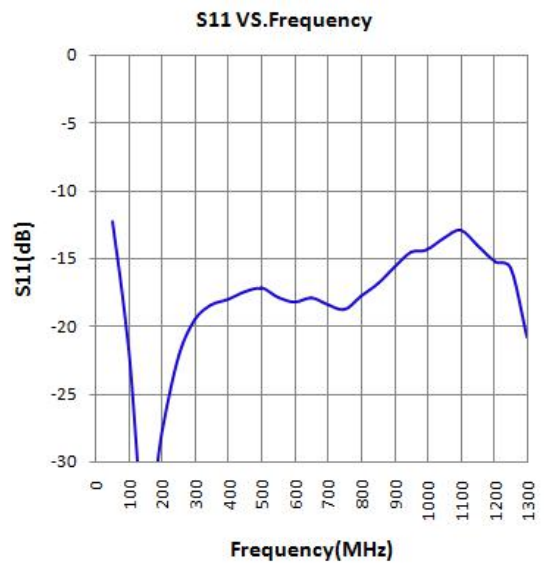
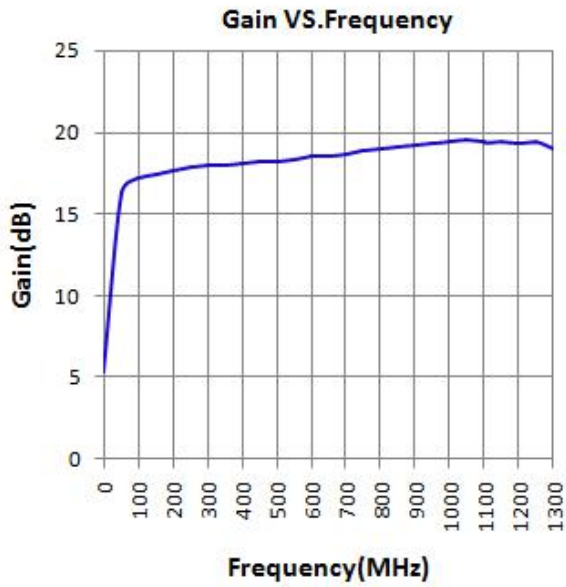
| Parameter | Units | Typical | | |
|-------------------------|-------|---------|------|------|
| Frequency | MHz | 50 | 550 | 1218 |
| Noise Figure | dB | - | 2.5 | - |
| Gain | dB | 16 | 17.5 | 19 |
| S11 | dB | -14 | -18 | -13 |
| S22 | dB | -23 | -18 | -15 |
| Output P1dB | dBm | 27 | 27 | 27 |
| 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

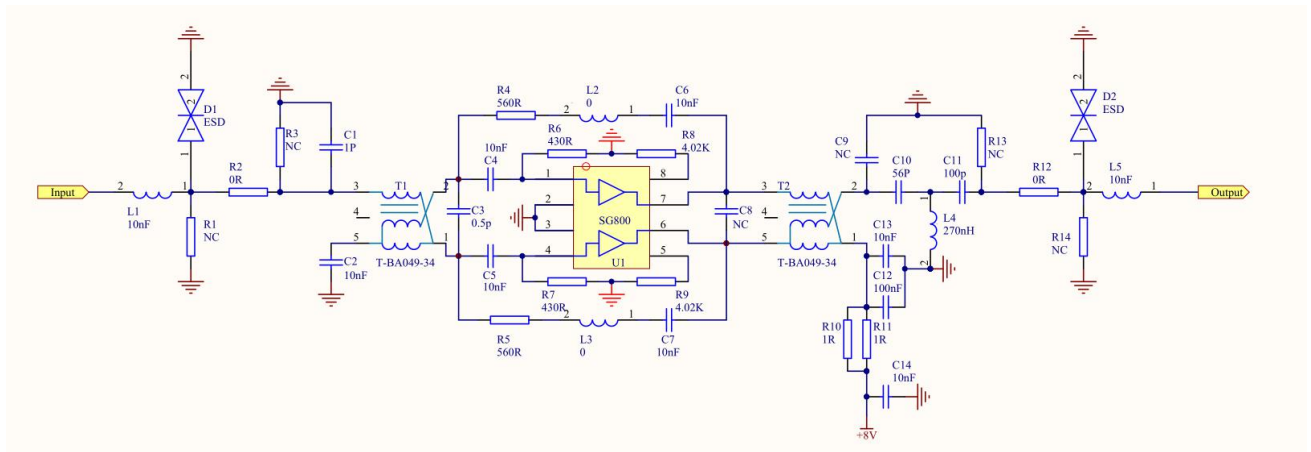
② OIP2 is measured at F1+F2 Frequency

③ 85Ch., Flat, +44dBmV

Typical Performance Curves over temperature



Schematic Including Off-Chip Components



Off-Chip Component Values

| Comment | Designator | Footprint | Quantity |
|---------------|-------------------------|-----------|----------|
| 10nF | C2 C4 C5 C6 C7 L1 L5 | 0402 | 7 |
| 10nF | C13 C14 | 0603 | 2 |
| 100nF | C12 | 0603 | 1 |
| 0.5pF | C3 | 0402 | 1 |
| 1pF | C1 | 0402 | 1 |
| 56pF | C10 | 0402 | 1 |
| 100pF | C11 | 0402 | 1 |
| Q-BUE2FD18VBS | D1 D2 | 0402 | 2 |
| 1.2R | R10 R11 | 0805 | 2 |
| 270nH | L4 | 0603 | 1 |
| 430 ohm | R6 R7 | 0402 | 2 |
| 560 ohm | R4 R5 | 0402 | 2 |
| 4.02K | R8 R9 | 0402 | 2 |
| 0 ohm | R2 R12 L2 L3 | 0402 | 4 |
| PORT | RF IN RF OUT | | 2 |
| 1:1 | T1 T2 | SW-0011 | 2 |
| SG800 | U1 | SOIC-8 | 1 |

Lead-Free SOIC-8 Plastic Package

Package Dimensions (Type: SOIC-8)

