

BSTMU09-0511

10-22 GHz Active Frequency Doubler

Data Sheet

I. Product Introduction

BSTMU09-0511 is an active frequency doubler chip with an output frequency of 10~22GHz. When the input power is 3dBm, the fundamental wave suppression is 15dBc.

II. Application Areas

- Radar
- Communication
- Instruments

III. Key Technical Indicators

- Input frequency: 5~11GHz
- Output frequency: 10~22GHz
- Input power: 3dBm
- Output power: 16dBm
- Fundamental wave suppression: 15dBc
- Working power supply: 100mA@5V
- Chip size: 1.5 mm×0.85 mm

IV. Absolute Maximum Ratings

Table 1

PARAMETER	LIMIT VALUE
Maximum input power	+20dBm
Maximum operating voltage	+5.5V
Operating temperature	-55 °C ~125 °C
Storage temperature	-65 °C ~150 °C

V. Electrical Performance Table ($T_A = +25\text{ }^{\circ}\text{C}$, $V_{dd} = +5\text{V}$, $P_{in} = 0\text{dBm}$)

Table 2

INDEX	MINIMUM	TYPICAL VALUES	MAXIMUM
Input frequency (GHz)	5~11		
Output frequency (GHz)	10~22		
Output power (dBm)	-	16	-
Input return loss (dB)	-	-20	-
Output return loss (dB)	-	-25	-
Fundamental harmonic suppression (dBc)	-	15	-
Third harmonic suppression (dBc)	-	20	-
Working current (mA)	-	100	-

VI. Typical Test Curve

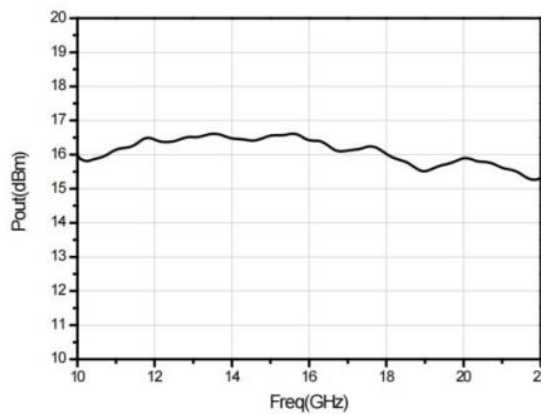


Figure 1. Output power

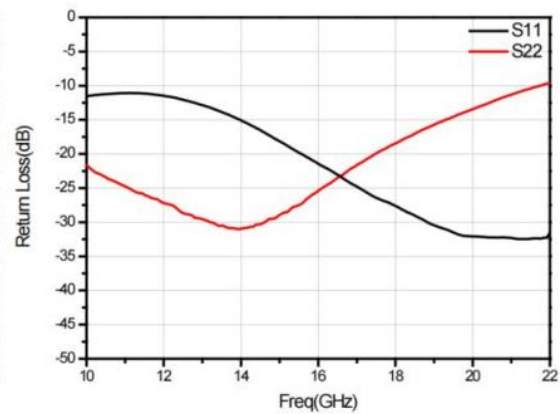


Figure 2. Return loss

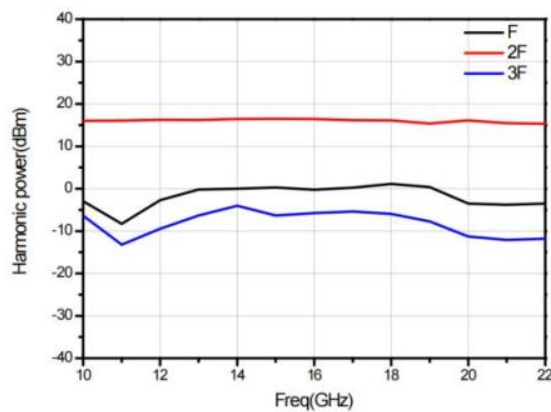


Figure 3.

VII. Overall and Port Dimensions (mm)

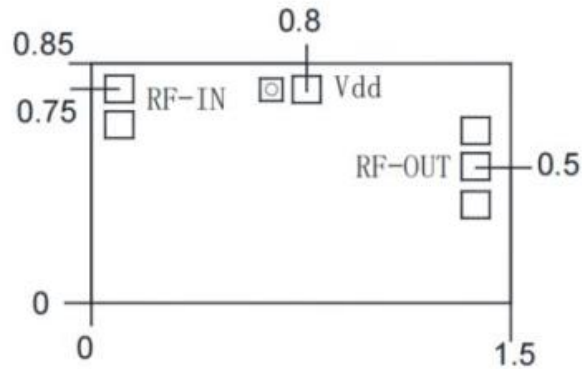


Figure 4.

VIII. Precautions

- The chip should be stored in a dry, nitrogen-filled environment and used in an ultra-clean environment;
- GaAs material is brittle and the chip surface cannot be touched. Be careful when using it;
- Sinter the chip with conductive glue or alloy (the alloy temperature cannot exceed 300 °C and the time cannot exceed 30 seconds) to ensure that it is fully grounded;
- The gap between the chip microwave port and the substrate should not exceed 0.05mm. Use 25μm double gold wire bonding. The recommended gold wire length is 250 to 400μm;
- The microwave end of the chip has a DC blocking capacitor;
- The chip is sensitive to static electricity. Please pay attention to anti-static measures during storage and use.