BSTLM34-0108

1-8GHz limiter chip

I. Product Introduction

BSTLM34-0108 is a high-performance limiter chip with a frequency range of 1 to 8 GHz, a limiting loss of -0.2 dB, and a limiting level of 15 dBm. This chip is compact and requires external DC-blocking capacitors at the input and output terminals. The chip utilizes on-chip through-hole metallization to ensure good grounding, eliminating the need for additional grounding measures and making it easy to use.

The back side is metallized and suitable for eutectic sintering or conductive adhesive bonding.

II. Key technical indicators

- Frequency range: 1-8GHz
- Insertion loss: -0.2dB
- Input return loss: -30dB
- Output return loss: -25dB
- Limiting level: 15dBm
- Power handling: 43dBm (CW)
- Chip size: 1.64mm x 0.80mm x 0.10mm

III. Functional Block Diagram

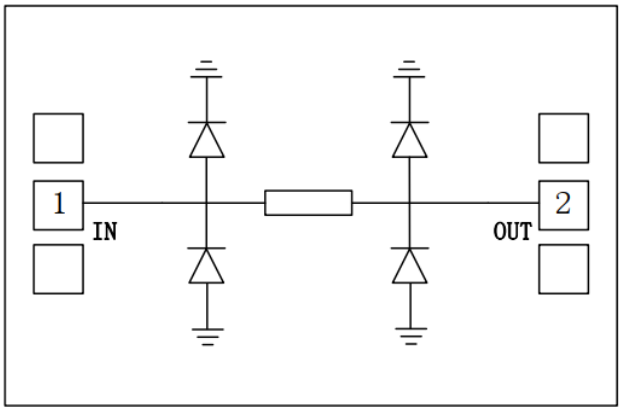

Figure 1

IV. Electrical performance table (T_A = +25 ℃)

Table 1.

PARAMETER NAME	SYMBOL	MINIMUM	TYPICAL VALUES	MAXIMUM	UNIT
Frequency range	Freq	1	—	8	GHz
Insertion loss	IL	-0.3	-0.2	—	dB
Clipping level	L LEVEL	—	15	—	dBm
Input return loss	RL_in	—	-30	-27	dB
Output return loss	RL_out	—	-25	-20	dB
Power handling	Power handling	—	—	43	dBm

V. Absolute Maximum Ratings

Table 2.

PARAMETER	VALUE
Maximum input power	+43dBm
Storage temperature	-65 ℃ ~+150 ℃
Operating temperature	-55 ℃ ~+125 ℃

VI. Test curve

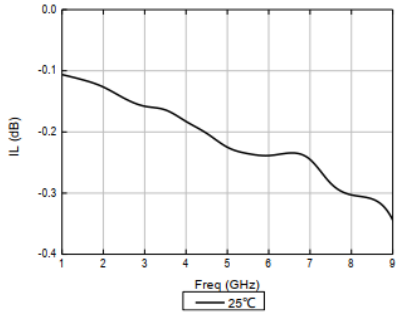

Figure 2. Insertion loss

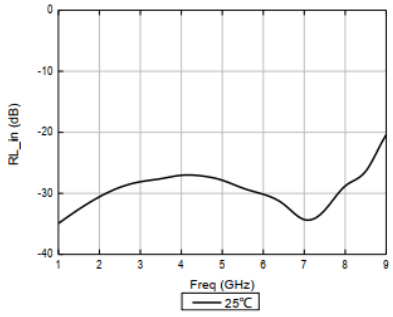

Figure 3. Input return loss

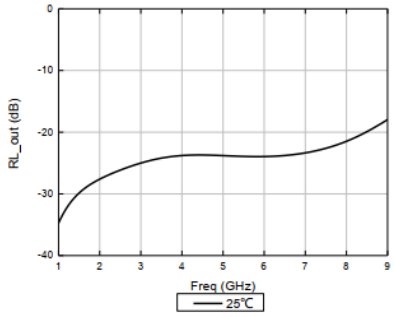

Figure 4. Output return loss

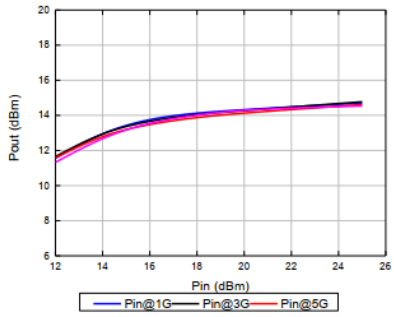

Figure 5. Clipping level

VII. Chip port diagram (unit: μm)

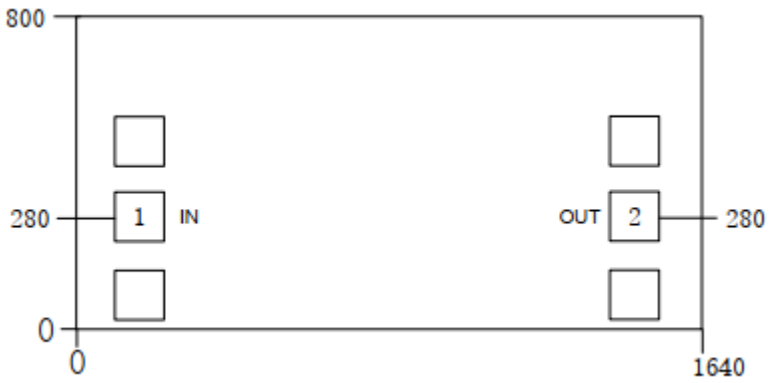

Figure 6. Clipping level

VIII. Port Definition

SERIAL NUMBER	PORT NAME	DEFINITION	SIGNAL OR VOLTAGE
1	IN	RF signal input terminal, the input terminal needs to be connected to an external DC blocking capacitor	RF
2	OUT	RF signal output terminal, the output terminal needs to be connected to an external DC blocking capacitor	RF

IX. Recommended assembly drawing

Figure 7.

X. Precautions

- Assemble and use in a clean environment;
- GaAs material is very brittle and the chip surface is easily damaged (do not touch the surface), so you must be careful when using it;

- Use two bonding wires (25μm diameter gold wire) for input and output. Keep the bonding wires as short as possible and no longer than 300μm.
- The sintering temperature should not exceed 300 °C, and the sintering time should be as short as possible, not exceeding 30 seconds;
- This product is an electrostatic sensitive device, please be careful to prevent static electricity during storage and use;
- Store in a dry, nitrogen environment;
- Do not attempt to clean the chip surface with dry or wet chemical methods.