

# Limiting Low-Noise Amplifier Chip

## AAS2801

### Product Specification

#### V1.0

### 1. Product Features

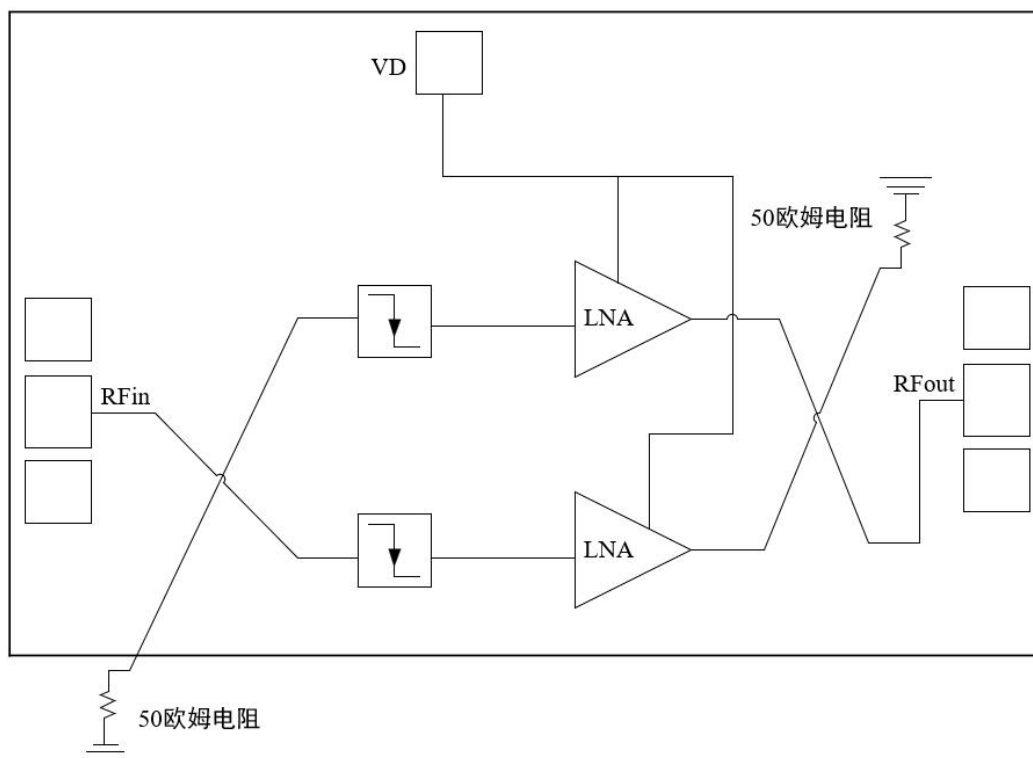
- Frequency Range: 7–13 GHz
- Small-signal Gain: 30 dB
- Noise Figure: 1.3 dB
- Output 1 dB Compression Point: 8 dBm
- Power Withstanding Capability: 20 W (Pulse Width 50 ms, Duty Cycle 30%, 85 °C)
- Bias Condition:  $V_D = 3.3\text{ V}$ ,  $I_{DQ} = 33\text{ mA}$
- Chip Dimensions:
  - LNA Section:  $1.2\text{ mm} \times 1.9\text{ mm} \times 0.10\text{ mm}$
  - Limiter Section:  $1.0\text{ mm} \times 2.4\text{ mm} \times 0.10\text{ mm}$

### 2. Functional Description

AAS2801 is a limiting low-noise amplifier chip operating at 7–13 GHz. Under the operating conditions of +3.3 V and 33 mA, it provides a gain of 30 dB, an output 1 dB compression point of 8 dBm, and a typical noise figure of 1.3 dB. Its power withstanding capability is 20 W measured at 85 °C with a pulse width of 50 ms and a duty cycle of 30%.

The chip features a  $50\ \Omega$  port impedance and is grounded via backside metallization.

### 3. Block Diagram



### 4. Typical Applications

Suitable for applications including communications and radar systems.

### 5. Electrical Performance Parameters

#### 5.1 RF Characteristics

Unless otherwise specified, all electrical characteristics are measured under the following conditions:  $V_D = 3.3\text{ V}$ ,  $I_{DQ} = 33\text{ mA}$ , small-signal  $P_{in} = -35\text{ dBm}$ ,  $T_A = +25\text{ }^\circ\text{C}$ ,  $50\ \Omega$  system, continuous wave.