



ICASD4450-D2S

PRODUCT SUMMARY



4.4 – 5.0 GHz DIFFERENTIAL TO SINGLE-ENDED GAIN AMPLIFIER

ICASD4450-D2S is a differential input, single-ended output, high-gain RF Amplifier designed for Wireless Infrastructure supporting all 3GPP 5G NR FR1 bands from 4.4 to 5.0 GHz. Based on GaAs technology, the amplifier excels in both low noise figure and high linearity, allowing the device to be used in both receiver and transmitter applications. The device is overmolded in a 2 x 2 mm² LGA package, with 100 Ω input and 50 Ω output impedances.

This amplifier is part of iCana's differential gain amplifier product line designed for wireless infrastructure supporting major 3GPP bands.

Key Features

- Frequency range: 4.4 – 5.0 GHz
- High and flat gain: $S_{21} = 16.5 \text{ dB} \pm 0.3 \text{ dB}$
- Low noise figure: $NF = 3.6 \text{ dB}$
- Good linearity: $OIP3 = 33 \text{ dBm}$
- High power: $OP1\text{dB} = 17 \text{ dBm}$
- Excellent return loss: $S_{11} > 10 \text{ dB}$, $S_{22} > 14 \text{ dB}$
- Single operation voltage ranging from 3.3 V to 5 V
- Low drain current: $IDD = 53 \text{ mA}$
- Power down mode: $IDD = 1 \text{ mA}$
- Impedance: 100 Ω differential input, 50 Ω single ended output
- No need for external choke inductor
- Package size: 2.0 x 2.0 x 0.75 mm³

Typical Applications

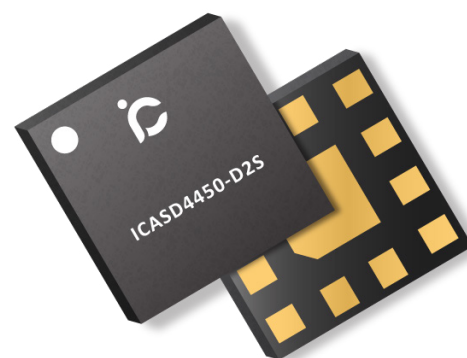
- 3GPP 5G NR FR1 band n79
- Massive MIMO
- Wireless communications infrastructure

Ordering Guide

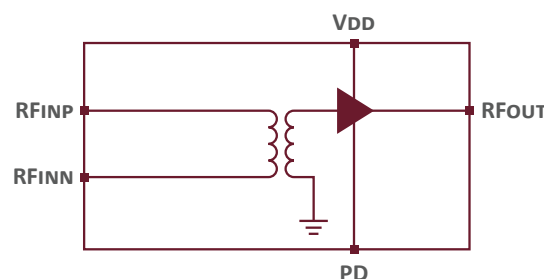
| Part Name | Description |
|-------------------|--|
| ICASD4450-D2S | 4.4 – 5.0 GHz Differential to Single-Ended Gain Amplifier |
| ICASD4450-D2S-EVB | Evaluation Board for ICASD4450-D2S |

5G NR FR1 D2SE Product Line

| Product Name | Description |
|---------------|---------------|
| ICASD1721-D2S | 1.7 – 2.1 GHz |
| ICASD2328-D2S | 2.3 – 2.8 GHz |
| ICASD3338-D2S | 3.3 – 3.8 GHz |
| ICASD4450-D2S | 4.4 – 5.0 GHz |



12 Pad 2 x 2 mm² SMT Package



Functional Block Diagram

REV 1.0

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