

Product Datasheet - Technical Specifications



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Differential Amplifier

1 Introduction

The TBCS101-DA is a differential amplifier with a flat response from DC – 250 MHz, a 3 dB bandwidth of 310 MHz, an attenuation of 1:50 and an output impedance of 50Ω.

Application:

Differential amplifier for CS101 test setups.
General-purpose differential amplifier



2 Specification

General specification

Frequency range: DC – 310 MHz, 3 dB bandwidth, typical
Gain: 1:50
Rise time: ≤ 2.3 ns (200mV step)
RF-connectors: BNC-female

Input specification

Input impedance: 1 MΩ // 10pF
Maximum input level: max. ± 50 V for linear operation (100V differential mode)
Maximum ratings: max. ± 100 V common mode / 200 V differential mode for damage

Output specification

Output impedance: 50 Ω
Output return loss: > 20 dB, typ.
Common Mode Rejection: DC – 1 MHz > 70 dB; 1 MHz – 100 MHz ≥ 80 dB; 100 MHz – 310 MHz ≥ 50 dB

Differential Amplifier

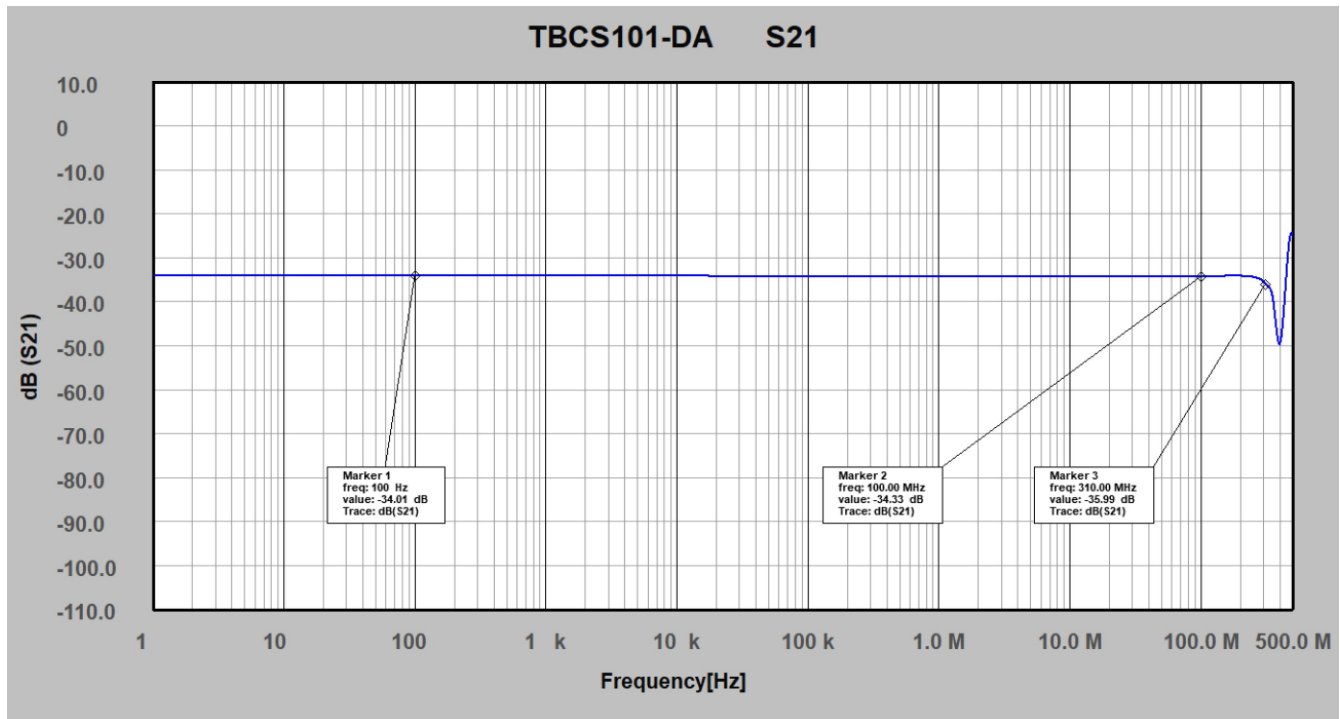
Max. output voltage: 2 V_{pp}
DC offset: < 10mV at output
Noise: < 1.4 mV_{RMS}

Supply specification

Power-connector: USB-C
Indicator LEDs: Power ON,
Operating voltage: 5 V DC
Current consumption: 90 mA
Operating temperature range: -20°C to +50°C
Dimensions: W 82 mm x H 33 mm x L 80 mm;
Weight: 100 g

3 Measurement Plots

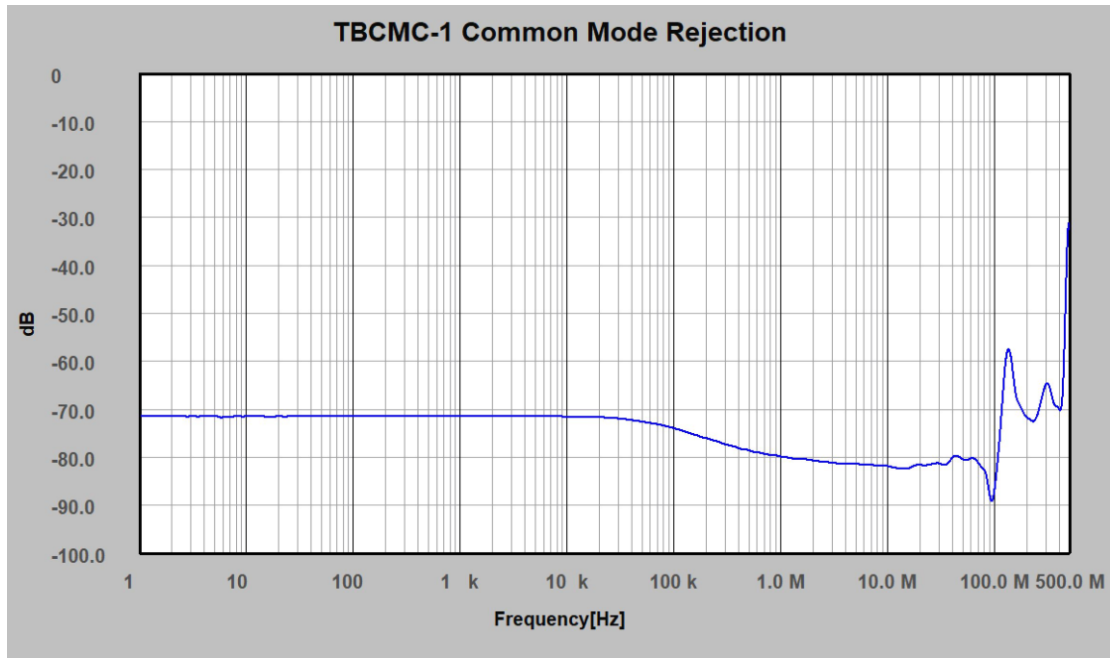
3.1 Gain



TBCS101-DA, Gain, DC – 500 MHz, typ.

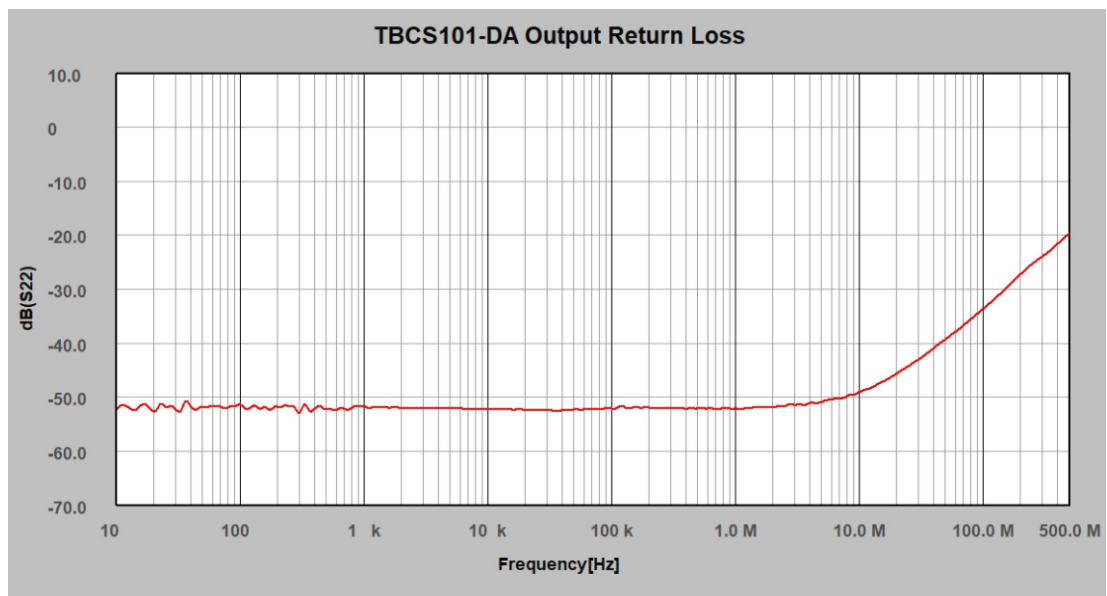
Differential Amplifier

3.2 Common Mode Rejection



TBCS101-DA, Common Mode Rejection, DC – 500 MHz, typ.

3.3 Output return loss



TBCS101-TGA, S22, 10 Hz – 500 MHz, typ.

Differential Amplifier

4 Ordering Information

| Part Number | Description |
|-------------|-------------------------------------|
| TBCS101-DA | Differential amplifier, USB-C cable |

5 History

| Version | Date | Author | Changes |
|---------|-----------|------------|--------------------------|
| V1.0 | 2. 3.2025 | Mayerhofer | Creation of the document |
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