

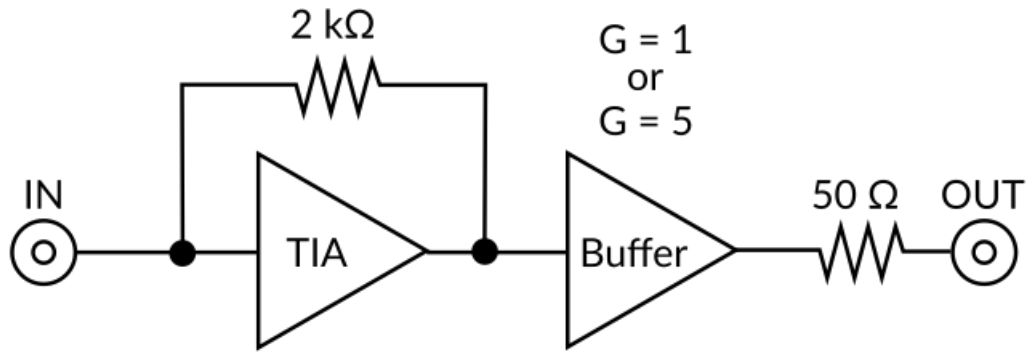
Koheron TIA100 is the 1-channel version of [Koheron TIA400 quad-channel transimpedance amplifier](#). It is a transimpedance amplifier (TIA) with a bandwidth of 2 MHz and an input-referred current noise of 5 pA/√Hz. It is compatible with photodiodes with up to 200 pF input capacitance (including cable capacitance).

## Specifications

**TIA100-2k-SMA**

|                                                       |                          |
|-------------------------------------------------------|--------------------------|
| Transimpedance gain                                   | 2 kV/A or 10 kV/A        |
| 3 dB bandwidth                                        | 2 MHz ( $C_{in} = 5$ pF) |
| <b>Input</b>                                          |                          |
| Input current range                                   | $\pm 4$ mA               |
| Input current noise density<br>1 MHz, $C_{in} = 5$ pF | 5 pA/ $\sqrt{\text{Hz}}$ |
| Maximum input capacitance                             | 200 pF                   |
| Coupling                                              | DC                       |
| <b>Output</b>                                         |                          |
| Output impedance                                      | 50 $\Omega$              |
| Output buffer gain                                    | 1 or 5                   |
| Output voltage range<br>high impedance                | -8 V to 8 V              |
| Output voltage range<br>50 $\Omega$                   | -2 V to 2 V              |
| <b>Power supplies</b>                                 |                          |
| Positive supply voltage                               | 11.5 V to 13 V           |
| Negative supply voltage<br>bipolar output             | -13 V to -11.5 V         |
| Negative supply voltage<br>unipolar output            | -6 V to -4.5 V           |
| Supply current per rail                               | 100 mA                   |
| Quiescent current per rail                            | 12 mA                    |
| <b>Other</b>                                          |                          |
| Outside dimensions                                    | 68 mm x 38 mm x 14 mm    |
| Weight                                                | 13 g                     |
| Operating temperature                                 | 0 °C to 50 °C            |

## Functional diagram

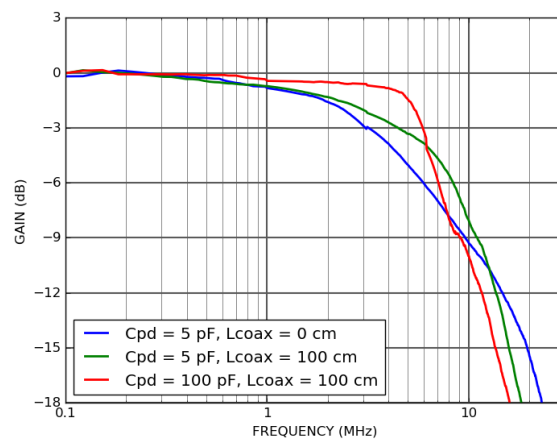


TIA100 functional diagram

## Characterization

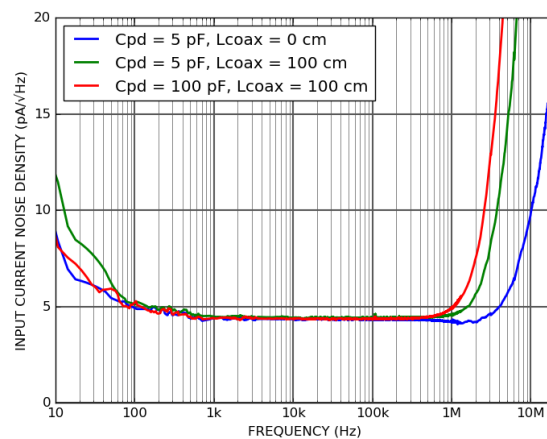
The frequency response and the input current noise density are shown for different photodiodes (capacitance  $C_{pd}$ ) and input coaxial cable lengths ( $L_{coax}$ , typical capacitance 1 pF/cm).

### Frequency response



TIA100-2k-SMA frequency response

### Input current noise density



TIA100-2k-SMA input current noise density

## Ordering codes

| PRODUCT NUMBER | ATTRIBUTE |
|----------------|-----------|
| TIA100-2k-SMA  | None      |