**FEATURES**

- Small signal bandwidth DC ... 2.0/1.7/1.5GHz
- Voltage gain 26dB (x20), 32dB (x40), 38dB (x80)
- DC coupling
- Closed loop OP-Amp design
- Low noise
- High output drive
- Single supply operation / internally generated bipolar supply / internal supply regulation

**APPLICATIONS**

- Pre-amp for ultra fast detectors (MCP, PMT, ...)
- Oscilloscope and transient recorder pre-amp
- High precision Time-of-Flight
- Photon-/Ion- counting
- Wideband signal processing

**DESCRIPTION**

The TA2000B-x models are fast, two-stage pulse preamplifier with a small signal bandwidth of 1.5 ... 2.0 GHz depending on the model. A unique feature for such high speed amplifiers is the DC coupling. DC coupling avoids count rate effects due to non DC balanced pulse trains and the corresponding charging of coupling capacitors.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Voltage gain:</th>
<th>TA2000B-1:</th>
<th>26 dB / x20</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TA2000B-2:</td>
<td>32 dB / x40</td>
</tr>
</tbody>
</table>

**Input:** BNC, 50 Ohm, DC coupled

**Outputs:** BNC, low impedance, DC coupled

50Ω output option available

$V_{OUT} = +/- 1.3V$ max.

$I_{OUT} = +/- 150mA$ max.

**Small signal bandwidth:**

| TA2000B-1: | 2.0 GHz |
| TA2000B-2: | 1.7 GHz |
| TA2000B-3: | 1.5 GHz |

**Slew rate:** 5500 V/µs (2V step)

**Input offset voltage:**

5.25mV max., +/- 20 µV/°C typ.

adjustable (ref. circuit diagram)

**Input referred noise:**

| TA2000B-1: | 3.7 µV RMS |
| TA2000B-2: | 4.0 µV RMS |
| TA2000B-3: | 5.4 µV RMS |

**Noise figure:** 17 dB

**Material:**

- Case: extruded aluminium sheath
- Al Mg Si 0.5
- Lid: die cast, GD-Al Si 12
- Size: 65/101 x 60 x 35 mm
- Weight: 124 g

**Power Requirements:**

- Connector: 2.1 mm center pin
- Supply Voltage: nominal +12V voltage range +10 ... +18V
- Supply Power: 2.5W
- False polarity protection

**Absolute maximum ratings:**

- Supply: 25V (100ms max.)
- Signal input: +/- 18V, +/- 140mA
- ESD rating: 3000V HBM, 200V MM

**Accessories:**

- External wall power supply (included)
- L-clips (AB-WL) for wall/-screw -mounting (optional)

**Available Options:**

- 50 Ω output impedance
- Input AC coupling
TA2000B-1/-2/-3 Fast Pulse / Timing Preamplifier
x20/x40/x80 Two-Stage, 2.0/1.7/1.5GHz, DC coupled

Pulse Response:
TA2000B-1: 200mV_{P-P} small signal

TA2000B-2: 200mV_{P-P} small signal

TA2000B-3: 200mV_{P-P} small signal

TA2000B-1: 800mV_{P-P} large signal

TA2000B-2: 800mV_{P-P} large signal

TA2000B-3: 800mV_{P-P} large signal

---

Frequency Response (200mVRms Output into 50 Ohm)