

TA2000B-1/-2/-3 Fast Pulse / Timing Preamplifier x20/x40/x80 Two-Stage, 2.0/1.7/1.5GHz, DC coupled

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

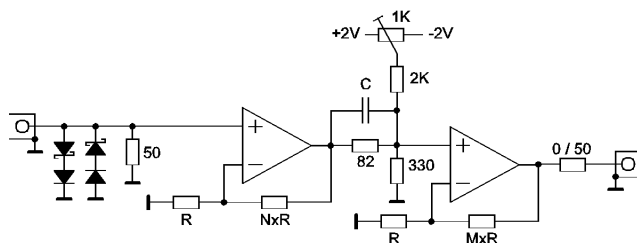
- Pre-amp for ultra fast detectors (MCP, PMT, ...)
- Oscilloscope and transient recorder pre-amp
- High precision Time-of-Flight
- Photon-/Ion- counting
- Wideband signal processing



DESCRIPTION

The TA2000B-x models are fast, two-stage pulse pre-amplifier 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

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|----------------------|------------|-------------|
| Voltage gain: | TA2000B-1: | 26 dB / x20 |
| | TA2000B-2: | 32 dB / x40 |

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|------------|------------------------------|
| TA2000B-3: | 38 dB / x80 non-inverting |
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| 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. |

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|--------------------------------|-----------------------------|
| Small signal bandwidth: | ($V_{OUT} = 200mV_{RMS}$) |
| TA2000B-1; | 2.0 GHz |
| TA2000B-2; | 1.7 GHz |
| TA2000B-3; | 1.5 GHz |

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| Slew rate: | 5500 V/μs (2V step) |
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| Input offset voltage: | 5.25mV max., +/- 20 μV/°C typ. adjustable (ref. circuit diagram) |
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| Input referred noise: | |
| TA2000B-1: | 3.7 μV _{RMS} |
| TA2000B-2: | 4.0 μV _{RMS} |
| TA2000B-3: | 5.4 μV _{RMS} |

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| Noise figure: | 17 dB |
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Material:

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|----------------|---|
| 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:

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|----------------------------------|--|
| 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: | +/- 1.8V, +/- 140mA |
| ESD rating: | 3000V HBM, 200V MM |

Accessories:

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

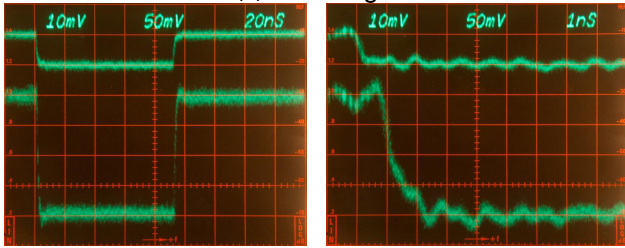
Available Options:

- 50 Ω output impedance
- Input AC coupling

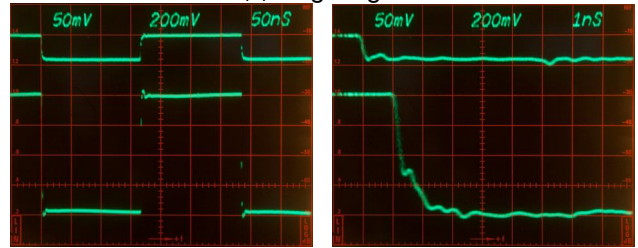
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Pulse Response:

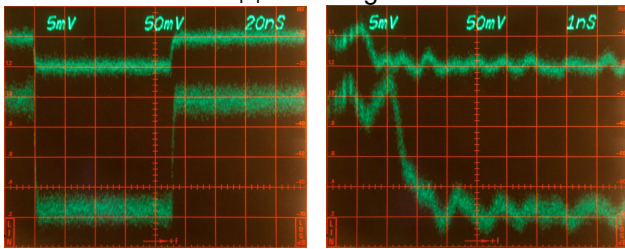
TA2000B-1: 200mV_{P-P} small signal



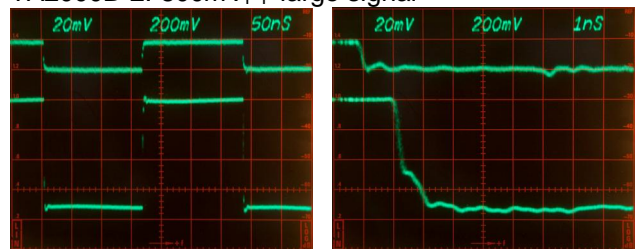
TA2000B-1: 800mV_{P-P} large signal



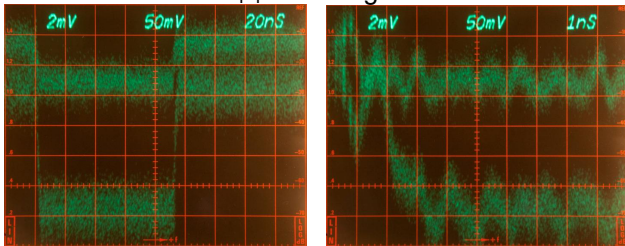
TA2000B-2: 200mV_{P-P} small signal



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



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



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

