

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

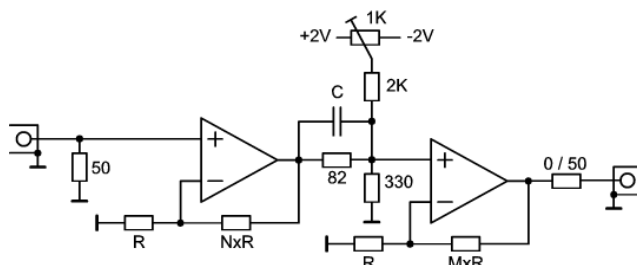
- Pre-amp for ultra fast detectors (MCP, PMT, ...)
- Oscilloscope and transient recorder pre-amp
- High precision Time-of-Flight
- Photon-/Ion- counting
- Wideband signal processing



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

Voltage gain: TA2000B-1: 26 dB / x20
TA2000B-2: 32 dB / x40
TA2000B-3: 38 dB / x80
non-inverting

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: ($V_{OUT} = 200mV_{RMS}$)
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
Reverse polarity protected

Absolute maximum ratings:

Supply: 25V (100ms max.)
Signal input: +/- 2.5V
ESD rating: 3000V HBM, 200V MM

Accessories:

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

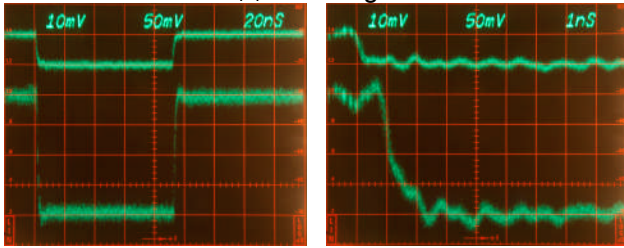
Available Options:

- 50 Ω output impedance
- Input AC coupling

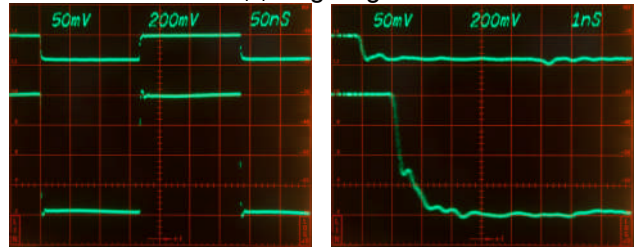
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Pulse Response:

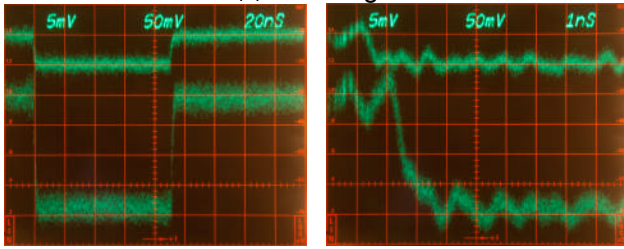
TA2000B-1: 200mV_{P-P} small signal



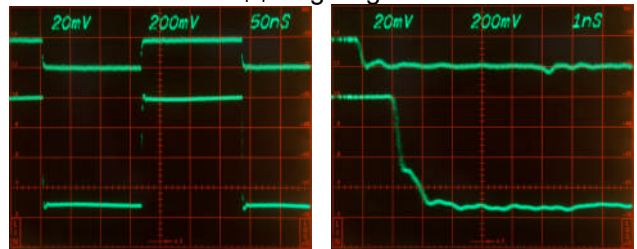
TA2000B-1: 800mV_{P-P} large signal



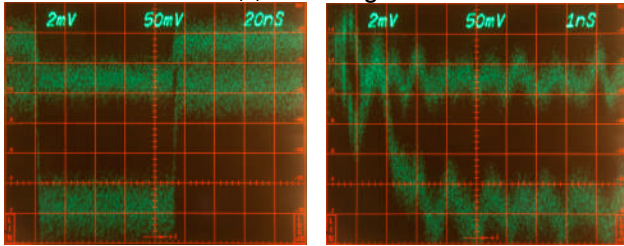
TA2000B-2: 200mV_{P-P} small signal



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



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



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

