

# TA2400 Fast Pulse / Timing Preamplifier

## 2.4 GHz, DC coupled

### FEATURES

- Small signal bandwidth DC ... 2400MHz
- Voltage gain 14dB (x5)
- 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

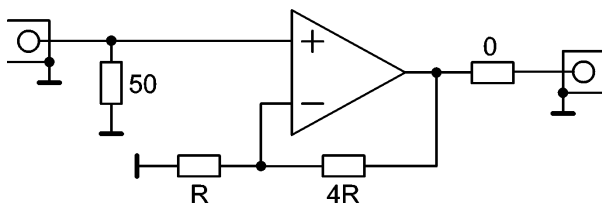
The TA2400 is a fast pulse preamplifier with a small signal bandwidth of 2.4GHz.

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 coupling capacitor charging.

A test with a 30mV<sub>P-P</sub> pulse and a P7889 100ps TOF analyzer showed an improvement of 10...15% in peak width (FWHM) when a TA1800B was used for amplification of the small pulse signal.



### SPECIFICATIONS



- Voltage gain:** 14 dB / x5, non inverting
- Input:** BNC, 50 Ohm, DC coupled
- Outputs:** BNC, low impedance, DC coupled  
 $V_{OUT} = +/- 1.3V$  max.  
 $I_{OUT} = +/- 150mA$  max.
- Small signal bandwidth:** 2400 MHz,  $V_{OUT} = 200mV_{RMS}$

### Full power bandwidth:

875 MHz,  $V_{OUT} = 2V_{P-P}$

### Slew rate:

5500 V/ $\mu$ s (2V step)

### Input offset voltage:

5.25mV max., +/- 20  $\mu$ V/ $^{\circ}$ C typ.

### Input referred noise:

(20Hz...1MHz) 2.8 nV/ $\sqrt$ Hz  
 $3.2\mu V_{RMS}$

### Noise Figure:

(100MHz) 16dB

### 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: +/- 1.8V, +/- 140mA

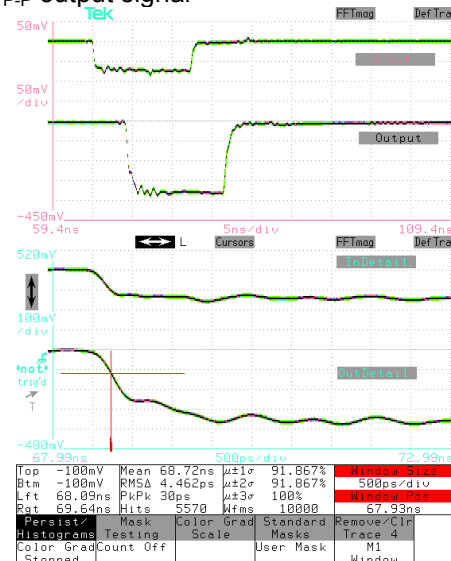
ESD rating: 3000V HBM, 200V MM

### Accessories:

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

### Pulse Response:

200mV<sub>P-P</sub> output signal



### Available Options:

- 50  $\Omega$  output impedance
- Input AC coupling