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Find the *Tektronix P6701B* at our website: ***Click HERE***

# Optical-to-Electrical Converters

▶ P6701B • P6703B



▶ *P6701B, P6703B.*

## ▶ Features & Benefits

Broad Wavelength Response 500 to 950 nm or 1100 to 1700 nm

High Bandwidth DC up to 1.2 GHz

High Gain 1 V/mW

Low Noise <11 pW/square root Hz

Probe Connects Directly to TDS7000/5000/3000/500/600/700 Series Scope (TEKPROBE™) or Other 50 Ω Instruments with 1103 TEKPROBE® Power Supply

SONET/SDH and Fibre Channel Reference Receiver Performance: TDS500C/700C (Opt. 3C or 4C) P6701B: Fibre Channel up to 1063 Mb/s, P6703B: SONET/SDH up to 622 Mb/s

## ▶ Applications

Eye-pattern Testing of Optical Communication Signals (SONET/SDH and Fibre Channel)

The Tektronix P6700 Series optical-to-electrical (O/E) converters change optical signals into electrical signals for convenient analysis on Tektronix TDS7000/5000/3000/500/600/700 Series oscilloscopes equipped with the TEKPROBE interface, or any other oscilloscope when used with the 1103 TEKPROBE power supply. The P6700 Series O/E converters are ideal for optical source characterization in the development, manufacture or service of optical communication systems and devices.

Small, conveniently packaged P6701B and P6703B optical-to-electrical analog converters provide an accurate interface for optical pulse shape measurements. The high gain, large dynamic range and stable output offset of these O/E converters make them ideal for performing eye-pattern analysis and extinction measurements.

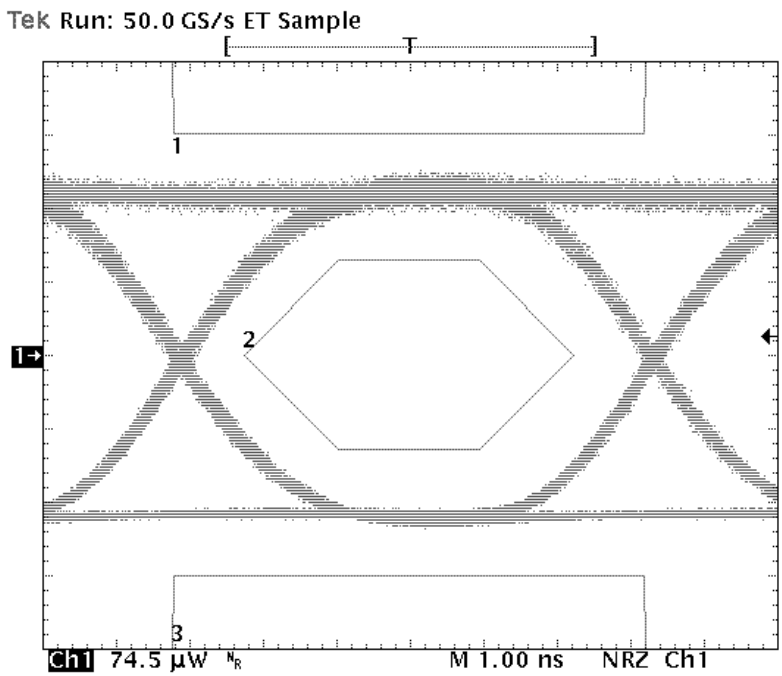
The P6701B/P6703B optical input is a one meter, 62.5µ multimode fiber with an FC/PC connector. Using the standard assortment of hybrid fiber optic mating sleeves, these O/Es can accommodate the various industry connector standards.

The TEKPROBE interface provides power, auto-scaling, auto-termination and correct units (microwatts) when used with Tektronix TDS500/600/700 Series oscilloscopes.

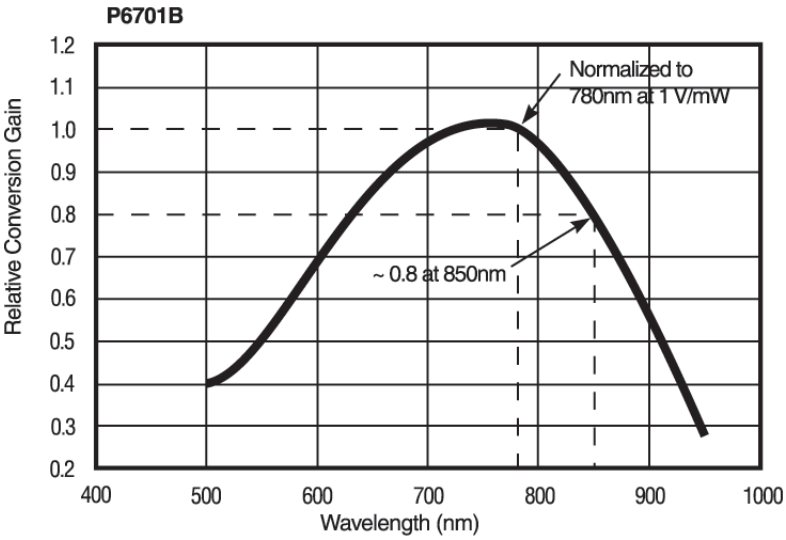




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▶ *OC-3/STM-1 SONET/SDH transmitter eye pattern test.*




▶ *P6701B: Typical wavelength dependent gain (at 25 °C).*

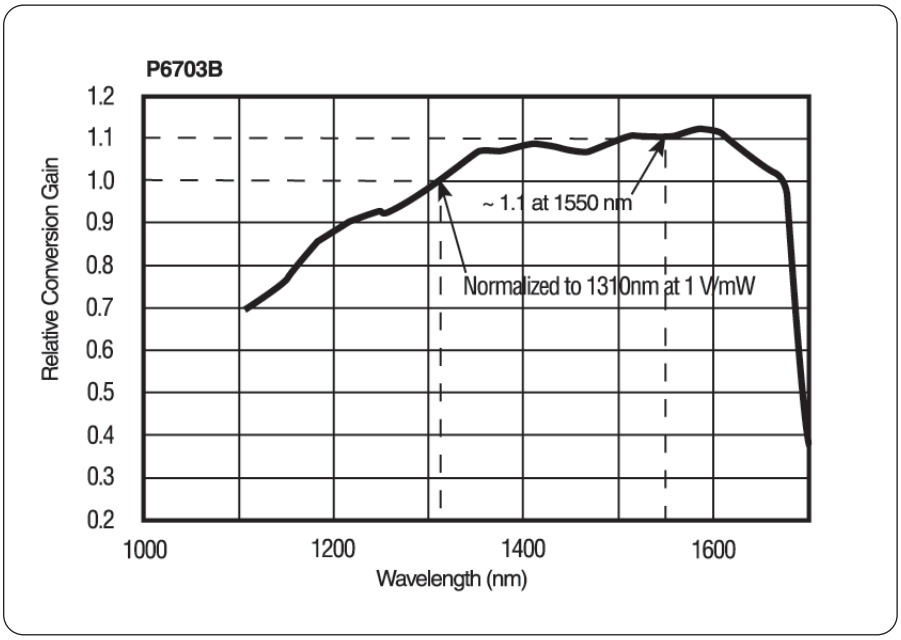
### SONET/SDH and Fibre Channel Reference Receiver Performance

The P6701B and P6703B can be transformed into ITU G.957 or ANSI FC-PH reference receivers when they are either ordered as an option (3C - P6701B, 4C - P6703B) to the latest Tektronix TDS500C/700 Series digitizing oscilloscopes or as a stand-alone hardware solution (nominal).

The TDS Option 3C provides a calibrated P6701B reference receiver for Fibre Channel dates rates from 133 Mb/s up to 1063 Mb/s. Option 4C provides a calibrated P6703B reference receiver for SONET/SDH date rates from 52 Mb/s up to 622 Mb/s. The optical-to-electrical converters are matched and calibrated to a specific scope channel which ensures complete system compliance with the fourth-order Bessel-Thompson frequency response.

The P6703B, when used in conjunction with the FS52, FS156 or FS622 SONET/SDH hardware filters, provide customers with a nominal reference receiver performance for 51.84 Mb/s, 155.52 Mb/s, and 622 Mb/s.

The standard P6701B has a nominal frequency response which follows the fourth-order Bessel-Thompson for Fibre Channel 1063 Mb/s. The 1103 TEKPROBE power supply can be used to connect these products to the 11800 Series or CSA803 Series sampling oscilloscopes.




▶ *P6703B: Typical wavelength dependent gain (at 25 °C).*

## ▶ Characteristics

| | P6701B | P6703B |
|---|---|---|
| Wavelength Response | 500 to 950 nm | 1100 to 1650 nm |
| Bandwidth*[1] (Typical) | DC to 1.0 GHz | DC to 1.2 GHz |
| Rise Time (Typical) | ≤500 ps | ≤395 ps |
| Conversion Gain | 1 V/mW | 1 V/mW |
| Max. Input Optical Power | 1 mW (0 dBm)*[2] | 1 mW (0 dBm)*[2] |
| | 10 mW (10 dBm)*[3] | 10 mW (10 dBm)*[3] |
| | 20 mW (13 dBm)*[4] | 20 mW (13 dBm)*[4] |
| Max. Output Modulation Depth for Reference Receiver Performance | ≤200 $mV_{p-p}$ | ≤200 $mV_{p-p}$ |
| Noise Equivalent Power | ≤0.87 µW (RMS)*[5] | ≤0.59 µW (RMS)*[5] |
| | ≤28 pW per square root Hz | ≤19 pW per square root Hz |
| Max. Input Fiber Core Diameter | 62.5 µm | 62.5 µm |

*[1] Optical Bandwidth (-6 dB electrical).

*[2] Maximum average operating power.

*[3] Max average nondestruct.

*[4] Max peak nondestruct.

*[5] 1 GHz low pass filter in series with output.

## ▶ Ordering Information

### P6701B

Optical-to-electrical Converter with FC/PC Connector.

**Includes:** Hard Case, User Manual (English, French, German, and Japanese), Assorted Fiber Optic Hybrid Connectors (FC/FC, FC/ST and FC/SC), Certificate of Traceable Calibration. Please specify power plug when ordering.

### P6703B

Optical-to-electrical Converter with FC/PC Connector.

**Includes:** Hard Case, User Manual (English, French, German, and Japanese), Assorted Fiber Optic Hybrid Connectors (FC/FC, FC/ST and FC/SC), Certificate of Traceable Calibration. Please specify power plug when ordering.

### Service

**Opt. C3 –** Calibration Service 3 Years.

**Opt. C5 –** Calibration Service 5 Years.

**Opt. D1 –** Calibration Data Report.

**Opt. D3 –** Calibration Data Report 3 Years (with Option C3).

**Opt. D5 –** Calibration Data Report 5 Years (with Option C5).

**Opt. R3 –** Repair Service 3 Years.

**Opt. R5 –** Repair Service 5 Years.

### Power Plug Options

**Opt. A0 –** US Plug, 115 V, 60 Hz.

**Opt. A1 –** Euro Plug, 220 V, 50 Hz.

**Opt. A2 –** UK Plug, 240 V, 50 Hz.

**Opt. A3 –** Australian Plug, 240 V, 50 Hz.

**Opt. A5 –** Swiss Plug, 220 V, 50 Hz.

### Accessories

**Single-mode Fiber Optic Cables –** (9 µm)

FC/PC to FC/PC. Order 174-1387-00.

FC/PC to ST. Order 174-1386-00.

FC/PC to SC/PC. Order 174-3921-00.

FC/PC to Diamond (2.5). Order 174-1497-00.

FC/PC to Diamond (3.5). Order 174-1385-00.

**Multimode Fiber Optic Cables –** (62.5 µm)

FC/PC to FC/PC. Order 174-2322-00.

FC/PC to SC/PC. Order 174-4093-00.

FC/PC to SMA. Order 174-2324-00.

**90/10, 3 Port Single-mode Optical Splitter FC/PC Connectors –** Order 174-3737-00.

**10 dB, In-line Single-mode Optical Attenuator FC/PC Connectors –** Order 119-5118-00.

**DIN/FC Fiber Optic Hybrid Connector –** Order 020-2209-00.

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10/06 DV/WOW 60W-11304-2



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