

Optical-to-Electrical Converters

P6701B • P6703B Datasheet



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 $<11 \text{ pW}/\sqrt{\text{Hz}}$
- Probe Connects to DPO7000*1 and DPO/DSA/MSO70000*2 Series
- 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 DPO7000 and DPO/DSA/MSO70000 Series oscilloscopes with appropriate adapters (see footnote 1 and 2), any other Tektronix oscilloscope equipped with a TekProbe interface, or 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 1 meter, 62.5 μ Multi Mode 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.

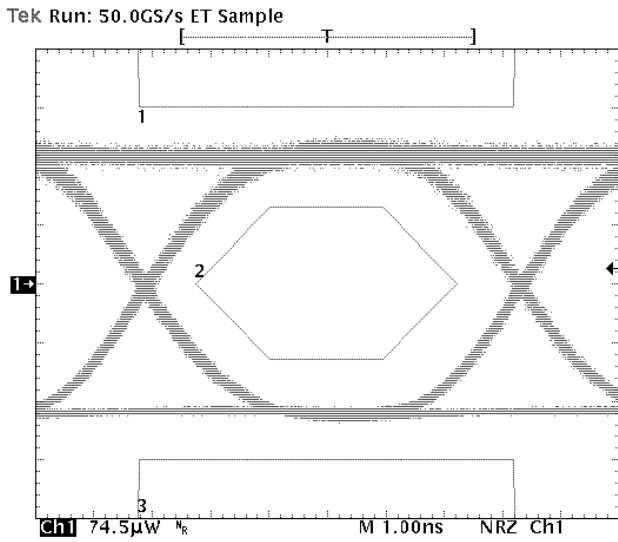
The TekProbe interface provides power, auto-scaling, auto-termination, and correct units (microwatts) when used with Tektronix DPO7000 or DPO/DSA/MSO70000 and earlier TekProbe-equipped Series oscilloscopes.

Performance You Can Count On

Depend on Tektronix to provide you with performance you can count on. In addition to industry-leading service and support, this product comes backed by a one-year warranty as standard.

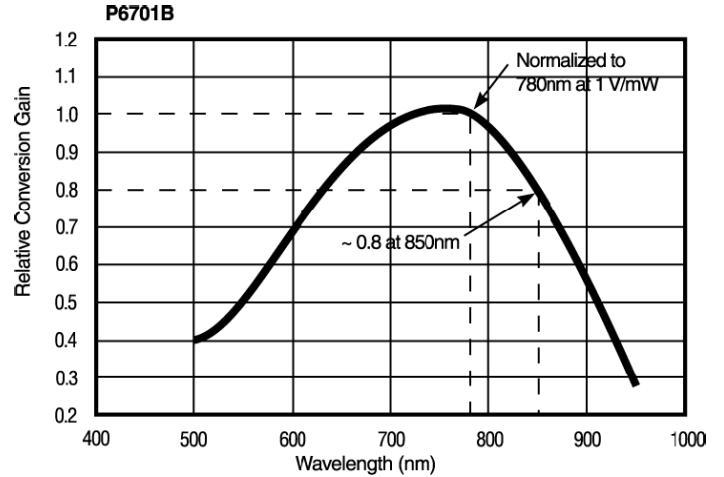
*1 Requires the TPA-BNC adapter.

*2 Requires the TCA-BNC adapter.

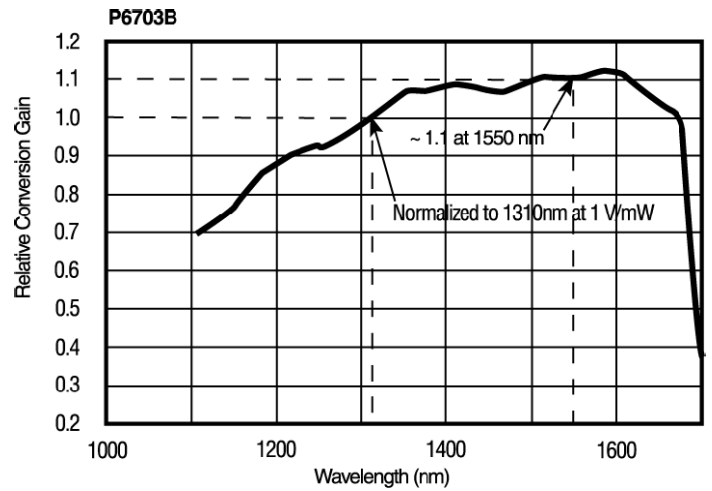


OC-3/STM-1 SONET/SDH Transmitter Eye Pattern Test.

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 DSA8200 Series sampling oscilloscopes.



P6701B: Typical Wavelength-dependent Gain (at 25 °C).



P6703B: Typical Wavelength-dependent Gain (at 25 °C).

Characteristics

Characteristic	P6701B	P6703B
Wavelength Response	500 to 950 nm	1100 to 1650 nm
Bandwidth* ³ (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)* ⁴	1 mW (0 dBm)* ⁴
	10 mW (10 dBm)* ⁵	10 mW (10 dBm)* ⁵
	20 mW (13 dBm)* ⁶	20 mW (13 dBm)* ⁶
Max Output Modulation Depth for Reference Receiver Performance	≤200 mV _{p-p}	≤200 mV _{p-p}
Noise Equivalent Power	≤0.87 μW (RMS)* ⁷	≤0.59 μW (RMS)* ⁷
	≤28 pW per √Hz	≤19 pW per √Hz
Max Input Fiber Core Diameter	62.5 μm	62.5 μm

*³ Optical bandwidth (-6 dB electrical).

*⁴ Maximum average operating power.

*⁵ Max average nondestruct.

*⁶ Max peak nondestruct.

*⁷ 1 GHz low-pass filter in series with output.

Ordering Information

P6701B

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

P6703B

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

All Include: 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, One-year Warranty.

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 Opt. C3).

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

Opt. R3 – Repair Service 3 Years.

Opt. R5 – Repair Service 5 Years.

Opt. SILV600 – Standard Warranty Extended to 5 Years.

Power Supply

1103 – TekProbe Power Supply. Please specify power plug when ordering.

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-xx.

FC/PC to ST: Order 174-1386-xx.

FC/PC to SC/PC: Order 174-3921-xx.

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

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

Multi Mode Fiber-optic Cables – (62.5 μm)

FC/PC to FC/PC: Order 174-2322-xx.

FC/PC to SC/PC: Order 174-4093-xx.

FC/PC to SMA: Order 174-2324-xx.

90/10, 3-port Single Mode Optical Splitter FC/PC Connectors – Order 174-3737-xx.

10 dB, Inline Single Mode Optical Attenuator FC/PC Connectors – Order 119-5118-xx.

DIN/FC Fiber-optic Hybrid Connector – Order 020-2209-xx.



Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

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For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tektronix.com



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