

Optical-to-Electrical Converters

P6701B & P6703B Datasheet



Small, conveniently packaged P6701B and P6703B optical-to-electrical analog converters provide an accurate interface for optical pulse shape measurements.

Features and 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/√Hz
- Probe Connects to DPO7000 ¹ and DPO/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)

Product description

The Tektronix P6700 Series optical-to-electrical (O/E) converters change optical signals into electrical signals for convenient analysis on Tektronix DPO7000 and DPO/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, 62.5µ 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/MSO70000 and earlier TekProbe-equipped Series oscilloscopes.

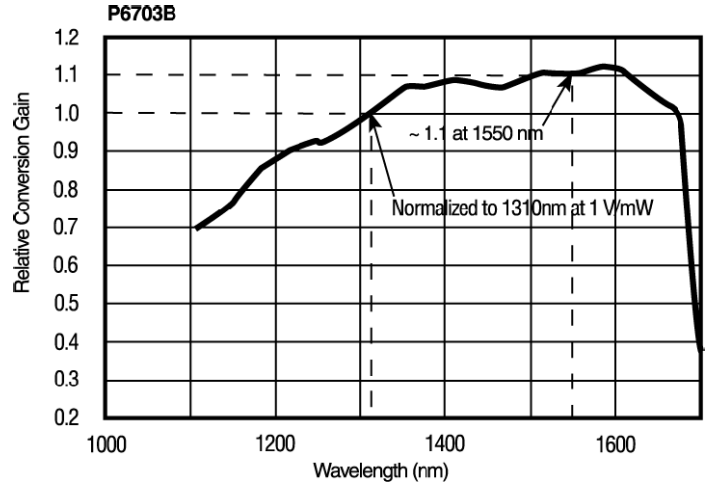
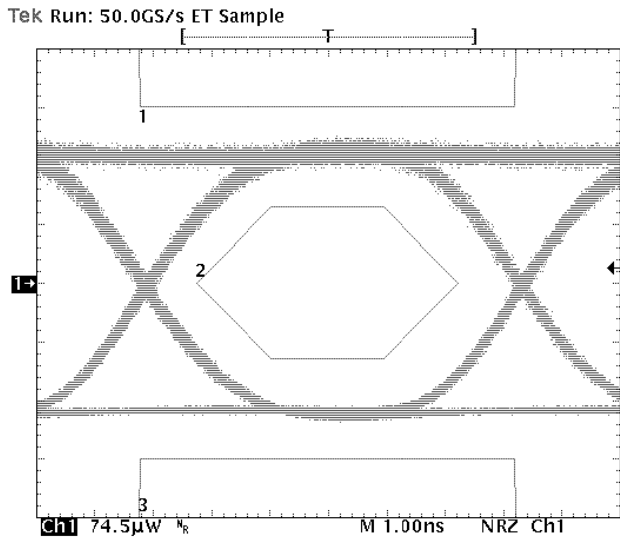
Performance you can count on

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.

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 DSA8300 Series sampling oscilloscopes.

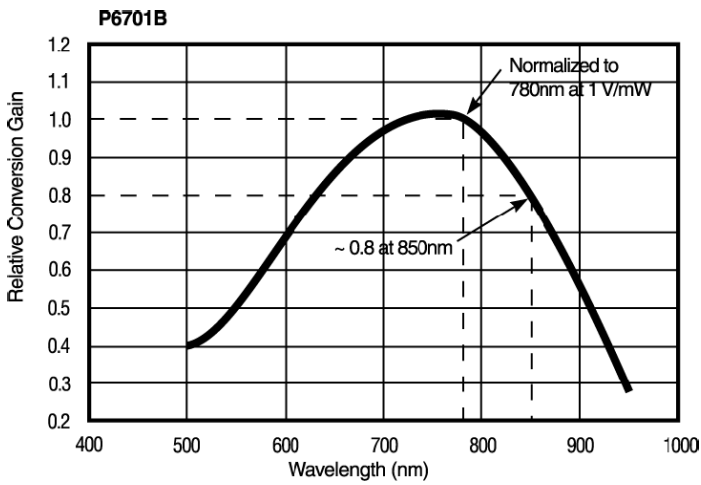
¹ Requires the TPA-to-BNC adapter

² Requires the TCA-to-BNC adapter



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

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



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

Specifications

All specifications are guaranteed unless noted otherwise. All specifications apply to all models unless noted otherwise.

Probe overview

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
Maximum 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
Maximum output modulation depth for reference receiver performance	≤ 200 mV _{p-p}	≤ 200 mV _{p-p}
Noise equivalent power	≤ 0.87 Noise Equivalent Power μW (RMS) ⁷	≤ 0.59 μW (RMS) ⁷
	≤ 28 pW per √Hz	≤ 19 pW per √Hz
Maximum input fiber core diameter	62.5 μm	62.5 μm

Ordering information

Models

P6701B Optical-to-electrical Converter with FC/PC Connector

P6703B Optical-to-electrical Converter with FC/PC Connector

Both probes include: Hard case, Instruction manual (English), Certificate of Traceable Calibration, One-year warranty

³ Optical bandwidth (-6 dB electrical)

⁴ Maximum average operating power

⁵ Maximum average nondestruct

⁶ Maximum peak nondestruct

⁷ 1 GHz low-pass filter in series with the output

Options

Service options

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 (including warranty)
Opt. R5	Repair Service 5 Years (including warranty)

Power supply

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



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

ASEAN / Australasia (65) 6356 3900
Belgium 00800 2255 4835*
Central East Europe and the Baltics +41 52 675 3777
Finland +41 52 675 3777
Hong Kong 400 820 5835
Japan 81 (3) 6714 3086
Middle East, Asia, and North Africa +41 52 675 3777
People's Republic of China 400 820 5835
Republic of Korea +822 6917 5084, 822 6917 5080
Spain 00800 2255 4835*
Taiwan 886 (2) 2656 6688

Austria 00800 2255 4835*
Brazil +55 (11) 3759 7627
Central Europe & Greece +41 52 675 3777
France 00800 2255 4835*
India 000 800 650 1835
Luxembourg +41 52 675 3777
The Netherlands 00800 2255 4835*
Poland +41 52 675 3777
Russia & CIS +7 (495) 6647564
Sweden 00800 2255 4835*
United Kingdom & Ireland 00800 2255 4835*

Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777
Canada 1 800 833 9200
Denmark +45 80 88 1401
Germany 00800 2255 4835*
Italy 00800 2255 4835*
Mexico, Central/South America & Caribbean 52 (55) 56 04 50 90
Norway 800 16098
Portugal 80 08 12370
South Africa +41 52 675 3777
Switzerland 00800 2255 4835*
USA 1 800 833 9200

* European toll-free number. If not accessible, call: +41 52 675 3777

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.tek.com.

Copyright © Tektronix, Inc. All rights reserved. Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specification and price change privileges reserved. TEKTRONIX and TEK are registered trademarks of Tektronix, Inc. All other trade names referenced are the service marks, trademarks, or registered trademarks of their respective companies.



13 Feb 2017 60W-11304-10

