Tektronix®

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.

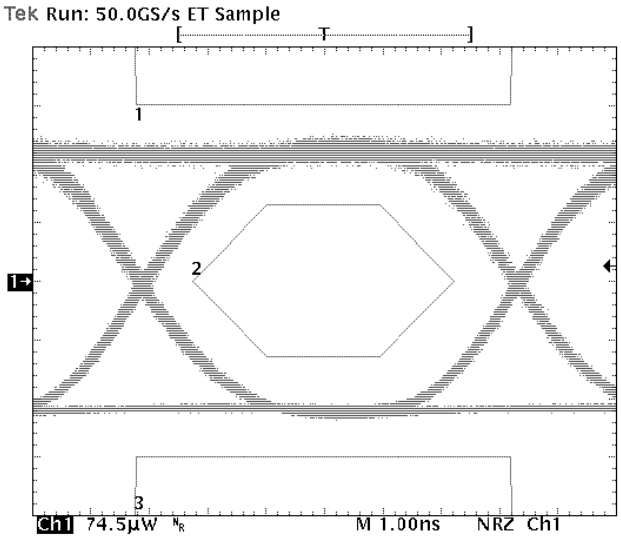
Performance you can count on

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.

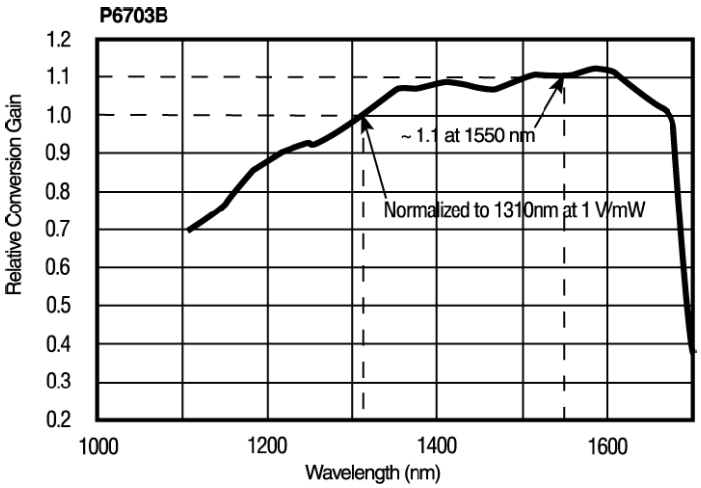
The standard P6701B has a nominal frequency response which follows the fourth-order Bessel-Thompson for Fibre Channel 1063 Mb/s. The 1103 TekProbe power supply can be used to connect these products to the DSA8300 Series sampling oscilloscopes.

1 Requires the TPA-to-BNC adapter

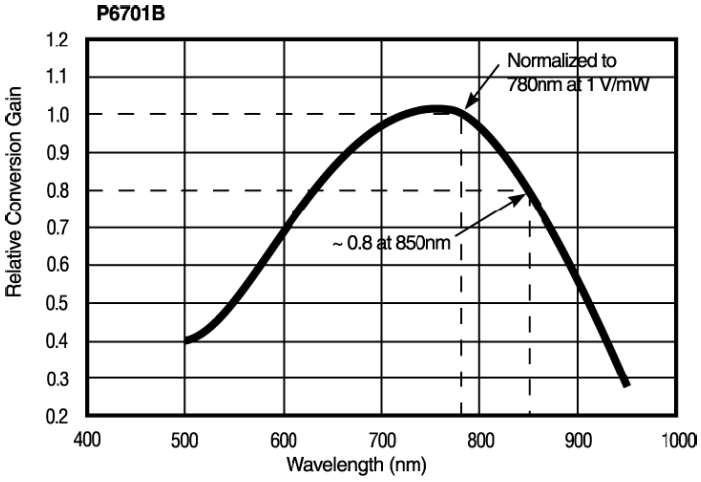
2 Requires the TCA-to-BNC adapter



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



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



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.

CE

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

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