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Find the *Tektronix / Picosecond Pulse Labs 4015C* at our website: *Click HERE*

PICOSECOND PULSE LABS®

MODEL 4015B TDR AMPLIFIER & PULSE GENERATOR

ULTRA FAST FALLTIME only 15 PS !

HIGH AMPLITUDE -9 Volts

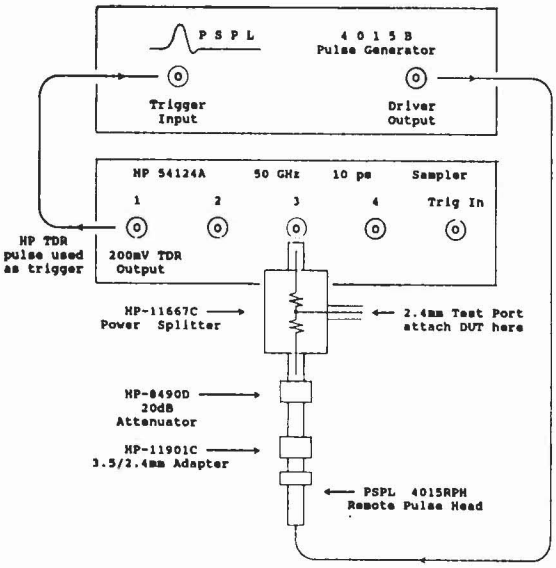


PULSE HEAD
Model 4015RPH - full size

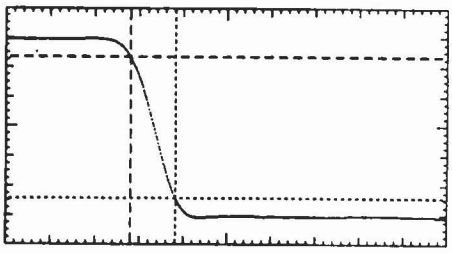


The PSPL Model 4015B is the world's fastest commercially available high amplitude Pulse Generator. It produces a pulse of -9 Volts amplitude into 50 Ohms with a falltime of only 15 ps. The fast -9 V, 15 ps pulse is generated in a small Pulse Head which is attached to the main unit via a coaxial cable. This allows the 15 ps pulse to be connected directly to where it is needed, thus eliminating the risetime slowing effects of interconnecting coaxial cables.

The PSPL Model 4015B TDR Amplifier was designed as a companion unit to the Hewlett-Packard 54120, 54750 or 83480 series of 12-50 GHz digital sampling oscilloscopes. It is externally triggered by the HP oscilloscope's 200 mV, 35 ps risetime TDR pulse and then produces a much faster, 15 ps falltime, and much larger, -9 V pulse. The 4015B pulse can then be used for 10 ps resolution Time Domain Reflectometry (TDR) and Time Domain Transmission (TDT) measurements in the "Network" mode of the HP scope. Using the HP oscilloscope's built-in firmware "Normalization" (i.e. deconvolution and digital filtering) the 15 ps pulse can become a 10 ps test pulse.



10 PS TDR



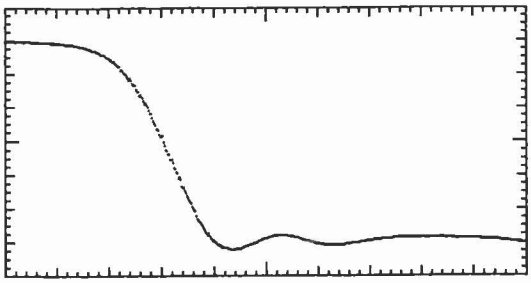
1.5 V/div. 10 ps/div.
Normalized 10 ps TDR Pulse

PSPL * P.O. BOX 44 * BOULDER, COLORADO 80306 * USA * tel (303) 443-1249 * fax (303) 447-2236 * 1/95

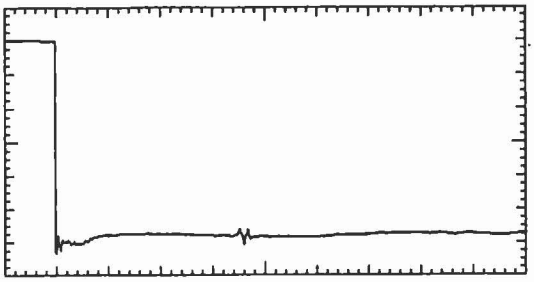
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PSPL MODEL 4015B TDR AMPLIFIER & PULSE GENERATOR



1.6 V/div. & 10 ps/div.



1.6 V/div & 1ns/div.

OUTPUT STEP PULSE PARAMETERS [1]

AMPLITUDE: [4]	9 Volts, ±1 V
POLARITY:	negative
BASELINE:	0 Volts
FALLTIME (10%-90%):	15 ps typical
(leading edge) [4]	20 ps maximum
DURATION:	10 ns
RISETIME (80%-20%):	250 ps
(trailing edge)	
PRECURSOR:	< ±1/2%
OVERSHOOT:	5%
PERTURBATIONS:	±5%, t < 1 ns
FLATNESS:	±2%, t > 1 ns
SPURIOUS PULSES:	±5%, t = 3.5 ns
IMPEDANCE:	50 Ohms
REFLECT. COEFF.:	< ±6%

EXTERNAL TRIGGER INPUT

IMPEDANCE:	50 Ohms, DC
COUPLING:	AC
SLOPE:	positive
AMPLITUDE:	200 mV to 1 V
TRIGGER SIGNAL TYPE:	pulse only
circuit works with 200mV TDR, ECL or TTL	
INPUT RISETIME:	< 3 ns max.
INPUT REP. RATE:	500 kHz max
MAX. INPUT:	1 V ptp pulse
	±2 V DC max.
KICKOUT PULSE:	0.5 V ptp
DELAY:	12 ns
JITTER (rms): [1]	1 ps, 1.5 ps max.

GENERAL FEATURES

CONNECTORS:	SMA, APC-3.5 on 4015RPH Pulse Head
AC POWER:	100, 117, 200, or 230 Vac, 50/60 Hz, 15 W (60 Hz)
DIMENSIONS:	3.8" x 8.4" x 10.3"
WEIGHT:	7 lbs, 10 lbs shipping
ACCESSORIES:	PSPL 4015RPH Pulse Head, 2 5015-12" SMA cables, power cord, demo video tape & instruction manual.
CALIBRATION:	Test report with waveforms included. NIST traceable.
WARRANTY:	One Year. See PSPL Terms of Sale for details. Exception, 30 days, one time, limited warranty on static sensitive internal 4050RPH Pulse Head and external 4015RPH Pulse Head.

NOTE [1]: These are typical performance parameters as measured into a 50 Ohm termination using an HP-54124A, 50 GHz, 9.4 ps risetime, digital sampling oscilloscope, an HP-8490D, 30dB, 50 GHz attenuator and a 3.5mm/2.4mm coaxial adapter. They are only guaranteed when max. and/or min. limits are given. Reported falltime is corrected for risetimes of oscilloscope and attenuator using root-difference-of-squares equation. 4015B externally triggered by 200 mV TDR pulse.

NOTE [2]: For additional details on use as a TDR pulse amplifier, see the PSPL Application Note AN 5-a and the 4015B demo video tape.

NOTE [3]: **<< CAUTION >>** The semiconductors in the external 4015RPH and internal 4050RPH Pulse Heads are fragile and susceptible to damage by static discharge. Use care when handling them. Always discharge cables and loads prior to connecting. The 4015RPH Pulse Head is designed to only work into a 50 Ohm load. It can be destroyed if operated into an open circuit or an impedance higher than 50 Ohms. These Pulse Heads can be damaged if an external voltage is applied. If a DC voltage is present in the external circuit, use a DC blocking capacitor on the output of the 4015RPH. Because these items are subject to damage by the user, they have a limited 30 day warranty. The PSPL warranty does not cover Pulse Heads damaged by operation into an open circuit or impedances higher than 50 Ohms.

NOTE [4]: OPTION: 4 VOLTS For safe operation into all load conditions ranging from 50 Ohms to either short or open circuits, PSPL recommends the customer consider purchasing the 4015B with the 4 V amplitude option. The pulse falltime specification is slightly degraded. The nominal falltime is 17.5 ps with a guaranteed upper maximum limit of 25 ps. All other specifications remain unchanged.

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