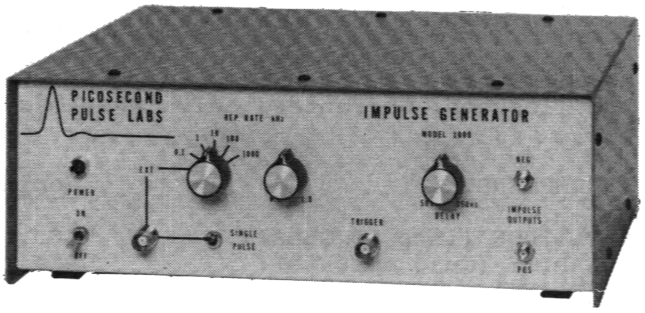
Picosecond Pulse Labs

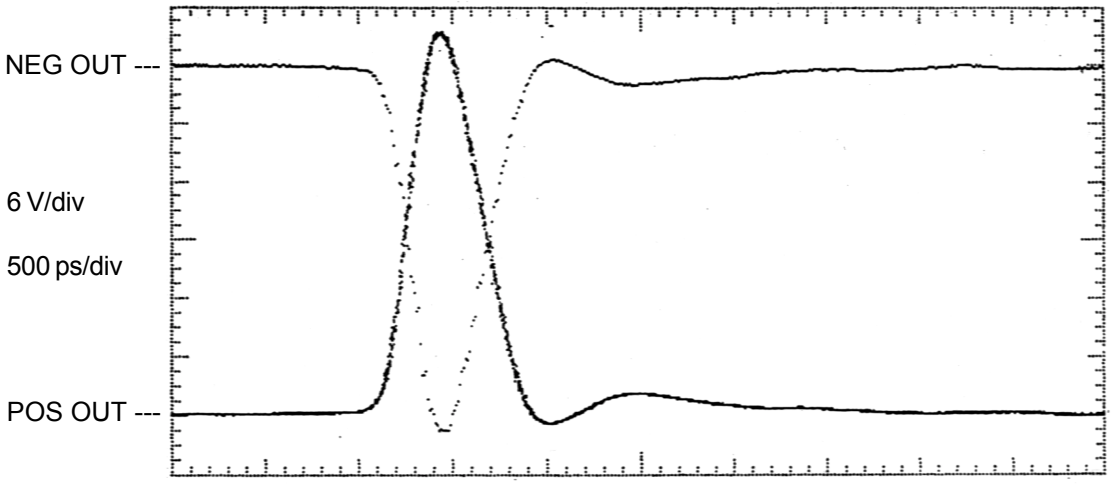
Model 1000D
Impulse Generator

- **Solid State**
- **90 dB μV/MHz Spectrum**
- **Broadband: to Beyond 1 GHz**
- **+/- 35 V Amplitude**
- **Dual Pos and Neg Outputs**
- **500 ps FWHM Duration**
- **1 MHz Max. Rep. Rate**



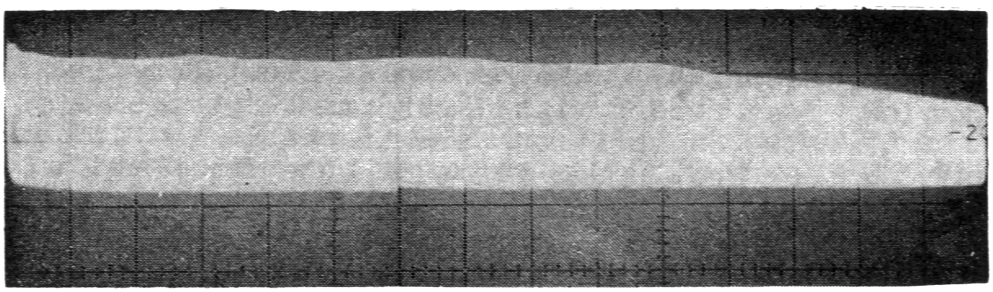
The Model 1000D Impulse Generator is a complete instrument in an all-metal, shielded cabinet with built-in power supplies, rep. rate clock, single pulse, ext. trigger input, trigger output, and adjustable delay. Two impulse outputs are provided with simultaneous positive and negative polarity impulses. There are many applications for the 1000D including:

- Spectrum Amplitude Calibrators for EMI measurements
- Laser Diode Drivers
- EMP simulators
- Impulse response testing of semiconductors, instruments or networks such as oscilloscopes and coax cables



Typical waveform measured by an HP-54121A, 17.5 ps digital sampling scope

10 dB/div
100 MHz/div
0 to 1.5 GHz
Ref. = 0 dBm
3 MHz BW



Typical spectrum of 1000D measured by an HP-8558 spectrum analyzer

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Parameters	
Amplitude into 50 Ω	35 V, 30 V min.
Polarity (dual outputs)	Positive and negative simultaneously
Baseline	0 V
Duration (FWHM, 50%)	500 ps, 350 ps min., 600 ps max.
Risetime (10% - 90%)	250 ps leading edge of pulse
Falltime (90% - 10%)	370 ps trailing edge of pulse
Spectrum Amplitude (2 x Vpk x FWHM)	90 dBμV/MHz
1st Spectrum Zero (1/FWHM)	2 GHz
Output Impedance	50 Ω nominal, 0 Ω at DC
Reflection Coefficient	< 35%

Trigger Output and Timing	
Amplitude	800 mV into 50 Ω
Risetime	2 ns
Duration	50-150 ns, equal to delay
Delay	50-150 ns, adjustable
Delay Jitter	< 7 ps rms typical (12 ps rms max.) at 60 ns delay
Repetition Rate	1 MHz to 10 Hz in 5 ranges with 0.1 to 1.0 vernier. Also single pulse and ext. trigger
Ext. Trigger Input Level	Input requires a TTL pulse of > 2 V. Triggers on (+) slope. R_{in} = 470 Ω.
Trigger In/Out Delay	80 ns min.
Internal jumper allows selection of external trigger slope and bypass of delay circuit with Trig In/Pulse out delay of 10 ns.	

General Specifications	
Controls	Power, Rep. Rate Range/Ext. Trig., Rep. Rate Vernier, Single Pulse, Delay
Connectors	SMA for + and - impulse out, BNC for trig in
Power Required	90-130 V, 180-250 V, 50-60 Hz, 15 VA (60 Hz), 23 VA (50 Hz)
Operating Environment	Indoors, 0 C to 50 C, < 80%rh
Safety Certifications	Conforms to EN-061010-1 (CE mark) UL-1244 and IEC-348. Safety class I. For lab use only by qualified personnel
EMI Certifications	Conforms to EU Directive 89/336/EEC EN55011 and EN50082-1, CE mark
Calibration	Test report with waveforms is furnished. NPL/NIST-traceable.
Warranty	One year. See Terms and Conditions of Sale for details.
Accessories Included	Power cord, test report, instruction manual, and video
Dimensions	4.4" x 12.2" x 9" (11.2 x 31 x 23 cm)
Weight	6 lbs (2.7 kg), 8 lbs (3.6 kg) shipping

Note
[1] Typical values as measured by an HP-54121A, 17.5 ps, digital sampling oscilloscope. Guaranteed only when max/min limits are given.