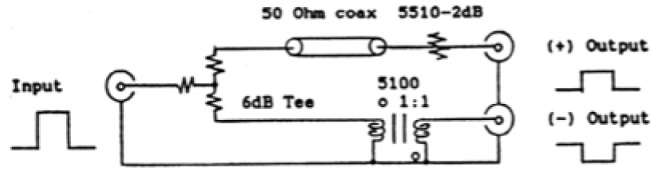# Tektronix®
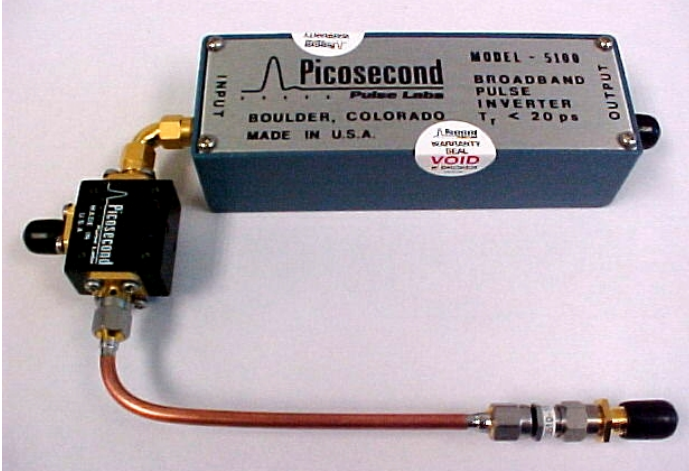
17 GHz Differential Pulse Splitter

## PSPL5315 Datasheet

The PSPL5315 BALUN is a broadband differential pulse splitter. A signal fed into the 50 Ω input is split equally into two 50 Ω outputs. One output is the same polarity as the input, while the other output is inverted in polarity. The PSPL5315 BALUN has a very fast 21 ps rise time and a bandwidth of 17 GHz. One application of the PSPL5315 is to provide push-pull, balanced drive signals for the deflection plates of ultra-wideband, traveling-wave oscilloscopes.

Typical performance

Insertion Loss: Input to (+) Output
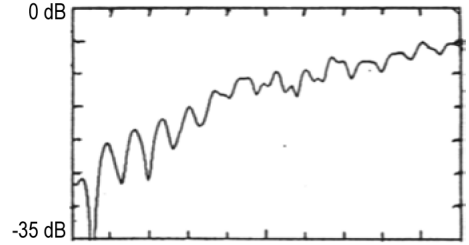1 dB/div and 2 GHz/div
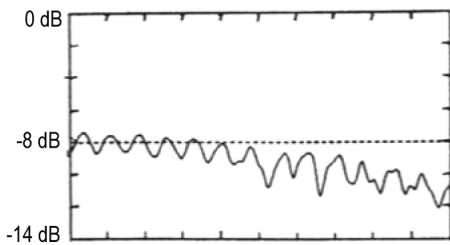
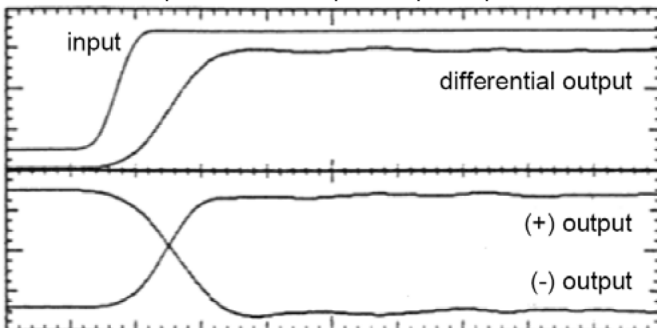**Insertion Loss: Input to (-) Output**
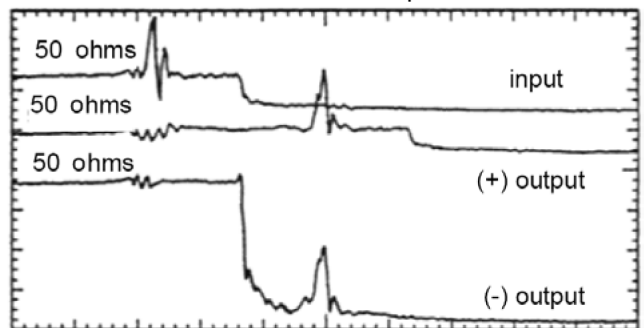1 dB/div and 2 GHz/div
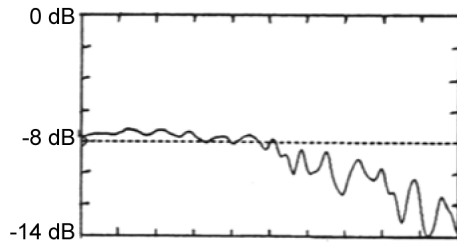
Return Loss
5 dB/div and 2 GHz/div

Transmission Response
to 10 ps rise time input step, 20 ps/div

**35 ps TDR**
5% rho/div and 500 ps/div

Specifications

Parameter [1]	Value
Rise time (10%-90%)	21 ps typical, 25 ps max.
Bandwidth (-3 dB)	17 GHz typical
Low Frequency Cutoff	200 kHz (-3 dB)
Insertion Loss	8 dB, nominal
Impedance	50 Ω
Refl. Coeff. (35 ps TDR) Input (+) output (-) input	<15% ptp, t < 150 ps -4%, t > 1 ns -4%, t > 3 ns -15%, t > 2 ns
Return Loss	0.1 < f < 2 GHz, RL > 20 dB -2.5 dB/GHz*f (GHz) 2 < f < 10 GHz, RL > 15 dB -1.25 dB/GHz*f (GHz)
Sag Time Constant	800 ns (1/e)
Delay	0.9 ns
Diff. Delay Balance (step response)	±2 ps max.
Diff. Balance (step response)	< 0.5 dB, t < 500 ps; 1 dB, t > 1 ns
Max. Input	0.75 Watts
Connectors	SMA jacks (f)
Weight	0.5 lbs. (0.2 kg)
Dimensions	6 in x 3.7 in x 1.1 in (15 cm x 9.4 cm x 2.8 cm)
Warranty	One year

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[1] All parameters listed are typical unless max/min guaranteed limits are provided. Due to internal reflections, the PSPL5315 is NOT recommended for use with gigabit logic signals nor in a differential network analyzer.

Mechanical dimensions
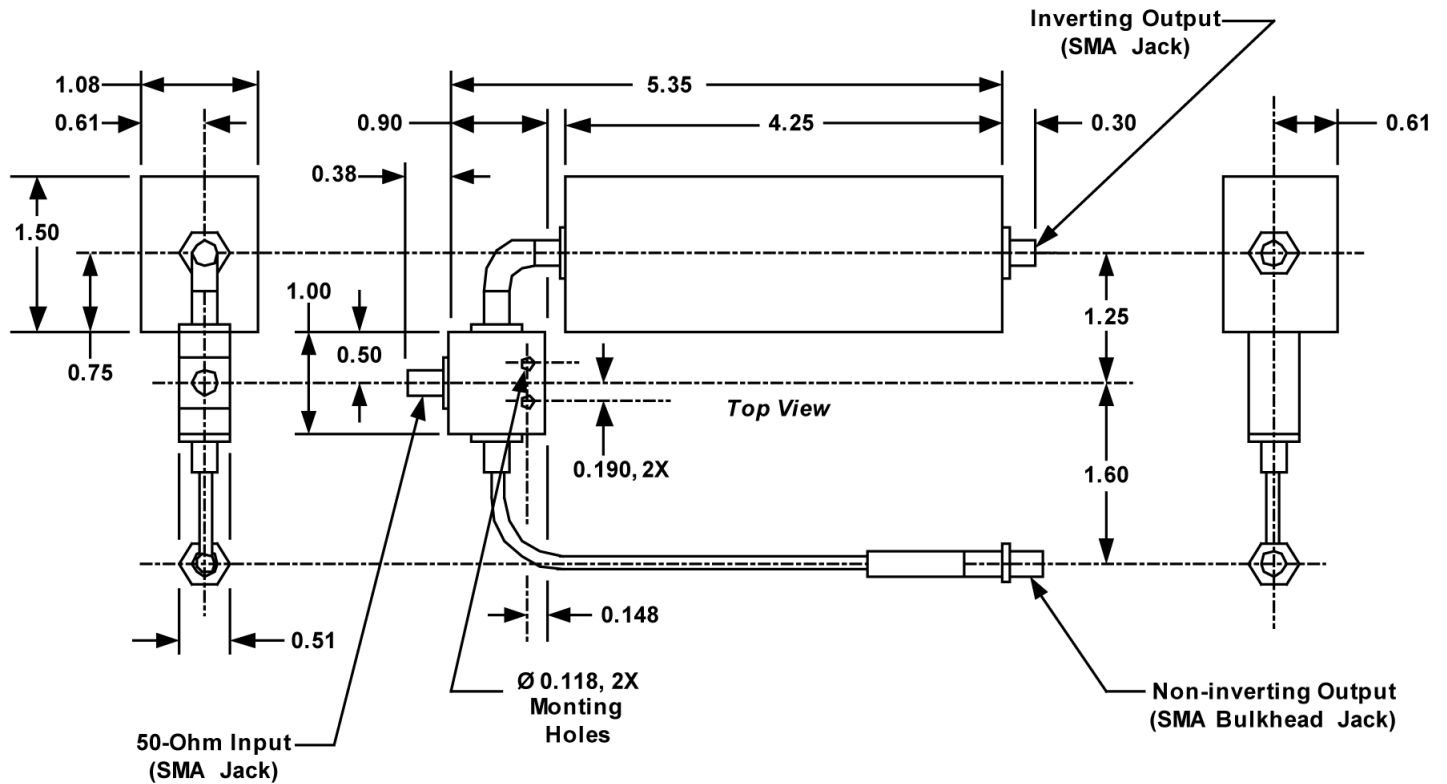
Notes:
All dimensions in inches
Not drawn to scale
The end of the non-inverting output may not lie in precisely the same plane as the end of the inverting output. The non-inverting line length is adjusted so that the output phases differ by 180°.

Ordering information

Models

PSPL5315	Diff pulse splitter-Balun, SMA J-J-J

Datasheet

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.

18 Dec 2014   1PW-30551-1

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