

Test & Measurement Components

Component Selection Guide

Amplifiers & Drivers

www.tek.com/components/amplifiers-and-drivers

Model	Bandwidth	Gain	Output Voltage	Power Dissipation	Polarity
PSPL5828A	14 GHz	10 dB	2.5 Vp-p	0.7 W	Inverting
PSPL5840B	13.5 GHz	21 dB	2.5 Vp-p	1.3 W	Non-inverting
PSPL5865	12.5 Gb/s	26 dB	8.0 Vp-p	2.3 W	Non-inverting
PSPL5866	10 GHz	26 dB	4.0 Vp-p Linear	1.7 W	Non-inverting
PSPL5867	15 GHz	15 dB	3.0 Vp-p	1.0 W	Inverting
PSPL5868	10.7 Gb/s	28.5 dB	11 Vp-p	3 W	Non-inverting
PSPL5882	35 GHz	16 dB	2.7 Vp-p	1.3 W	Non-inverting

Tektronix amplifiers and drivers are designed to provide the best possible time domain response and are ideal for applications requiring broadband frequency response and high speed performance.

The selection provides a complete line of amplifiers including a 12.5 Gb/s lithium niobate driver amplifier and a series of broadband linear amplifiers with bandwidths up to 45 GHz.

Attenuators

www.tek.com/components/attenuator

Model	Bandwidth	Risetime	RF Connector	Attenuation
PSPL5510	DC – 18GHz	8 ps	SMA	1, 2, 3, 6, 10, 12, 14, 20 dB
PSPL5510K	DC – 40GHz	5 ps	2.92mm	3, 6, 10, 20 dB
PSPL5510V	DC – 60GHz	5 ps	2.4mm	3, 6, 10, 20 dB

Tektronix offers attenuators with SMA connectors for 18 GHz applications, 2.92 mm connectors for 40 GHz applications, and 2.4 mm connectors for 60 GHz applications.

The PSPL5510 Series of attenuators address a need of customers for whom specified frequency-domain response only is not enough. For time domain measurements, it is important to know the transient response of attenuators used in a test set-up.

DC Blocks

www.tek.com/components/dc-blocks

Model	Bandwidth	Risetime	Low Freq. -3 dB	Capacitance	Max DC Voltage
PSPL5500A	>26 GHz	10 ps	80 kHz	0.02 uF	50 V
PSPL5501A	>26 GHz	10 ps	7 kHz	0.22 uF	50 V
PSPL5508	>26 GHz	<8 ps	0.7 kHz	2.2 uF	16 V
PSPL5509	50 GHz	5 ps	7 kHz	0.22 uF	16 V

Tektronix DC blocks are high performance ultra-broadband components used for isolating DC voltages while allowing data signals to pass through unaffected.

The PSPL5500 Series of DC Blocks are extremely broadband coaxial blocking capacitors. Due to the coaxial construction, excellent microwave performance and transient response is achieved. Large capacitance values provide low frequency response down to the kHz range.

Baluns & Transformers

<http://www.tek.com/components/baluns-and-transformers>

Model	Name	Low Freq. -3 dB	High Freq. -3 dB	Risetime
PSPL5100	Inverting Transformer	200 kHz	>20 GHz	15 ps
PSPL5310R	Phase-Matched Balun	4 MHz	6.5 GHz	54 ps
PSPL5315A	Balun	200 kHz	17 GHz	21 ps
PSPL5320B	Balun	5 kHz	11 GHz	31 ps

Tektronix offers a variety of inverting transformers and differential pulse splitters (baluns). These baluns transform an unbalanced 50 ohm input into a balanced 100 ohm differential output, and are made of passive components and are therefore bi-directional. Tektronix baluns are an effective means for using single-ended test equipment (VNA's, pattern generators) for taking differential measurements.

Bias Tees

www.tek.com/components/bias-tees

Model	Bandwidth	Risetime	Low Freq. -3 dB	Max DC Voltage	Max DC Current
PSPL5530B	12.5 GHz	35 ps	20 KHz	200 V	10 mA
PSPL5531	10 GHz	35 ps	750 KHz	1.5 KV	20 mA
PSPL5541A	>26 GHz	8 ps	80 kHz	50 V	100 mA
PSPL5542	50 GHz	7 ps	10 kHz	16 V	100 mA
PSPL5542K	40 GHz	7 ps	12 KHz	16 V	100 mA
PSPL5543	50 GHz	7 ps	20 kHz	100 V	500 mA
PSPL5544	40 GHz	8 ps	50 kHz	100 V	2 A
PSPL5545	20 GHz	12 ps	65 kHz	50 V	500 mA
PSPL5546	7 GHz	45 ps	3.5 KHz	50 V	500 mA
PSPL5547	15 GHz	23 ps	5 kHz	50 V	500 mA
PSPL5550B	18 GHz	20 ps	100 kHz	50 V	500 mA
PSPL5575A	12 GHz	30 ps	10 kHz	50 V	500 mA
PSPL5580	15 GHz	28 ps	10 kHz	50 V	1 or 2 Amp
PSPL5585	18 GHz	N/A	2 GHz	100 V	6 Amps
PSPL5587	2 GHz	N/A	200 MHz	100 V	6 Amps
PSPL5589	2.8 GHz	N/A	300 MHz	100 V	7.0 Amps

Tektronix bias tees are used to supply an active device like an amplifier, laser diode, photodiode, or optical modulator with a bias current or bias voltage while allowing high speed, ultra-broadband signals to pass through with minimum signal degradation.

These bias tees have low insertion loss, very broad frequency response, and exceptional time domain performance.

Low-Pass Filters

www.tek.com/components/low-pass-filters

Model	Low Freq. -3 dB	Risetime	Return Loss	RF Connector
PSPL5915	35MHz – 10GHz 36ps – 10ns	~0.35/BW	>15dB @ f _o	SMA
PSPL5933	7.46GHz or 8GHz	~0.35/BW	>12 dB	2.4mm or SMA
PSPL5935	10GHz – 28GHz	33 ps to 12.6 ps	>12dB > 9 dB	2.92 or 2.4mm

Tektronix designs low-pass (risetime) filters that produce very clean transient responses. Risetime filters are also sometimes called Transition Time Converters or TTC's. These filters are based on a proprietary, absorption design that has frequency responses that are similar to Bessel-Thomson (B-T) filters, but provide superior transient response.

Tektronix offers the most popular filters for Gigabit Ethernet, Fibre Channel, and SONET data rates up to 40 Gb/s

Power Dividers and Pick-off Tees

www.tek.com/components/power-dividers-and-pick-off-tees

Model	Type	Bandwidth	Risetime	Output Ratios	RF Connector
PSPL5331	Power Divider	18 GHz	17 ps	6 dB, 6 dB	SMA
PSPL5333	Power Divider	25 GHz	15 ps	6 dB, 6 dB	SMA
PSPL5334	Power 1:4 Divider	25 GHz	15 ps	12 dB (4x)	SMA
PSPL5336	Splitter	20 GHz	20 ps	6 dB, 6 dB	SMA
PSPL5340	Pick-Off	8 GHz	50 ps	10 dB, 3.3 dB	SMA
PSPL5350	Divider	40/50 GHz	8 ps	6 dB, 6 dB	2.92 mm or 2.4 mm
PSPL5361	Pick-Off	40 GHz	7 ps	14 dB, 1.8 dB	2.92 mm or 2.4 mm
PSPL5370	Pick-Off	>25 GHz	<17 ps	14 dB, 0.8 dB / 20 dB, 0.4 dB	SMA
PSPL5372	Z-Matched Pick-off	>26GHz	15 ps	14 dB, 2.0 dB	SMA

Tektronix Power Dividers are resistive tees that have excellent performance and frequency response from DC to as high as 50 GHz. Models PSPL5331, PSPL5333, and PSPL5350 split the signal into two equal replicas of the input signal. Both outputs are 6 dB down from the input power.

Several versions of Pick-Off Tees are available. These components produce a small replica of a signal at a pick-off port, at ratios of 10, 14, or 20 dB down from the input signal level.

Impulse Forming Networks

<http://www.tek.com/components/impulse-forming-networks>

Model	Transfer Function	T _c	Impedance	RF Connector
PSPL5208	$V_{out}=T_c \cdot dV_{in}/dt$	8 ps	50 ± 2 Ω	2.92 mm
PSPL5210	$V_{out}=T_c \cdot dV_{in}/dt$	13 ps	50 ± 2 Ω	SMA

Impulse Forming Networks (IFN) produce an impulse from a step function or pulse and create a monocycle from an impulse. The output is essentially the derivative of the input signal. Refer to the transfer function related to the IFN.

Need more information?
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