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
PSPL8001	12.5 Gb/s	26 dB	8.0 Vp-p	2.3 W	Non-inverting
PSPL8003	15 GHz	15 dB	3.0 Vp-p	1.0 W	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	1.85mm	3, 6, 10, 20 dB

Tektronix offers attenuators with SMA connectors for 18 GHz applications, 2.92 mm connectors for 40 GHz applications, and 1.85 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.

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
PSPL5315	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.

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.

Need more information?
visit **www.tek.com/components**

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	2 Amps
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	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

Impulse Forming Networks

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

Model	Transfer Function	T_c	Impedance	RF Connector
PSPL5208	$V_{out}=T_c*dV_{in}/dt$	8 ps	50 ± 2 Ω	2.92 mm
PSPL5210	$V_{out}=T_c*dV_{in}/dt$	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.

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
PSPL5335	Amplified 1:4 Clock Splitter	35 GHz	10 ps	0 dB	2.92 mm
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.

The output ratio in the table refers to the power ratio of the pick-off port to the input signal, and the power ratio of the through-line to the input signal respectively.

Tektronix®

Component Ordering Information

Amplifiers & Drivers

product	description	connector size	connector configuration
PSPL5828A	AMPLIFIER, 14GHz, 10dB GAIN	SMA	jack (F) to jack (F)
PSPL5840B	AMPLIFIER, 13.5GHz, 21dB GAIN	SMA	jack (F) to jack (F)
PSPL5865	DRIVER AMPLIFIER, 12.5 GB/S	SMA	jack (F) to jack (F)
PSPL5866	AMPLIFIER, 25dB GAIN, 2.5kHz-10GHz	SMA	jack (F) to jack (F)
PSPL5867	LINEAR AMPLIFIER, 15 GHz	*must choose* one *connector option:*	
opt. SMAJJ	J-J SMA connectors	SMA	jack (F) to jack (F)
opt. SMAPP	P-P SMA connectors	SMA	plug (M) to plug (M)
PSPL5868	DRIVER AMPLIFIER, 10.7 Gb/s	SMA	jack (F) to jack (F)
PSPL5882	AMPLIFIER, 40-45GHz, 16dB GAIN		
	required, must choose one *connector option:*		
opt. 240JJ	J-J 2.4mm connectors	2.4mm	jack (F) to jack (F)
opt. 240JP	J-P 2.4mm connectors	2.4mm	jack (F) to plug (M)
opt. 292JJ	J-J 2.92mm connectors	2.92mm	jack (F) to jack (F)
PSPL8001	DRIVER AMPLIFIER, 12.5Gb/s, LABware	SMA	jack (F) to jack (F)
PSPL8003	LINEAR AMPLIFIER, 15GHz, LABware	SMA	jack (F) to jack (F)

Attenuators

product	description	connector size	connector configuration
PSPL5510	ATTENUATOR, 18GHz	SMA	jack (F) to plug (M)
	required, must choose one *attenuation option:*		
opt. 1DB	1dB attenuation		
opt. 2DB	2dB attenuation		
opt. 3DB	3dB attenuation		
opt. 6DB	6dB attenuation		
opt. 10DB	10dB attenuation		
opt. 12DB	12dB attenuation		
opt. 14DB	14dB attenuation		
opt. 20DB	20dB attenuation		
PSPL5510K	ATTENUATOR, 40GHz	2.92mm	jack (F) to plug (M)
	required, must choose one *attenuation option:*		
opt. 3DB	3dB attenuation		
opt. 6DB	6dB attenuation		
opt. 10DB	10dB attenuation		
opt. 20DB	20dB attenuation		
PSPL5510V	ATTENUATOR, 60GHz	1.85mm	jack (F) to plug (M)
	required, must choose one *attenuation option:*		
opt. 3DB	3dB attenuation		
opt. 6DB	6dB attenuation		
opt. 10DB	10dB attenuation		
opt. 20DB	20dB attenuation		

Baluns & Transformers

product	description	connector size	connector configuration
PSPL5100	INVERTING TRANSFORMER	SMA	jack (F), jack (F), jack (F)
PSPL5310R	PHASE-MATCHED BALUN	SMA	jack (F), jack (F), jack (F)
PSPL5315	DIFF PULSE SPLITTER-BALUN	SMA	jack (F), jack (F), jack (F)
PSPL5320B	DIFF PULSE SPLITTER-BALUN	SMA	jack (F), jack (F), jack (F)

Impulse Forming Networks

product	description	connector size	connector configuration
PSPL5208	IMPULSE FORMING NETWORK	2.92mm	jack (F), jack (F), jack (F)
PSPL5210	IMPULSE FORMING NETWORK	SMA	jack (F), jack (F), jack (F)

Bias Tees

product	description	connector size	connector configuration
PSPL5530B	BIAS TEE, 12.5GHz, 200V	SMA	jack (F), jack (F), jack (F)
PSPL5531	BIAS TEE, 10GHz, 1.5kV	SHV	jack (F) to jack (F)
PSPL5541A	BIAS TEE, 26GHz, 50V	SMA	jack (F), jack (F), jack (F)
PSPL5542	BIAS TEE, 50GHz, 16V	*must choose* one *connector option:*	
opt. 240JJ	2.4mm connectors	2.4mm	jack (F) to jack (F)
opt. 292JJ	2.92mm connectors	2.92mm	jack (F) to jack (F)
opt. 292SMB	2.92mm connectors w/ SMB DC port	2.92mm	jack (F) to jack (F)
PSPL5542K	KELVIN BIAS TEE	2.92mm	jack (F) to jack (F)
PSPL5543	BIAS TEE, 100V, 500mA	*must choose* one *connector option:*	
opt. 240JJ	2.4mm connectors	2.4mm	jack (F) to jack (F)
opt. 292JJ	2.92mm connectors	2.92mm	jack (F) to jack (F)
PSPL5544	BIAS TEE, 100V, 2A	*must choose* one *connector option:*	
opt. 240JJ	2.4mm connectors	2.4mm	jack (F) to jack (F)
opt. 292JJ	2.92mm connectors	2.92mm	jack (F) to jack (F)
opt. 292JP	2.92mm connectors	2.92mm	jack (F) to jack (F)
PSPL5545	BIAS TEE, 20GHz, 50V	SMA	jack (F) to jack (F)
PSPL5546	BIAS TEE, 7GHz, 50V	SMA	jack (F) to jack (F)
PSPL5547	BIAS TEE, 15GHz, 50V	SMA	jack (F) to jack (F)
PSPL5550B	BIAS TEE, 18GHz, 50V	SMA	jack (F), jack (F), jack (F)
PSPL5575A	BIAS TEE, 12GHz, 50V	SMA	jack (F), jack (F), jack (F)
PSPL5580	BIAS TEE, 15GHz, 50V, 2A	SMA	jack (F) to jack (F)
PSPL5585	BIAS TEE, 2-18GHz, 100V, 6A	SMA	jack (F) to jack (F)
PSPL5587	BIAS TEE, .2-2GHz, 100V, 6A	SMA	jack (F) to jack (F)
PSPL5589	BIAS TEE, .3-2.86GHz, 100V, 7A	SMA	jack (F) to jack (F)

DC Blocks

product	description	connector size	connector configuration
PSPL5500A	DC BLOCK, 50V	SMA	jack (F) to plug (M)
PSPL5501A	DC BLOCK, 50V	SMA	jack (F) to plug (M)
PSPL5508	DC BLOCK, 16V	SMA	jack (F) to plug (M)
PSPL5509	DC BLOCK	*must choose* one *connector option:*	
opt. 240JP	J-P 2.4mm connectors	2.4mm	jack (F) to plug (M)
opt. 292JP	J-P 2.92mm connectors	2.92mm	jack (F) to plug (M)
	and, required, must choose one *voltage option:*		
opt. 16V	16V blocking voltage		
opt. 50V	50V blocking voltage		

Pick-off Tees

product	description	connector size	connector configuration
PSPL5340	PICK-OFF TEE, 10DB	SMA	jack (F), jack (F), jack (F)
PSPL5361	PICKOFF TEE, 14dB (5X)	*must choose* one *connector option:*	
opt. 240JJJ	J-J-J 2.4mm connectors	2.4mm	jack (F), jack (F), jack (F)
opt. 240JPJ	J-P-J 2.4mm connectors	2.4mm	jack (F), plug (M), jack (F)
opt. 292JJJ	J-J-J 2.92mm connectors	2.92mm	jack (F), jack (F), jack (F)
PSPL5370	PICKOFF TEE	SMA	jack (F), jack (F), jack (F)
opt. 14DB	14dB pick-off		
opt. 20DB	20dB pick-off		
PSPL5372	PICK-OFF TEE, 2 PORT Z-MATCHED	SMA	jack (F), jack (F), jack (F)

Power Dividers

product	description	connector size	connector configuration
PSPL5331	POWER DIVIDER, 6dB	SMA	jack (F) all ports
PSPL5333	POWER DIVIDER, 6dB	SMA	jack (F) all ports
PSPL5334	QUAD DIVIDER, 12dB	SMA	jack (F) all ports
PSPL5335	AMPLIFIED 1:4 CLOCK SPLITTER	2.92mm	jack (F) all ports
PSPL5336	POWER SPLITTER, 6DB	SMA	jack (F) all ports
PSPL5350	POWER DIVIDER, 6dB	*must choose* one *connector option:*	
opt. 240JJJ	J-J-J 2.4mm connectors	2.4mm	jack (F) all ports
opt. 292JJJ	J-J-J 2.92mm connectors	2.92mm	jack (F) all ports
PSPL5380	PAM-4 KIT	1.85mm in 2.4mm out	jack (F) all ports

Low-Pass Filters

product	description	connector size	connector configuration
PSPL5915	LOW PASS FILTER		
	required, must choose one *filter option:*		
opt. 1GHZ	1GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 1P5GHZ	1.5GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 1P59GHZ	1.59GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 1P87GHZ	1.87GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 10GHZ	10GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 3GHZ	3GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 3P19GHZ	3.19GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 5GHZ	5GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 6GHZ	6GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 6P37GHZ	6.37GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 7P46GHZ	7.46GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 7P73GHZ	7.73GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 220MHZ	220MHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 35MHZ	35MHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 467MHZ	467MHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 700MHZ	700MHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 797MHZ	797MHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 1NS	1ns risetime	SMA	jack (F) to plug (M)
opt. 10NS	10ns risetime	SMA	jack (F) to plug (M)
opt. 2NS	2ns risetime	SMA	jack (F) to plug (M)
opt. 5NS	5ns risetime	SMA	jack (F) to plug (M)
opt. 100PS	100ps risetime	SMA	jack (F) to plug (M)
opt. 120PS	120ps risetime	SMA	jack (F) to plug (M)
opt. 125PS	125ps risetime	SMA	jack (F) to plug (M)
opt. 130PS	130ps risetime	SMA	jack (F) to plug (M)
opt. 150PS	150ps risetime	SMA	jack (F) to plug (M)
opt. 175PS	175ps risetime	SMA	jack (F) to plug (M)
opt. 200PS	200ps risetime	SMA	jack (F) to plug (M)
opt. 220PS	220ps risetime	SMA	jack (F) to plug (M)
opt. 240PS	240ps risetime	SMA	jack (F) to plug (M)
opt. 250PS	250ps risetime	SMA	jack (F) to plug (M)
opt. 36PS	36ps risetime	SMA	jack (F) to plug (M)
opt. 430PS	430ps risetime	SMA	jack (F) to plug (M)
opt. 45PS	45ps risetime	SMA	jack (F) to plug (M)
opt. 500PS	500ps risetime	SMA	jack (F) to plug (M)
opt. 60PS	60ps risetime	SMA	jack (F) to plug (M)
opt. 64PS	64ps risetime	SMA	jack (F) to plug (M)
opt. 900PS	900ps risetime	SMA	jack (F) to plug (M)
PSPL5933	LOW PASS FLAT GROUP FILTER		
	required, must choose one *filter option:*		
opt. 7P46GHZ	7.46GHz 3dB frequency	SMA	jack (F) to plug (M)
opt. 8GHZ	8GHz 3dB frequency	SMA	jack (F) to plug (M)
PSPL5935	LOW PASS FILTER	*must choose* one *connector option:*	
opt. 240JP	J-P 2.4mm connectors	2.4mm	jack (F) to plug (M)
opt. 292JP	J-P 2.92mm connectors	2.92mm	jack (F) to plug (M)
	required, must choose one *filter option:*		
opt. 10GHZ	10GHz 3dB frequency		
opt. 12P5GHZ	12.5GHz 3dB frequency		
opt. 15GHZ	15GHz 3dB frequency		
opt. 17P5GHZ	17.5GHz 3dB frequency		
opt. 20GHZ	20GHz 3dB frequency		
opt. 22P5GHZ	22.5GHz 3dB frequency		
opt. 25GHZ	25GHz 3dB frequency		
opt. 28GHZ	28GHz 3dB frequency		
opt. 20PS	20ps risetime		

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