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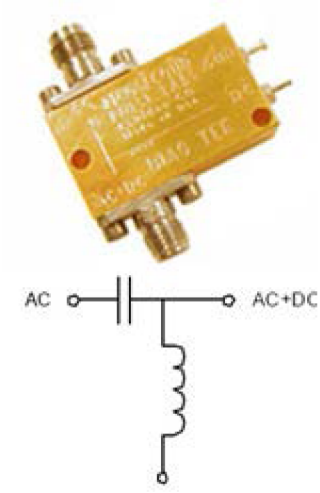
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Find the *Tektronix / Picosecond Pulse Labs 5542-202* at our website: *Click HERE*

Ultra-Broadband Bias Tee

PSPL5542 Datasheet



The PSPL5542 is an ultra-broadband, coaxial bias insertion tee and DC blocking capacitor that passes ultra-fast pulses with very low waveform distortion. Its rise time is only 7 ps, and its frequency response is flat over many decades from 10 kHz to beyond 50 GHz. It is available with either 2.92 mm (40 GHz) or 2.4 mm (50 GHz) connectors. Its small package makes this bias tee ideal for 40 Gbit data systems as well as broadband RF and microwave applications.

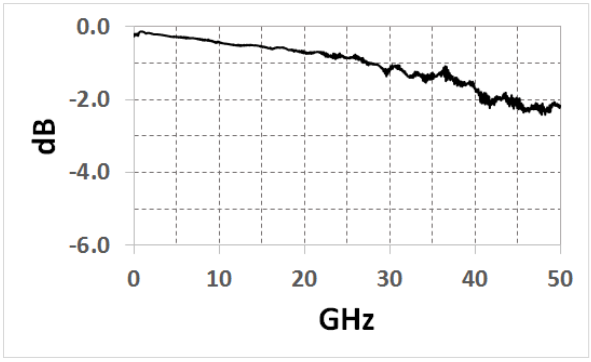
Key performance specifications

- 10 kHz to > 50 GHz
- 7 ps rise time
- 16 V, 100 mA
- Available with 2.92 mm or 2.4 mm connectors

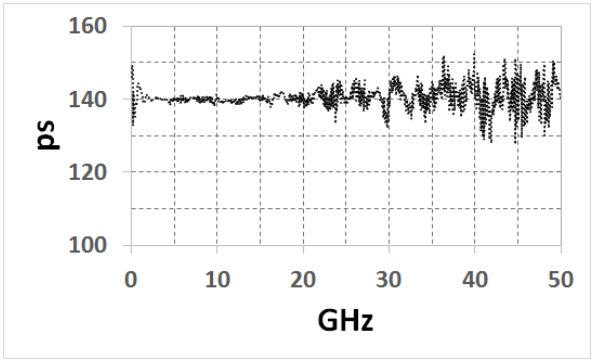
Typical performance

The following figures show the linear sweep from 0.04 to 50 GHz; the AC connector is the Input (port 1) and the AC + DC connector is the output (port 2).

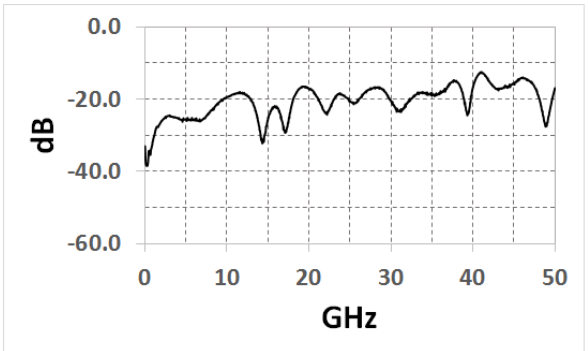
Insertion Loss



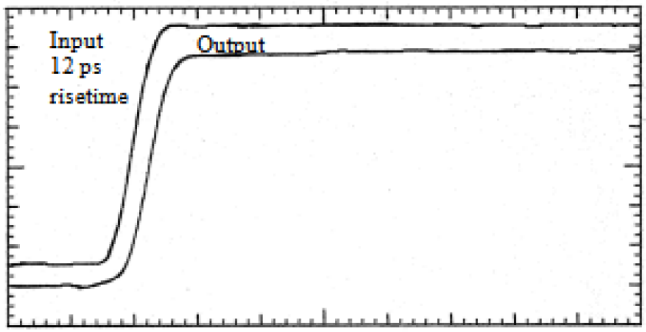
Group Delay



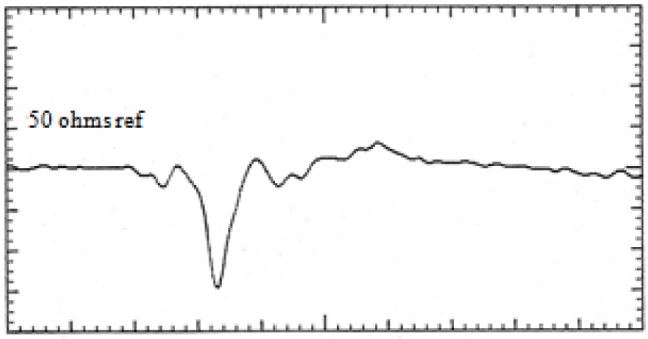
Return Loss



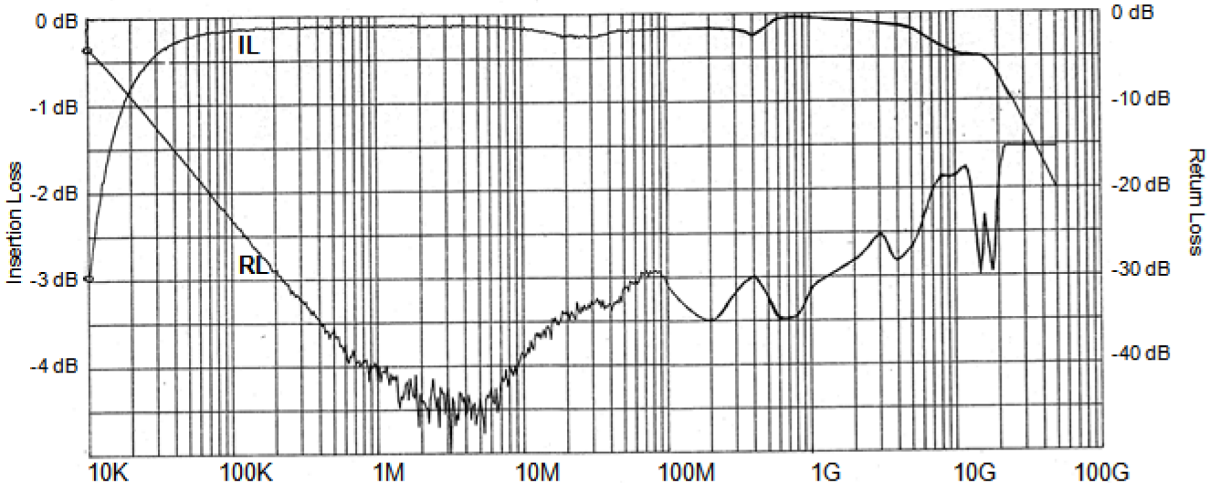
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Step Response, 20 ps/div



2% rho/div, 100 ps/div; 25 ps TDR of AC input port



Log sweep from 10 kHz to 50 GHz. Insertion loss scale is 0.5 dB/div. Return loss is 5 dB/div.

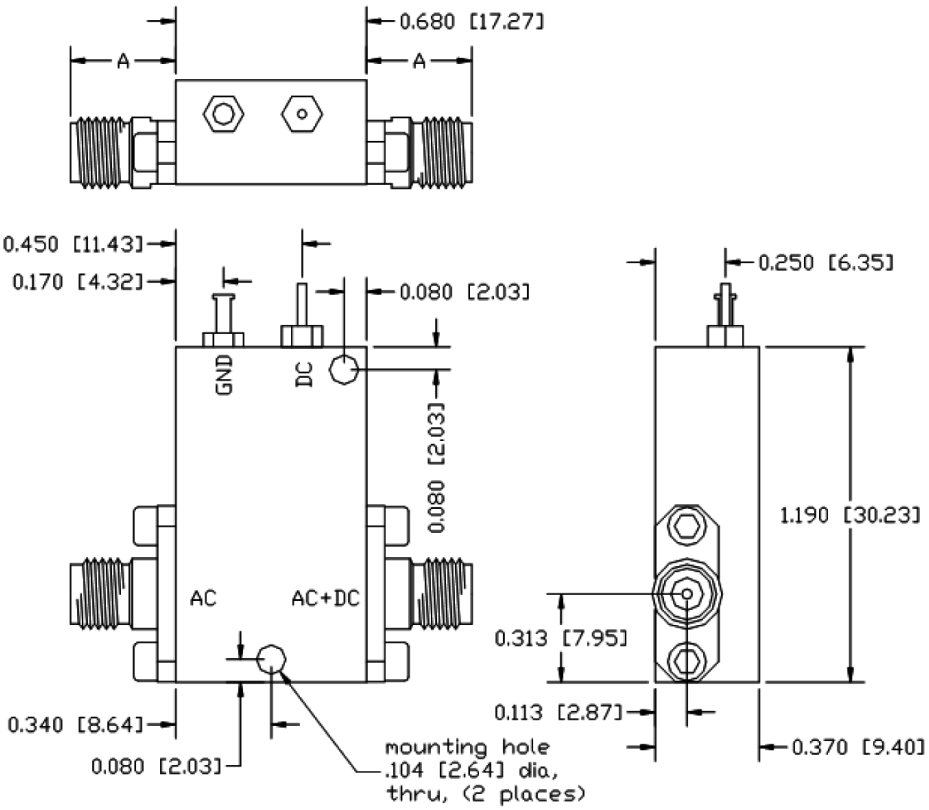
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Specifications

Parameter	Symbol	Units	Minimum	Typical	Maximum	Comments
Impedance	Z	ohms		50		
Upper 3 dB frequency	$f_{c,h}$	GHz	40 50			2.92 mm option 2.4 mm option
Lower 3 dB frequency	$f_{c,l}$	kHz		10		
Rise time	t_r	ps		7		10 – 90%
Insertion loss (See S_{21} plot)	S_{21}	dB		2 at 40 GHz 2 at 50 GHz		2.92 mm option 2.4 mm option
Return loss (See S_{11} plot)	S_{11}	dB				See plot for limits
DC voltage	V	V			16	
DC current	I	mA			100	DC port
Capacitance	C	µF		0.22		
Inductance	L	mH		1.5		DC port
Resistance	R	ohms		5.6		DC port
RF power	P	W			5	Avg. f < 10 GHz
Isolation	S_{13}	dB	50			f > 100 MHz AC port to DC port
DC path bandwidth				8 kHz		
Delay	Td	ps		140		AC to AC+DC port
Warranty	One year					

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Mechanical dimensions



Connector Type	Dimension A female
2.92mm	.375 [9.53]
2.4mm	.430 [10.92]

All dimensions in inches and [millimeters]
Tolerance = ±.005 inches [0.13mm]

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Ordering information

Models

PSPL5542	BIAS TEE, 50 GHz, 16 V

Options

PSPL5542 240JJ	2.4 mm jacks (f) on RF ports, solder pin on DC port
PSPL5542 292JJ	2.92 mm jacks (f) on RF ports, solder pin on DC port
PSPL5542 292SMB	2.92 mm plug (m) on AC port, jack (f) on AC+DC port, SMB on DC port

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18 Jul 2016 1PW-30569-2

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