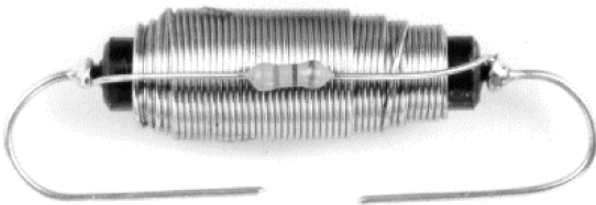
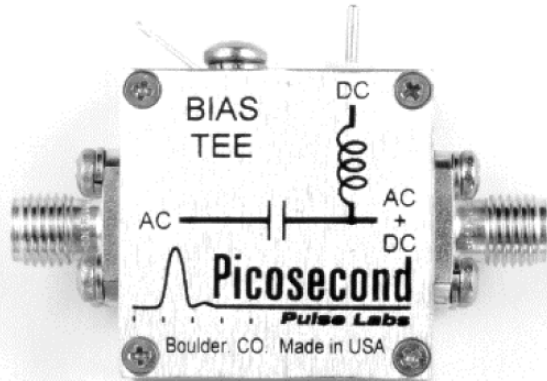


# 15 GHz Bias Tee

## PSPL5547 Datasheet

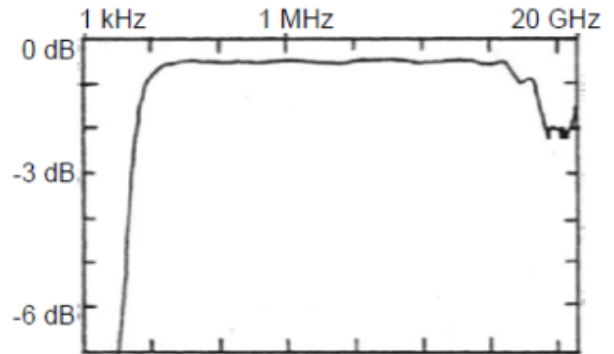


The PSPL5547 is a broadband, coaxial bias insertion tee and DC blocking capacitor. It was designed to have a very low cutoff frequency of only 5 kHz. It passes fast rise pulses with a minimum of waveform distortion. Its rise time is 23 ps. The frequency response is very flat, and the -3 dB bandwidth extends from 5 kHz to 15 GHz. The PSPL5547 is supplied with a 1 mH choke and terminal strip for connection to the DC bias.

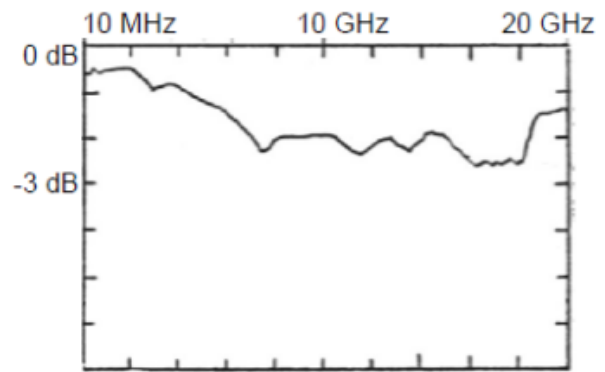
### Key performance specifications

- 5 kHz to 15 GHz
- 23 ps rise time
- 50 V, 500 mA

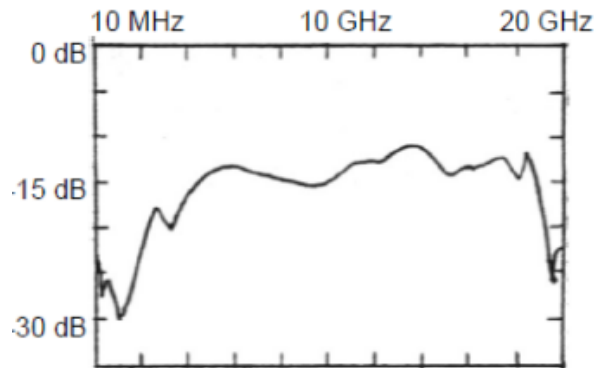
### Typical performance



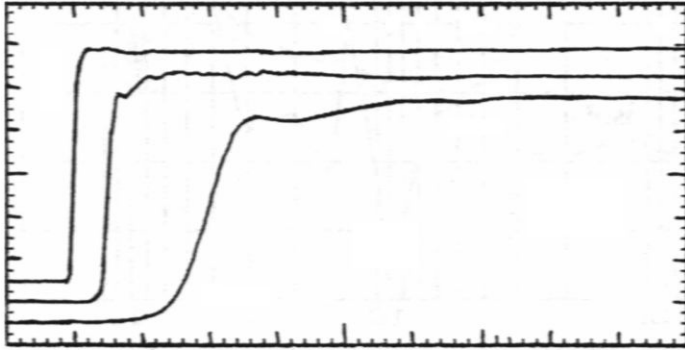
1 dB/div log plot to 20 GHz Insertion Loss



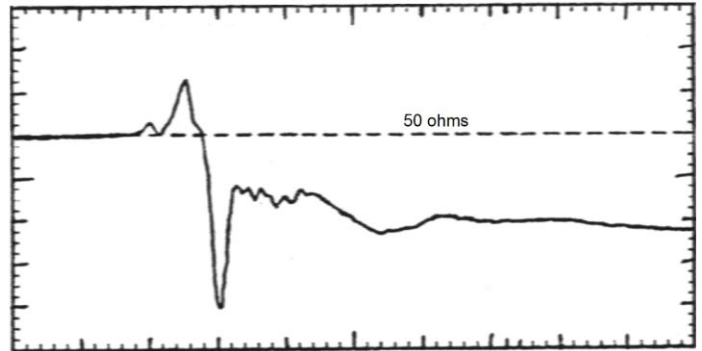
1 dB/div log plot to 20 GHz Insertion Loss



5 dB/div log plot to 20 GHz Return Loss



Top to bottom: 500 ps/div, 100 ps/div, and 20 ps/div. Response to 15 ps rise time input step



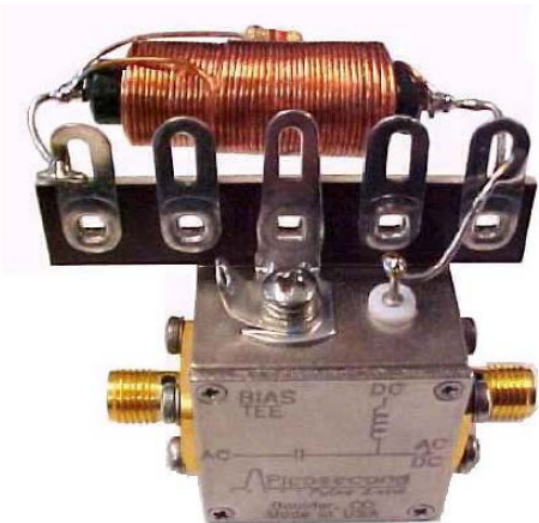
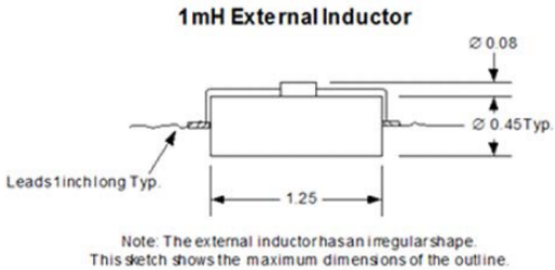
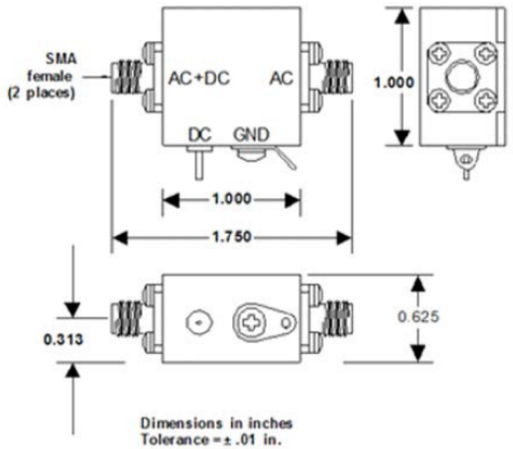
2.5% rho/div and 200 ps/div. 35 ps TDR of AC port

## Specifications

Parameter	Symbol	Units	Minimum	Typical	Maximum	Comments
Impedance	Z	ohms		50		
Upper 3 dB frequency	$f_{c,h}$	GHz	10	>15		
Lower 3 dB frequency	$f_{c,l}$	kHz		5		12 kHz w/o inductor
Rise time	$t_r$	ps		23	35	10 – 90%
Insertion loss	$S_{21}$	dB		0.5		
Input (AC) Return Loss	$S_{11}$	dB		23		f = 100 MHz
Ref. Coefficient (35 ps TDR)	$\Gamma$	%		-5		t > 200 ps
DC voltage	V	V			50	
DC current	I	mA			500	
Capacitance	C	$\mu$ F		0.44		- 50%, + 80%
Inductance	L	mH		1.34		$\pm 30\%$ <sup>1</sup>
Resistance	R	ohms		1.5		
RF power	P	W			2	Average power
Isolation	$S_{13}$	dB		30		
DC path bandwidth	$f_{c,DC}$	kHz		6		
RF Connectors	SMA jacks (f)					
DC Connector	Solder pin					
Warranty	One Year					

<sup>1</sup> A 1 mH choke is supplied with the bias tee. It is to be wired in series directly to the DC in solder terminal on the coax module. This is a high impedance point. Avoid using long wire, especially coax, for this connection. Do not locate the choke close to ground. Excessive stray capacitance will cause a resonance that will appear as a dip in the insertion loss between 1 and 10 MHz

Mechanical dimensions



Suggested assembly of the external inductor and terminal strip

Ordering information

Models

PSPL5547 BIAS TEE, 15 GHz, 50 V

**ASEAN / Australasia** (65) 6356 3900  
**Belgium** 00800 2255 4835\*  
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**Portugal** 80 08 12370  
**South Africa** +41 52 675 3777  
**Switzerland** 00800 2255 4835\*  
**USA** 1 800 833 9200

\* European toll-free number. If not accessible, call: +41 52 675 3777

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