

18 GHz Bias Tee

PSPL5550B Datasheet

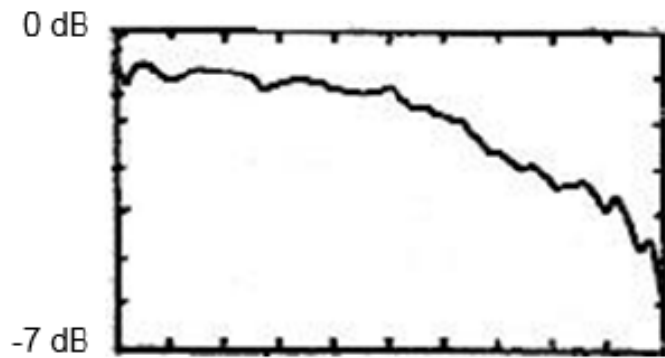


The PSPL5550B is a broadband coaxial bias insertion tee and DC blocking capacitor designed to pass fast rise pulses with minimum waveform distortion. The rise time is 20 ps with a -3 dB bandwidth extending from 100 kHz to 18 GHz. The PSPL5550B will safely carry 500 mA of DC current. However, core saturation limits the low frequency response at DC currents above 50 mA.

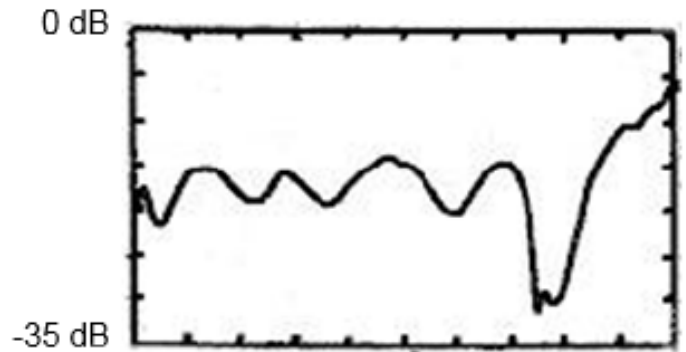
Key performance specifications

- 100 kHz to 18 GHz
- 20 ps rise time
- 50 V, 500 mA

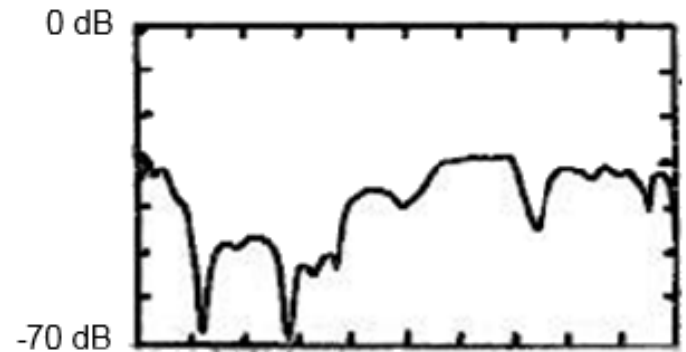
Typical performance



1 db/div and 2 GHz/div Insertion Loss



5 db/div and 2 GHz/div Return Loss



10 dB/div and 2 GHz/div Isolation (AC-DC)



Top to bottom: 500 ps/div, 100 ps/div, and 20 ps/div. 10 ps Step Response

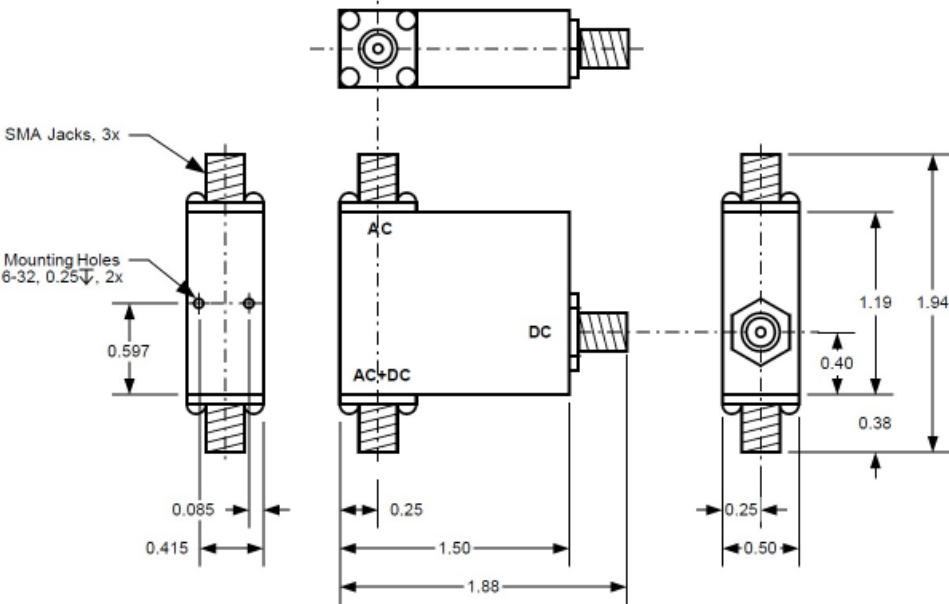


5% rho/div and 200 ps/div. 35 ps TDR of AC port

Specifications

Parameter	Symbol	Units	Minimum	Typical	Maximum	Comments
Impedance	Z	ohms		50		
Upper 3 dB frequency	$f_{c,h}$	GHz	14	>18		
Lower 3 dB frequency	$f_{c,l}$	kHz		100		
Rise time	t_r	ps		20	25	10 – 90%
Insertion loss	S_{21}	dB		0.9		0.01 – 4 GHz
Input (AC) Return Loss	S_{11}	dB	RL > 15 dB – 2 dB / GHz * f (GHz) RL > 11 dB – 0.4 dB / GHz * f (GHz)			0.1 < f < 2 GHz 2 GHz < f < 5 GHz
Refl. Coefficient (35 ps TDR)	Γ	%		+8 -12		t < 100 ps t > 100 ps
DC voltage	V	V			50	
DC current	I	mA			500	
Capacitance	C	μ F		0.02		\pm 20%
Inductance	L	mH		1		\pm 30%
Resistance	R	ohms		0.4		
RF power	P	W			2.5	Average power
Isolation	S_{13}	dB		\geq 30		
DC path bandwidth	$f_{c,DC}$	kHz		16		
Core Saturation (-3 dB low freq.)	$f_{c,lsat}$	kHz		\leq 100 160 350		DC Current < 50 mA 150 mA 500 mA
RF Connectors	SMA jacks (f)					
DC Connector	SMA jack (f)					
Warranty	One Year					

Mechanical dimensions



.XX = 0.01; .XXX = 0.05

Ordering information

Models

PSPL5550B

BIAS TEE, 18 GHz, 50 V

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