

12 GHz Bias Tee

PSPL5575A Datasheet

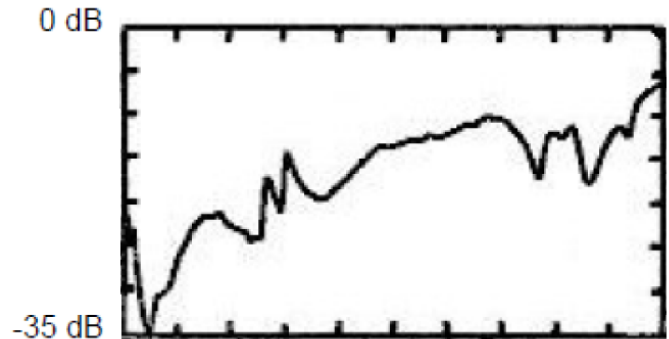


The PSPL5575A is a broadband coaxial bias insertion tee and DC blocking capacitor designed to pass fast rise pulses with minimum waveform distortion. The rise time is 30 ps with a -3 dB bandwidth extending from 10 kHz to 12 GHz. The PSPL5575A will safely carry 500 mA of DC current. However, core saturation limits the low frequency response at DC currents above 20 mA.

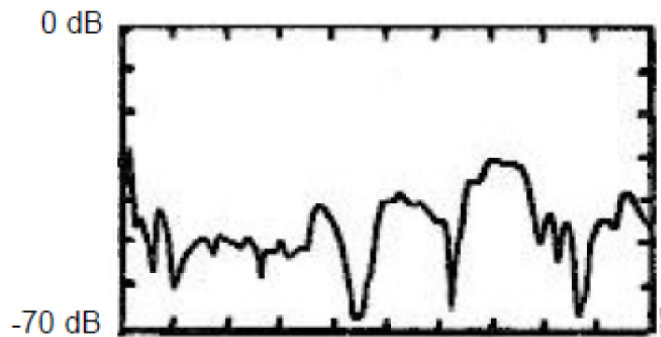
Key performance specifications

- 10 kHz to 12 GHz
- 30 ps rise time
- 50 V, 500 mA

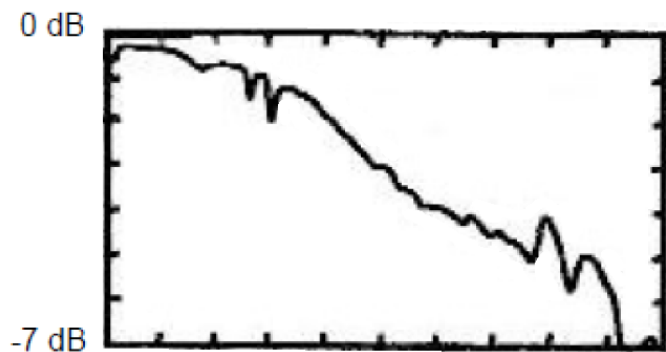
Typical performance



5 dB/div and 2 GHz/div Return Loss



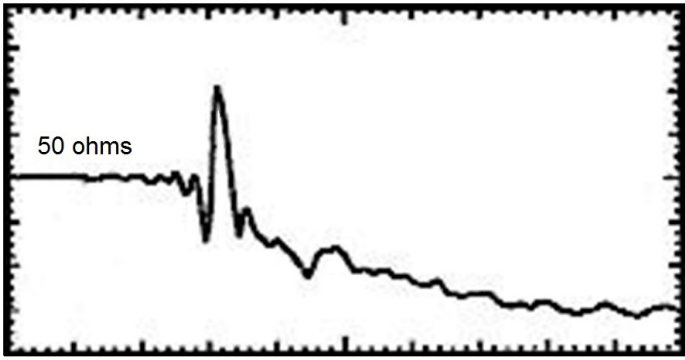
10 dB/div and 2 GHz/div Isolation (AC-DC)



1 dB/div and 2 GHz/div Insertion Loss



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



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	12		
Lower 3 dB frequency	$f_{c,l}$	kHz		10		
Rise time	t_r	ps		30	35	10 – 90%
Insertion loss	S_{21}	dB		0.6		0.01 – 3 GHz
Input (AC), Return Loss	S_{11}	dB	RL > 18 dB – 1.2 dB / GHz * f (GHz)			0.1 < f < 10 GHz
Refl. Coefficient (35 ps TDR)	Γ	%		±5 -6		t ≤ 100 ps t > 100 ps
DC voltage	V	V			50	
DC current	I	mA			500	
Capacitance	C	μF		0.02		- 50%, + 80%
Inductance	L	mH		8		±30%
Resistance	R	ohms		0.6		
RF power	P	W			3.5	Average power
Isolation	S_{13}	dB		≥30		
DC path bandwidth	$f_{c,DC}$	kHz		10		
Core Saturation (-3 dB low freq.)	$f_{c,lsat}$	kHz		≤10 70 300		DC Current < 20 mA 100 mA 500 mA
RF Connectors	SMA jacks (f)					
DC Connector	SMA jack (f)					
Warranty	One Year					

Mechanical dimensions

