

18GHz Attenuator

PSPL5510 Datasheet



The PSPL5510 Attenuators address a need that has been totally ignored by other microwave component manufacturers who specify their products in the frequency domain, but ignore the time domain responses. For time domain measurements, it is important to also know the transient response of attenuators used in a test set-up. These SMA attenuators have 8 ps risetimes and are recommended for measuring pulses with risetimes of 25 ps or slower. For frequency domain measurements, the useful frequency

range is DC to 18 GHz. The 6 dB, 12 dB, 14 dB, and 20 dB values are popular for use as oscilloscope attenuators because they give simple, integer, voltage ratios of 2x, 4x, 5x, and 10x, respectively.

Key performance specifications

- SMA DC to 18 GHz
- 8 ps Risetime

Specifications

Parameter	Value
Values available	1,2, 3, 6, 10, 12, 14, and 20 dB
Frequency range	DC to 18 GHz
Connectors	SMA
Rise time (10% to 90%) (see <i>Typical. plots</i>)	8 ps typical, when tested with 20 ps rise time pulse
Impedance - DC	50 Ω , < ± 1 Ω typical, +7.5 Ω , -6.5 Ω maximum
Delay	74 ps, 1 – 12 dB (see typical group delay plots) 83 ps, 14 & 20 dB (see typical group delay plots)
DC Attenuation accuracy	± 0.3 dB, 1 – 6 dB ± 0.5 dB, 10 – 20 dB, max. limits
Return loss –DC VSWR – DC	> 40 dB typ, 23 dB min < 1.02 typ, 1.15 max
Attenuation Flatness (see <i>Typical. plots</i>)	< ± 0.3 dB, 1-6 dB < ± 0.6 dB, 10-20 dB
Return Loss – AC (see <i>Typical. plots</i>)	> 23 dB, f < 4 GHz > 15 dB, f < 18 GHz
Max. Power Input	2 W avg at 25C, derated linearly to 0.5W at 125C, 250 W peak, < 5 μ s pulse

PSPL5510 18GHz Attenuators

Parameter	Value
Temperature Range	-65 C to +125 C operating and storage, 0.0001 dB/dB/C temp. coeff.
Dimensions & Weight	19.2 mm, 4.1 gm (1-12 dB) 22.5 mm, 4.9 gm (14 & 20 dB), 5/16" hex body
Material	stainless steel
Serial Number	no
Warranty	One Year

Note: All parameters listed are typical unless maximum or minimum guaranteed limits are provided.

Ordering information

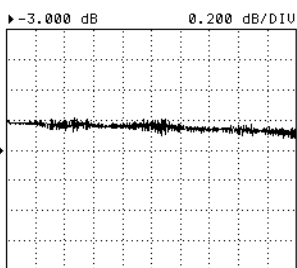
Model	Description
PSPL5510V	18 GHz Attenuator

Options

- Opt. 1DB Attenuation 1dB
- Opt. 2DB Attenuation 2dB
- Opt. 3DB Attenuation 3dB
- Opt. 6DB Attenuation 6dB
- Opt. 10DB Attenuation 10dB
- Opt. 12DB Attenuation 12dB
- Opt. 14DB Attenuation 14dB
- Opt. 20DB Attenuation 20dB

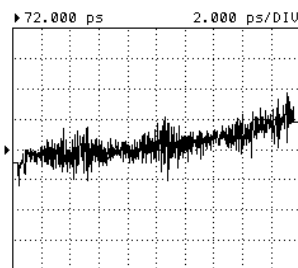
Typical Performance

Insertion Loss, S_{21}
0.2 dB/div, 6.5 GHz/div

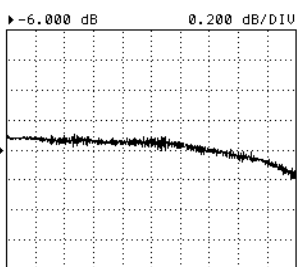
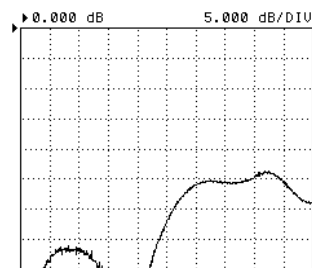


PSPL5510
Opt. 3DB

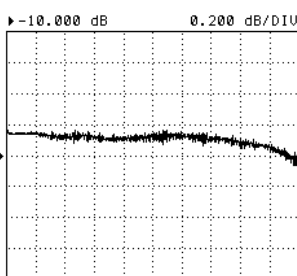
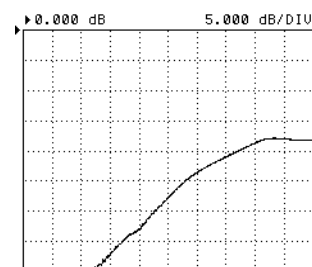
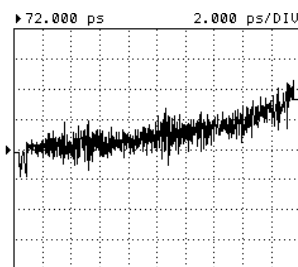
Group Delay, S_{21}
2 ps/div, 6.5 GHz/div



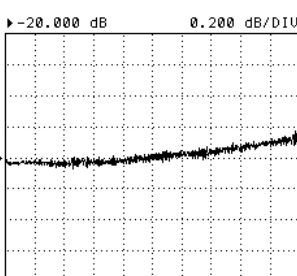
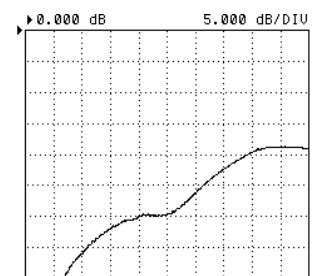
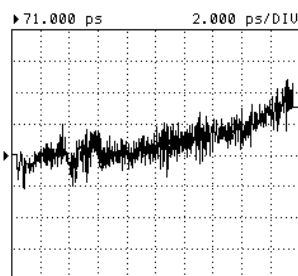
Return Loss, S_{11}
5 dB/div, 6.5 GHz/div



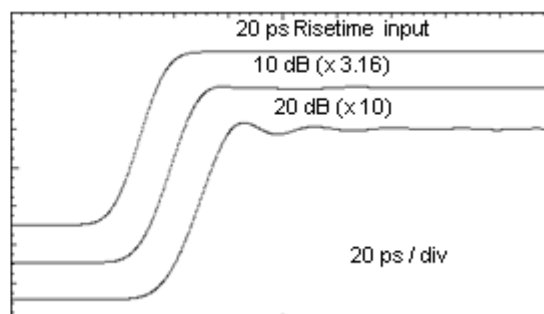
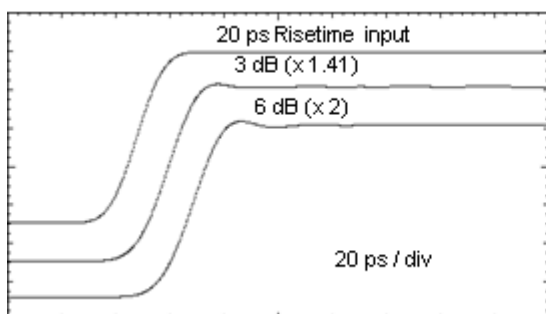
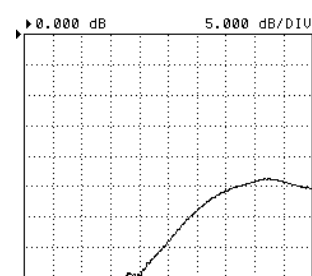
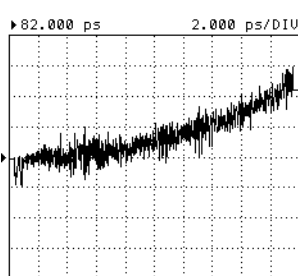
PSPL5510
Opt. 6DB



PSPL5510
Opt. 10DB



PSPL5510
Opt. 20DB



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