

Low-Pass Risetime Filter

PSPL5915 Datasheet



The PSPL5915 Low-Pass Rise time Filter is designed for use in high-speed digital networks and telecom systems. The -3 dB bandwidth of the standard filters is 0.75 * Bit Rate. These filters are a proprietary, absorption filter design that has attenuation and group delay responses similar to those of the Bessel-Thomson filter. Bessel-Thomson filters filter by reflection and thus can cause increased bit error rates and eye diagram closure due to multiple reflections. By contrast, the PSPL5915 filters by absorption. It has excellent impedance matches and very good return losses, both within and above the filter pass band.

Specifications

Parameter ¹	Value
Return Loss	>15 dB at f ₀ , typical
Risetime	Tr ≈ 0.35/f ₀
Bandwidth (-3 dB), f ₀	35 MHz to 10 GHz, dependent upon option
f ₀ Tolerance at 23 C	2%, 5% f > 4 GHz
Max. Power	23 dBm at f ₀
Max Current	1 A
Max Voltage	50 V DC
Insertion Loss	< 0.02 dB at DC
Impedance	50 Ω
Connectors	SMA jack (f) & plug (m)
Temperature	-25 C to + 90 C
Warranty	One year

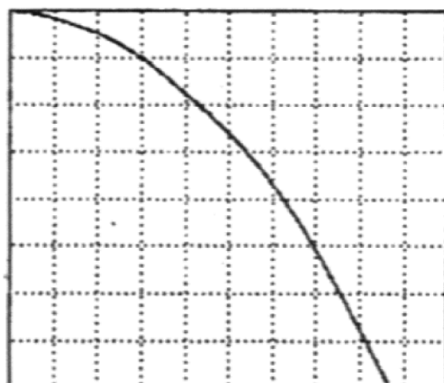
¹ All parameters listed are typical unless max/min guaranteed limits are provided.

Typical performance

SONET OC-48 Filter

$f(-3\text{dB}) = 1.87 \text{ GHz}$

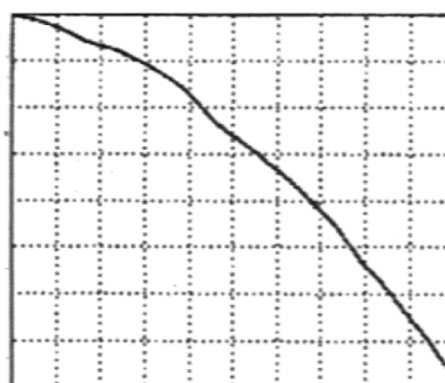
2 dB/div, 500 MHz/div



SONET OC-192 Filter

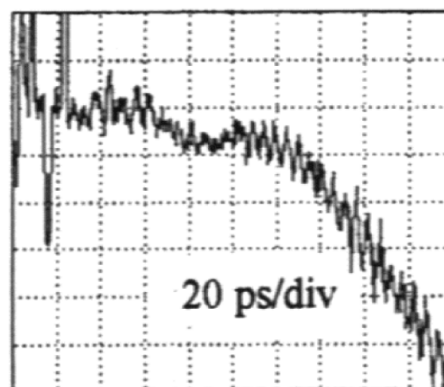
$f(-3\text{dB}) = 7.46 \text{ GHz}$

2 dB/div, 2 GHz/div

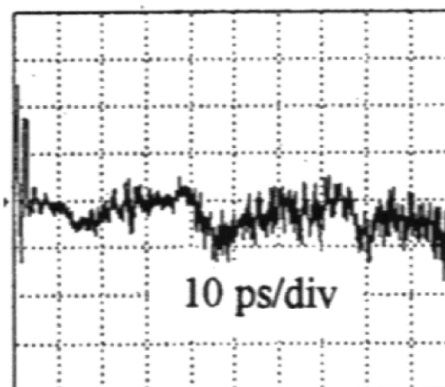


S₂₁ Insertion Loss

20 ps/div, 500 MHz/div

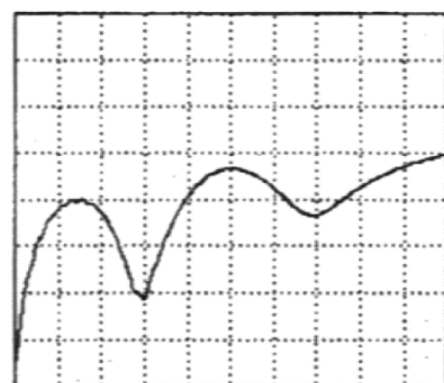


10 ps/div, 2 GHz/div

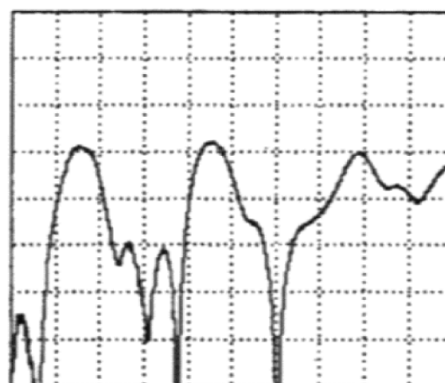


S₂₁ Group Delay

8 dB/div, 500 MHz/div

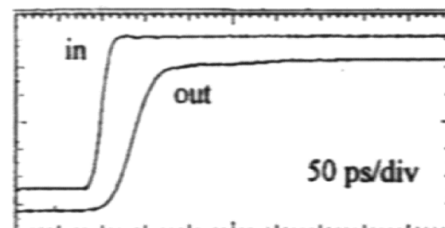
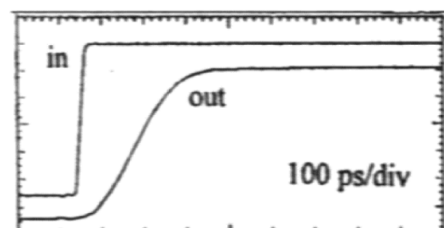


5 dB/div, 2 GHz/div

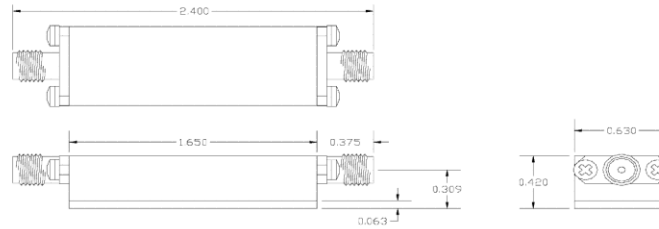


S₁₁ Return Loss

Response to 20 ps
rise time input step



Mechanical dimensions



Ordering information

Models

PSPL5915

Low-Pass Filter, up to 10 GHz

PSPL5915 filter options

Filters sorted by frequency		Filters sorted by rise time	
Option	Description	Option	Description
Opt. 35MHZ	35 MHz 3 dB frequency	Opt. 36PS	36 ps rise time
Opt. 220MHZ	220 MHz 3 dB frequency	Opt. 45PS	45 ps rise time
Opt. 467MHZ	467 MHz 3 dB frequency	Opt. 60PS	60 ps rise time
Opt. 700MHZ	700 MHz 3 dB frequency	Opt. 64PS	64 ps rise time
Opt. 797MHZ	797 MHz 3 dB frequency	Opt. 100PS	100 ps rise time
Opt. 1GHZ	1 GHz 3 dB frequency	Opt. 120PS	120 ps rise time
Opt. 1P5GHZ	1.5 GHz 3 dB frequency	Opt. 125PS	125 ps rise time
Opt. 1P59GHZ	1.59 GHz 3 dB frequency	Opt. 130PS	130 ps rise time
Opt. 1P87GHZ	1.87 GHz 3 dB frequency	Opt. 150PS	150 ps rise time
Opt. 3GHZ	3 GHz 3 dB frequency	Opt. 175PS	175 ps rise time
Opt. 3P19GHZ	3.19 GHz 3 dB frequency	Opt. 200PS	200 ps rise time
Opt. 5GHZ	5 GHz 3 dB frequency	Opt. 220PS	220 ps rise time
Opt. 6GHZ	6 GHz 3 dB frequency	Opt. 240PS	240 ps rise time
Opt. 6P37GHZ	6.37 GHz 3 dB frequency	Opt. 250PS	250 ps rise time
Opt. 7P46GHZ	7.46 GHz 3 dB frequency	Opt. 430PS	430 ps rise time
Opt. 7P73GHZ	7.73 GHz 3 dB frequency	Opt. 500PS	500 ps rise time
Opt. 10GHZ	10 GHz 3 dB frequency	Opt. 900PS	900 ps rise time
		Opt. 1NS	1 ns rise time
		Opt. 2NS	2 ns rise time
		Opt. 5NS	5 ns rise time
		Opt. 10NS	10 ns rise time

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

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