

Model 5925

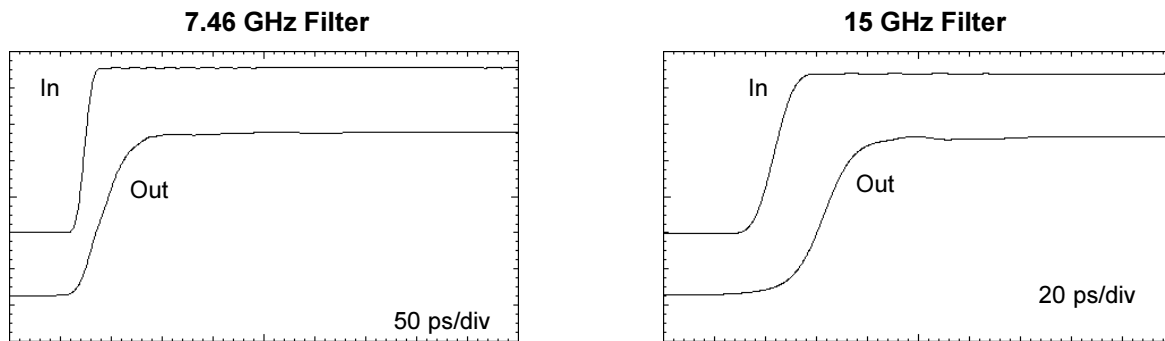
Low-Pass Risetime Filter

- 10 Gb/s to 20 Gb/s • SONET, SDH
- Z-Matched, No Reflection - No Echo



The Model 5925 Low-Pass, Risetime Filters are designed for OEM use in high-speed digital networks and telecom systems. The 5925 is a compact, higher data rate version of the PSPL Model 5915 filter. The -3 dB bandwidth of the standard 5925 filter is $0.75 \times \text{bit rate}$. These filters are a PSPL proprietary, absorptive filter design that have attenuation and group delay frequency 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 PSPL filters filter by absorption. They have excellent impedance matches and very good return losses, both within and above the filter pass band. These filters can be built for customer-specific applications from $6.0 \text{ GHz} \leq f_{3\text{dB}} \leq 15 \text{ GHz}$. The Model 5925 may also be used as a risetime filter to increase the risetime (or decrease the bandwidth) of a signal. For additional details on these filters, see PSPL application note, AN-7a, "Low-Pass Risetime Filters for Time Domain Applications."

Bandwidth (-3 dB), f_o	6.0 – 15 GHz	Impedance	50 Ω
BW Tolerance at 23 C	$\pm 5\%$	Temperature	-25 C to + 90 C
Risetime (10%-90%)	$Tr \approx 0.35 / f_o$	Return Loss	> 15 dB at f_o , typical
Warranty	One year. See Terms and Conditions of Sale for details	Connectors	SMA (refer to ordering information below)
Dimensions	1.675 x 0.63 x 0.42 inches [42.5 x 16 x 11 mm] (l x w x h)		



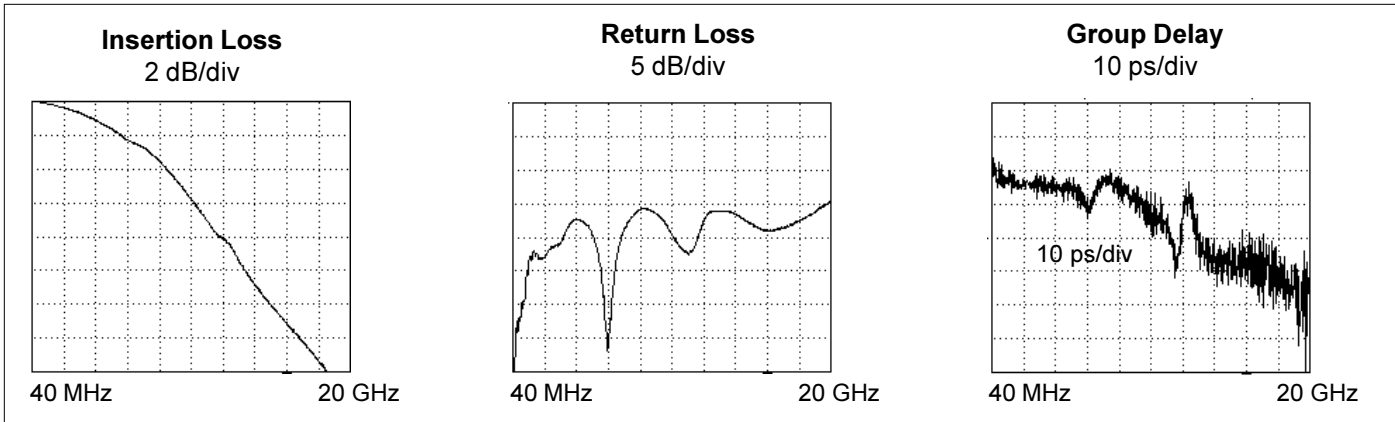
Typical pulse step responses of 7.46 GHz and 15 GHz filters when tested with a 15 ps risetime input pulse

Ordering Information

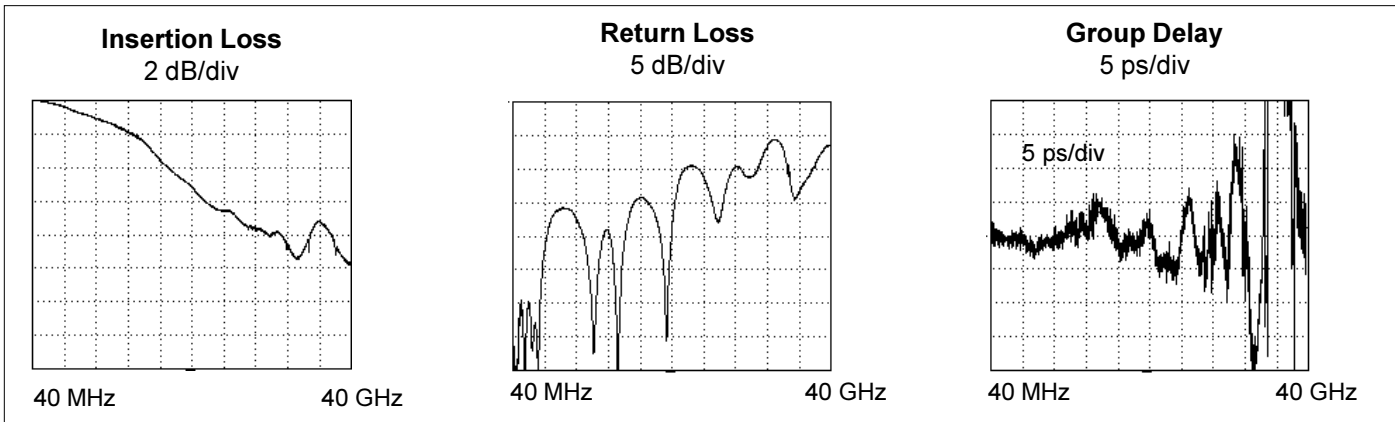
Model Number	Description
5925-100-XGHZ	Low-Pass Filter, X = -3 dB frequency between 6.0 and 15.0 GHz, SMA jack / jack (f / f)
5925-100-XPS	Risetime Filter, X = 10% - 90% risetime between 24 and 50 ps, SMA jack / jack (f / f)
5925-110-XGHZ	Low-Pass Filter, X = -3 dB frequency between 6.0 and 15.0 GHz, SMA jack / plug (f / m)
5925-110-XPS	Risetime Filter, X = 10% - 90% risetime between 24 and 50 ps, SMA jack / plug (f / m)

Other connector combinations are available on request.

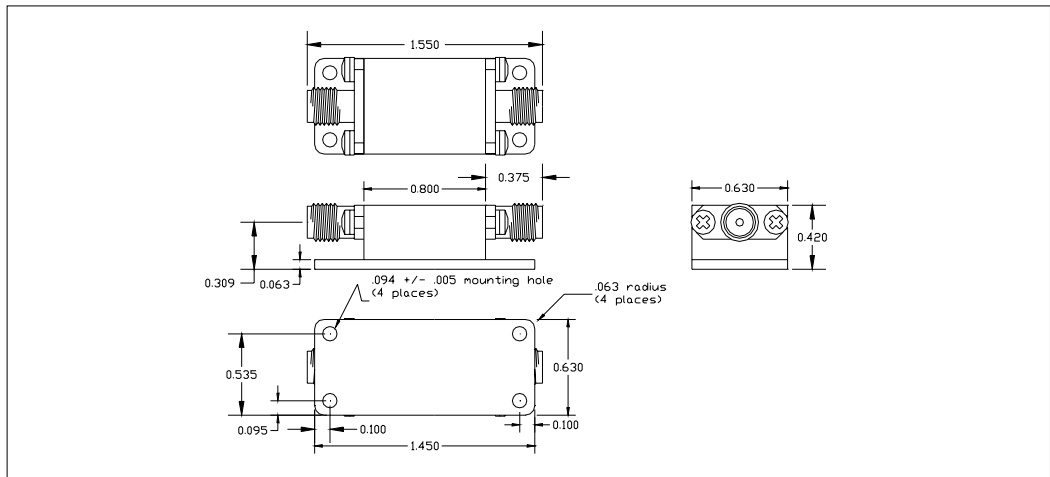
Typical Frequency Response of 5925 - 7.46 GHz Filter
Linear Sweep from 40 MHz to 20 GHz/div



Typical Frequency Response of 5925 - 15 GHz Filter
Linear Sweep from 40 MHz to 40 GHz/div



5925 Mechanical Drawing



Frequency responses measured using a Wiltron 37369A, 40 MHz to 40 GHz vector network analyzer. Pulse step responses measured using PSPL Model 4015C 15 ps Pulse Generator and HP-54750A 50 GHz oscilloscope