

Low Pass Filter



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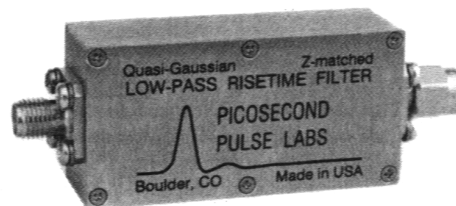
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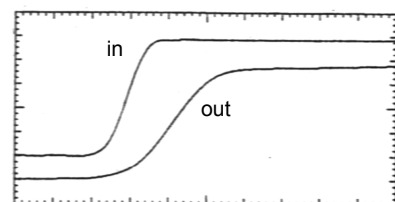
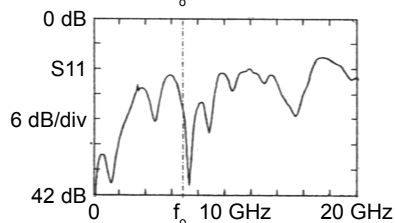
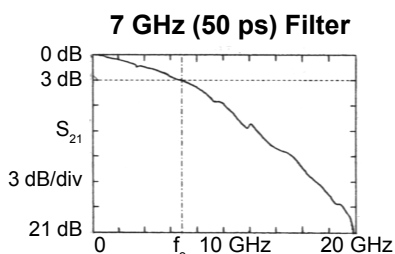
- 35 MHz - 10 GHz
- Quasi-Gaussian Z-Matched

The Model 5905 Low Pass Filter has a quasi-Gaussian response. Bandwidths from 35 MHz to 10 GHz are available. This filter is ideal for use in digital telecommunication systems. Specify the desired -3 dB bandwidth when ordering. For example, a SONET system operating at 2488 MB/s requires a 0.75/T, low pass, 1.87 GHz filter. The time domain pulse response is extremely clean. The 5905 is a proprietary, Z-matched, symmetrical filter containing both reactive and resistive elements. The unique aspect of this PSPL design is that the input and output impedances are well matched to 50 Ω , both within the pass band and in the rejection band. PSPL Filters filter by absorption rather than by reflection. This is especially important in a digital telecom system where delayed multiple reflection echoes can lead to intersymbol interference and degraded bit error rates. For additional details see PSPL Application Note AN-7a, "Low-Pass Risetime Filters for Time Domain Applications."



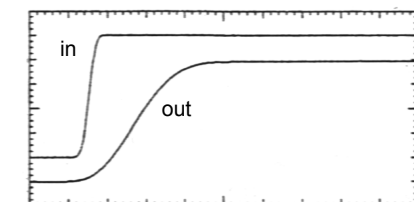
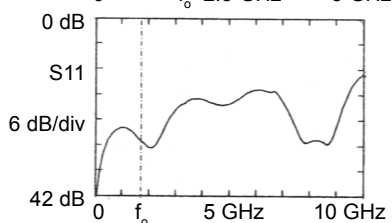
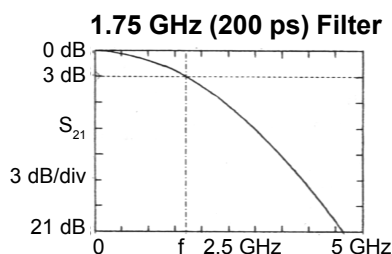
Filter Type	Quasi-Gaussian	Max. Avg. Power	23 dBm (f_0), 20 dBm ($f > 3f_0$)
-3 dB Bandwidth (f_0)	35 MHz to 10 GHz, specify on order	Max Current	1 A for $f_0 > 350$ MHz $\frac{1}{2}$ A (350 MHz) to $\frac{1}{4}$ A (35 MHz)
Bandwidth Tolerance	$\pm 5\%$ at 23 C	Risetime	$0.35 / f_0$
Return Loss	> 15 dB at $f = f_0$, typical	Temperature	-25 C to +90 C, operating
Impedance	50 Ω	Dim. and Weight	2.85" x 1" x 0.65", 2 oz.
Insertion Loss	< 0.1 dB for $f_0 > 175$ MHz to 0.25 dB for $f_0 = 35$ MHz	Connectors	SMA jack (f) and plug (m) jack/jack or plug/plug
Max Voltage	50 V DC	Warranty	One year. See Terms and Conditions of Sale for details

Note: The 5905 is not recommended for new designs. The suggested, improved design, replacement is the PSPL Model 5915.



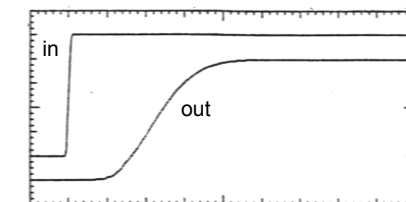
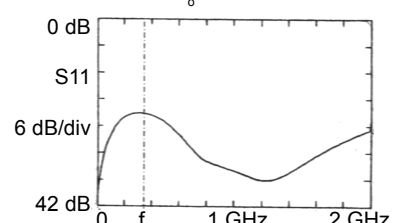
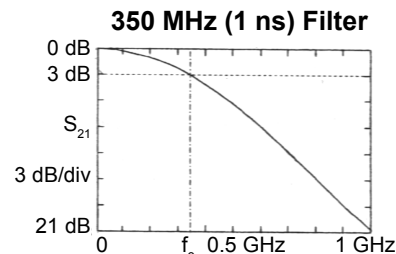
25 ps/div

Response to 25 ps rise input step



100 ps/div

Response to 35 ps rise input step



500 ps/div

Response to 50 ps rise input step

Frequency responses measured using a Wiltron 5447A, 10 MHz to 20 GHz network analyzer. Pulse step responses measured using an HP-54121A, 20 GHz oscilloscope.

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