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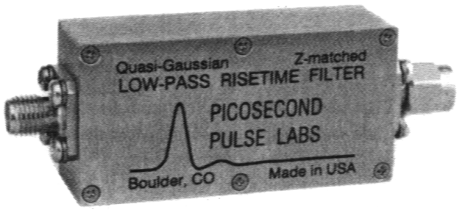
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Find the *Tektronix / Picosecond Pulse Labs 5905-5GHz* at our website: *Click HERE*

# Picosecond Pulse Labs

# Model 5905-XMHz
## Low Pass Filter

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

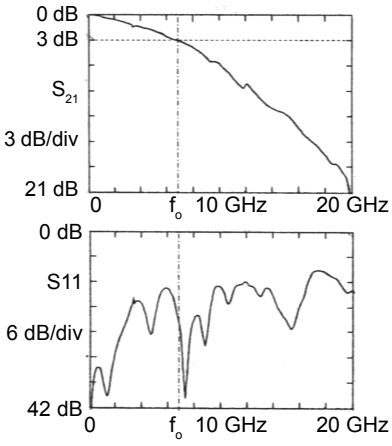


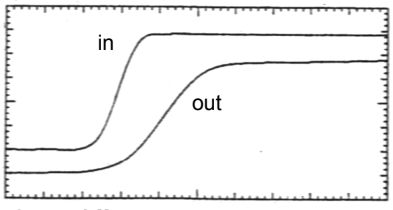

The Model 5905 Low Pass Filter has a quasi-Gaussian response. Bandwidths from 35 MHz to 10 GHz are available. This filter is ideal for use in digital telecommunication systems. Specify the desired -3 dB bandwidth when ordering. For example, a SONET system operating at 2488 MB/s requires a 0.75/T, low 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 ($f_o$), 20 dBm ($f > 3*f_o$) |
| **-3 dB Bandwidth** ($f_o$) | 35 MHz to 10 GHz, specify on order | **Max Current** | 1 A for $f_o > 350$ MHz<br>½ A (350 MHz) to ¼ A (35 MHz) |
| **Bandwidth Tolerance** | ±5% at 23 C | **Risetime** | 0.35 / $f_o$ |
| **Return Loss** | >15 dB at f=$f_o$, 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 $f_o > 175$ MHz<br>to 0.25 dB for $f_o = 35$ MHz | **Connectors** optional | SMA jack (f) and plug (m)<br>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.

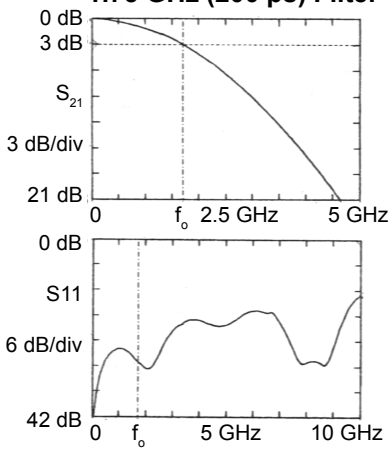
**7 GHz (50 ps) Filter**

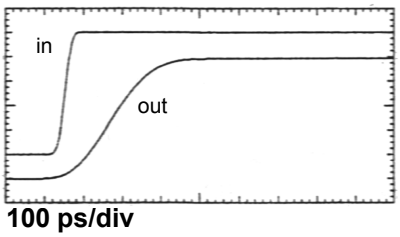



**25 ps/div**
Response to 25 ps rise input step

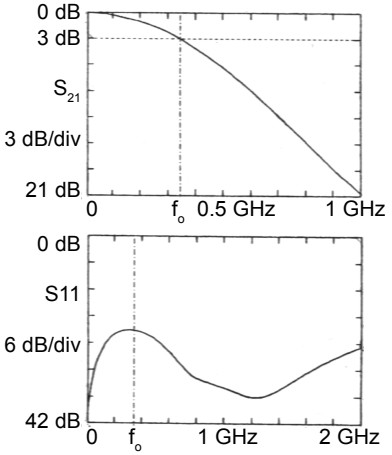
**1.75 GHz (200 ps) Filter**

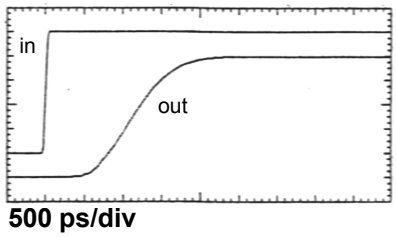



**100 ps/div**
Response to 35 ps rise input step

**350 MHz (1 ns) Filter**




**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.


**Picosecond Pulse Labs P.O. Box 44 Boulder, CO 80306, USA TEL: 1.303.443.1249 FAX: 1.303.447.2236**

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