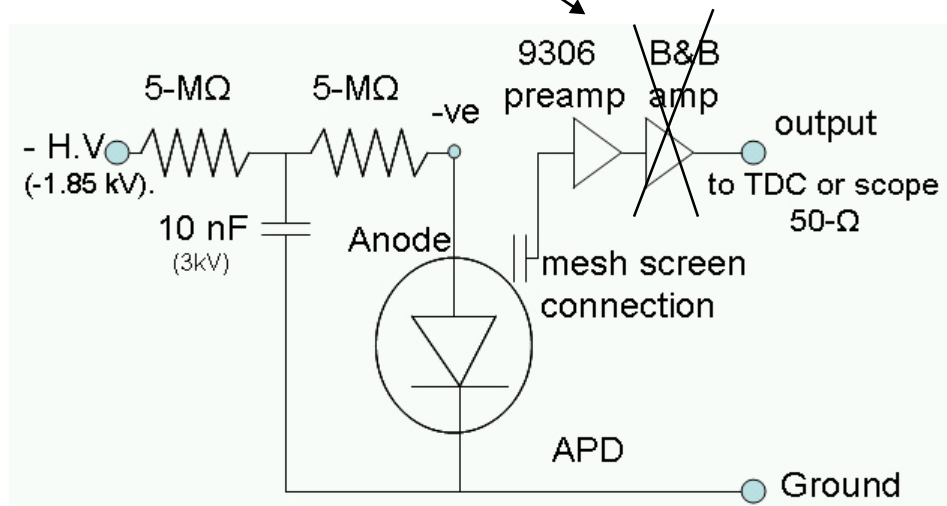
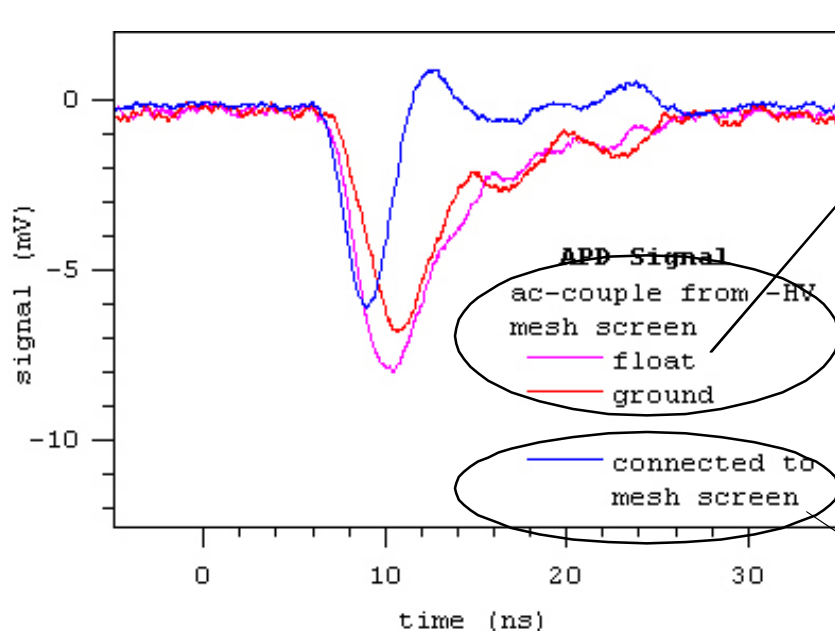
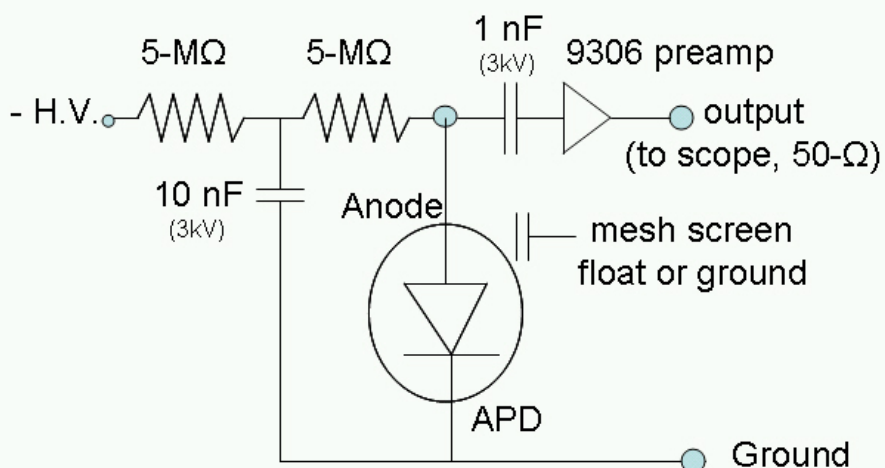


# Recall data on Nov. 20, 2012

## RMD APD 8x8 mm<sup>2</sup> Al-mesh screen

### APD bias and readout circuit (Princeton, BNL)



# Data from RMD APD 8x8 mm<sup>2</sup> Al-mesh screen

Data collected 11/12/12

The plot below was created with an APD that had a mesh screen on the top and bottom surface. The top screen is isolated from the top sensing (anode) surface with kapton tape, the bottom screen is in electrical contact with the cathode. There are three contacts on this device; namely, the anode (labeled “-HV”), the cathode (labeled “ground”) and the contact to the isolated mesh screen above the anode (labeled “screen”).

The APD was biased with -1750 V through the anode contact and the output signal was connected to the 50-ohm input of a 2.25 GHz oscilloscope. The source was a 980 nm laser diode with ~ 1 ns rise time.

When the output signal was connected to the “screen” and the cathode was connected to ground, the temporal response was independent of the incident pulse location. The speed of this response was consistent with the maximum bandwidth of a standard APD (i.e. when the laser pulse is incident near the anode contact).

When the output signal was connected to the cathode (“ground” pin) and the screen was electrically floating, the configuration is the same as a standard APD. The signal response was slower and also appeared to be independent of the location of the laser pulse.

