

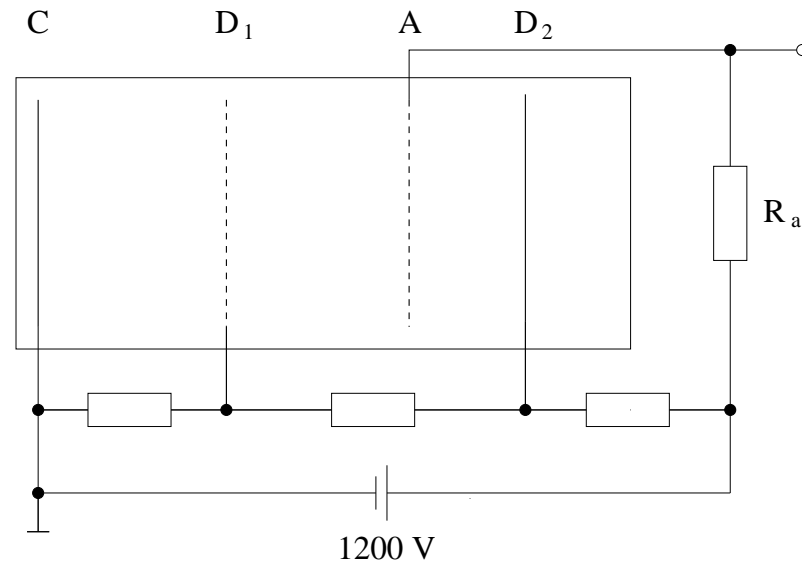
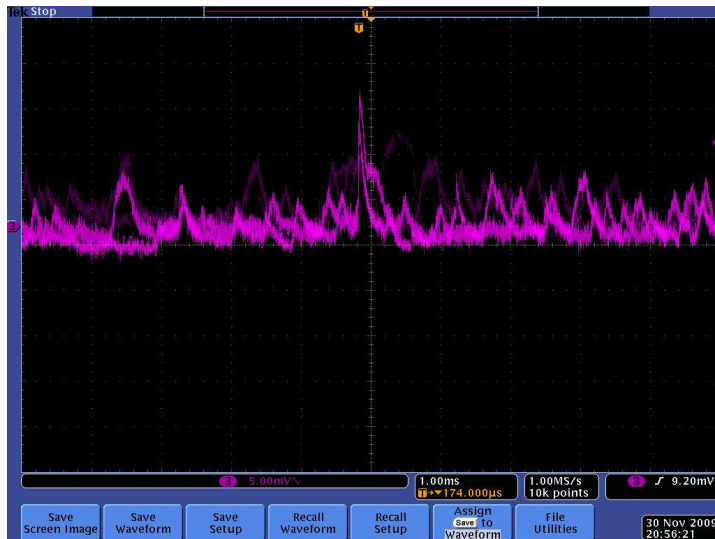
Forward Endcap Electronics Issues



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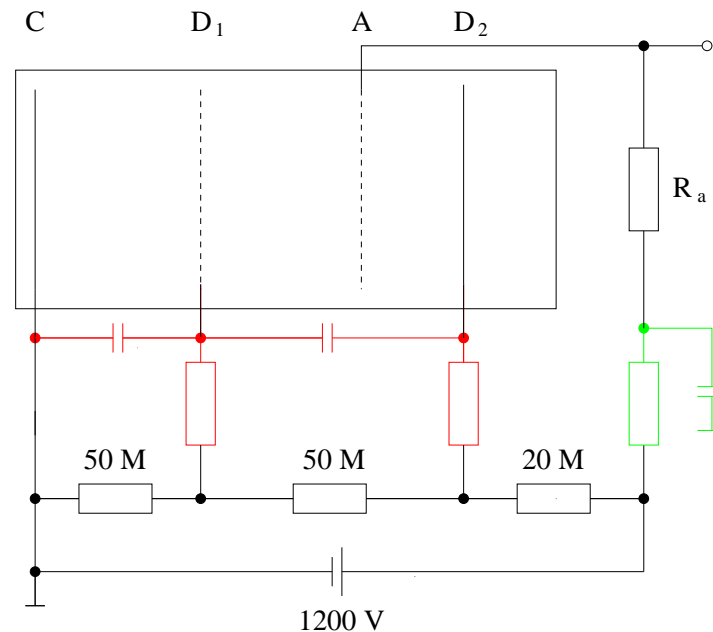
Ruhr-Universität Bochum



December Collaboration Meeting:

- 'Fireworks'-effect: Spontaneous bursts of signals
- Cause: Separate HV supplies of dynodes
- Remedy: Dynode supply via voltage divider (negative DC feedback stabilizes tube)
- Tested on two tubes so far - okay! (Systematic checks...)

- Voltage divider: Power dissipation (heat), how much?
- RIE: Noise minimization: $I_{div} = 50...100 I_a$ ($I_a \approx 10 \text{ nA}$)
- Factor of 50: $P = 0.01 \text{ W}$ per tube ($\approx 36 \text{ W}$ overall)
- Corresponding divider resistor: $120 \text{ M}\Omega$!
- Leakage of capacitors in HV filtering to dynode(s) may alter dynode voltages
- Omit dynode filtering?
- HV-distribution?
 - ▷ Crosstalk?
 - ▷ Neither tested for VPTs...
 - ▷ 4 anodes, 4 dynodes to one line?
 - ▷ Suitable?
 - Just set up test stand...





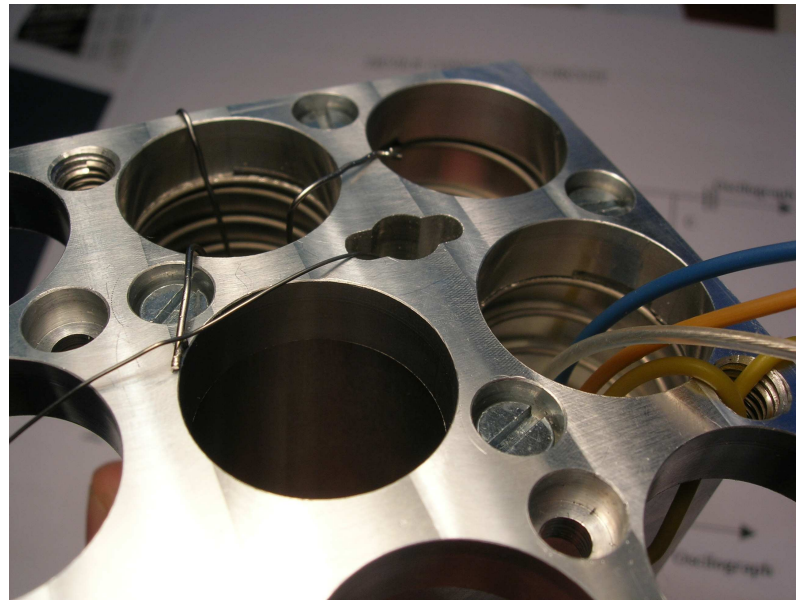
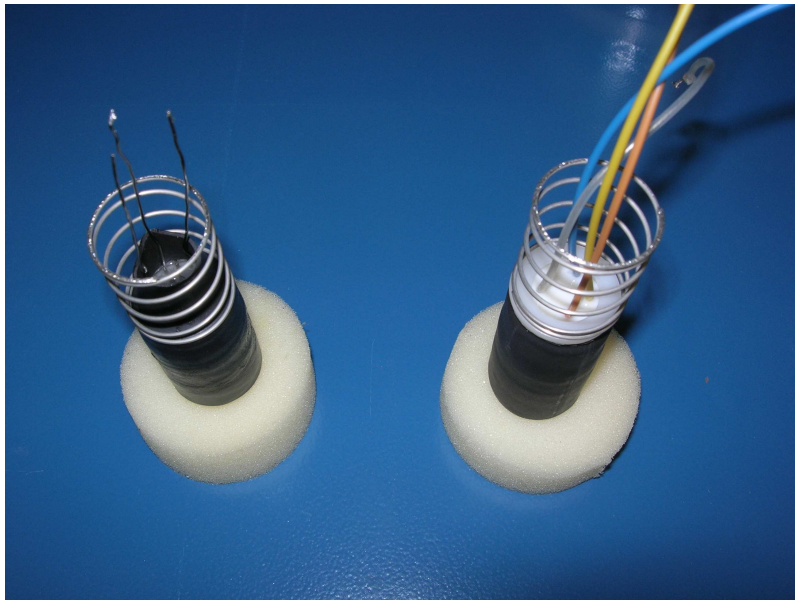
Triode:

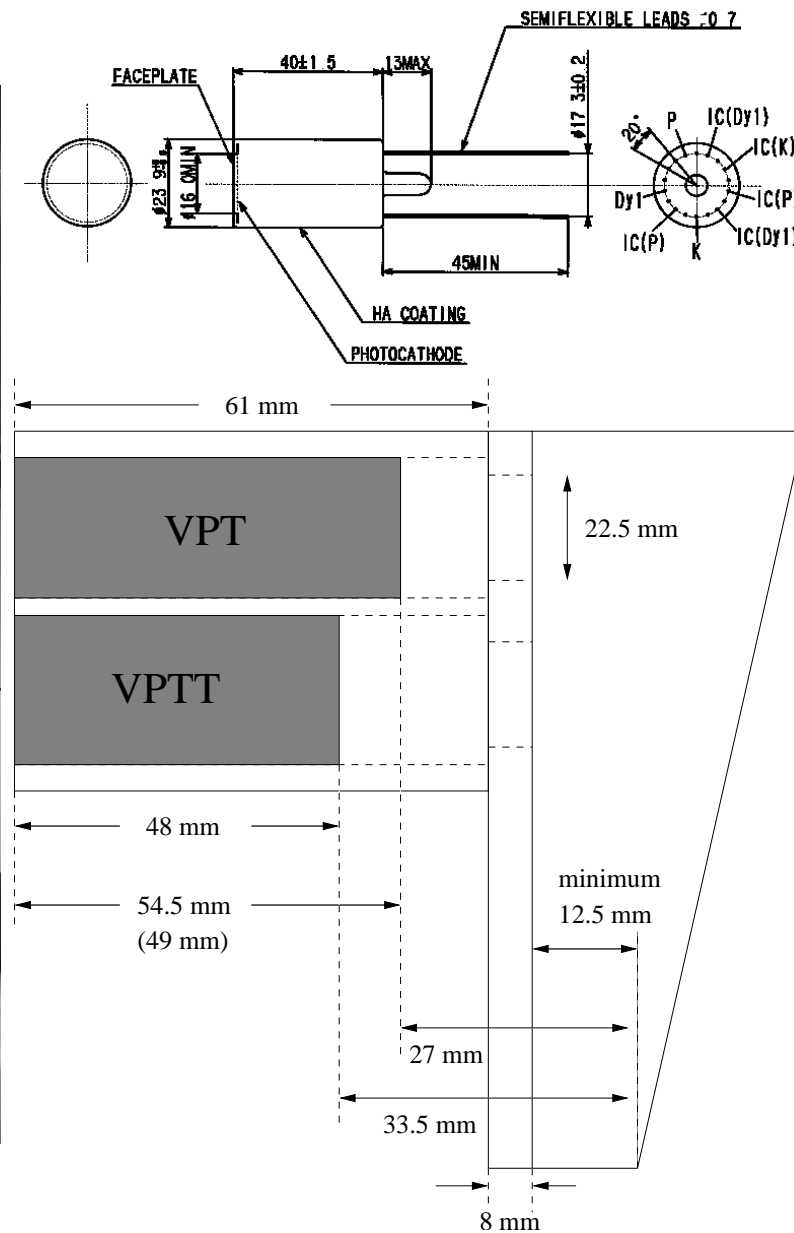
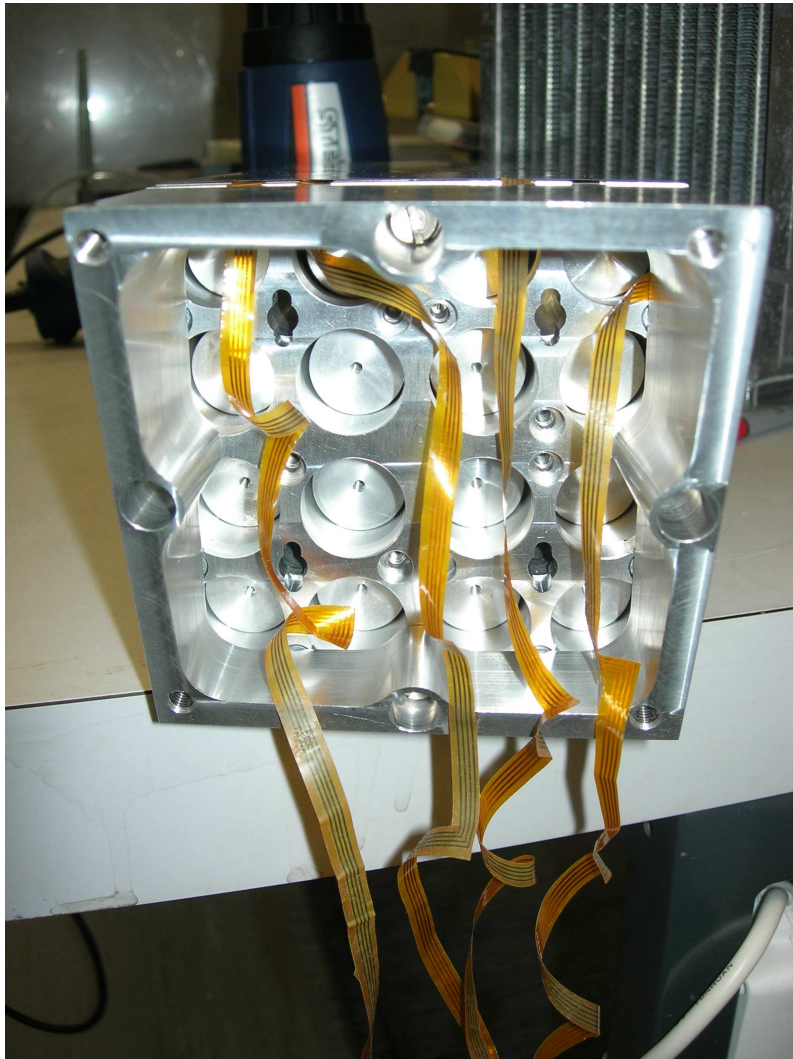
- Connection: 3 stiff wires
- One layer of shrinking tube
 - ▷ Isolation between wires and spring
 - ▷ Buffer between spring and glass tube
- Two springs

Tetrode:

- Connection: 4 cables
- Two layers of shrinking tube (due to diameter of tube)
- Plastic washer (buffer) between spring and (soft) silicon base







- Tube connection by cables (3(4)-pin plug)
- Coaxial signal output connector
- Shielded housing
- HV filtering on preamp PCB
- 'Super slim size'
- Same sound performance as 'bulky' Basel preamps we have!
- Mountability, especially in conjunction with
 - ▷ Tube-, HV-, LV-, signal connection
 - ▷ Suspension
 - ▷ Fibre and sensor cable routing
- VPTT version:
 - ▷ Coaxial HV connector
 - ▷ Dynode voltage divider on preamp PCB
- VPT version:
 - ▷ Additional space inside interface piece needed for HV distribution!

