

GAS Preamp Input Protection

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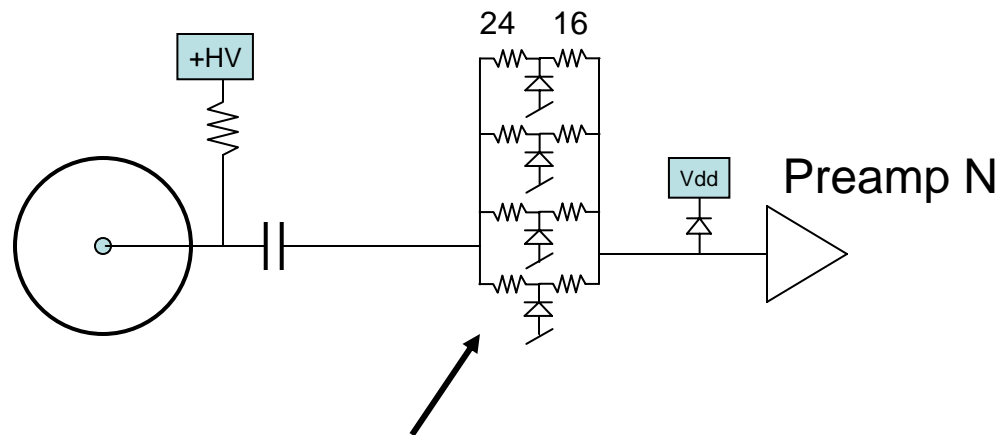
Input Protection Clarification

A basic input protection P-N diode block has been constructed.

- Each Diode is formed by interleaving 3P and 2 N type terminals (50um X 6um) in a 60X60um Nwell tub and has an equivalent capacitance of 0.8pF.
- Diode blocks are wired in series with current limiting resistors to reduce the risk of thermal runaway so that the total series resistance (pad to preamp input) should be no more than 10 ohms. (See schematic on following pages.)
- Since the area taken up by these structures is significant, we propose to devote about ~1/3 more diode area to 'negative' input protection than to 'positive' input protection.

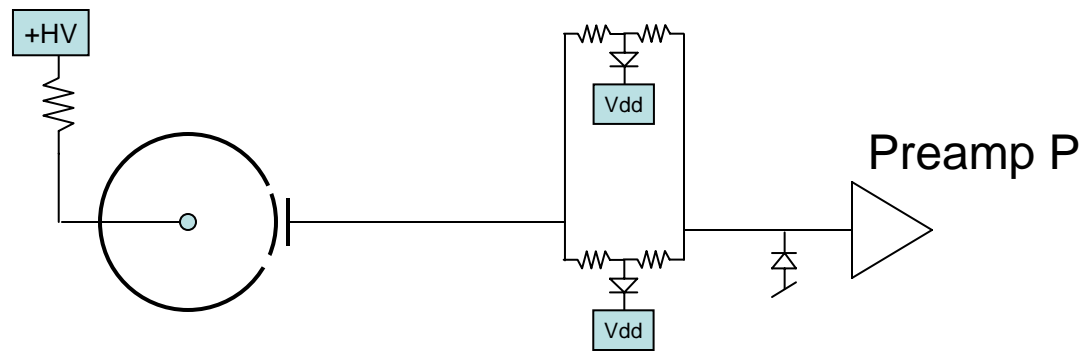
**Each of the 8 channels in the GAS chip has two inputs:
'N' for negative input, 'P' for positive input

Anode Protection for Negative Input Preamp



Intended to withstand .1 - .5mJ discharge spikes. We expect that the board design will retain space for external protection unless fabbed devices are shown to meet input protection requirements.

Proposed Cathode Strip Protection for Positive input Preamp



Is it correct that the input protection reqd. for the P input is less of an issue than the N?