Re: Win's next 10kV project, a 1us ramp

Source: http://sci.tech−archive.net/Archive/sci.electronics.design/2006−01/msg02867.html

- *From*: Joseph2k <joseph2k@xxxxxxxxxx>
- *Date*: Mon, 16 Jan 2006 14:58:19 GMT

Winfield Hill wrote:

> Joseph2k wrote...
>>
>> Jim Thompson wrote:
>>
>>> It's been a lo−o−ong time since I've lurked around a TV repair shop.
>>> Wonder how fast HV regulator tubes like 6BD4/6BK4 can be pushed?
>>>
>> i have been digging around and they can handle about 20 to 25 mA
>> continuous and about 200 mA peak 1% duty cycle and gave up on them as a
>> poor target.
>
> Looking at the curves, I'm amazed they can go that high, is that with
> a positive grid and a high plate voltage?
>
>> But that set me off onto power tetrodes from Eimac. Easy to get serious
>> overkill but they are available and you could probably drive them
>> grounded
>> grid from a single 1kV 3A FET. Assuming relatively clean triangular
>> pulses
>> the power dissipation in the FET won't be too bad. And a 4CX35000 can
>> certainly do its part; 20 kV anode / plate, 6A, PD 35000W (used in VHF
>> transmitters to 110 MHz and 195 kW).
>
>> Last problem is that output mode is still current rather than voltage,
>> and i don't know how important getting a voltage ramp is.
>
> We need a −3kV to −13kV voltage ramp, but a good way to get that is
> a constant sink current into the node capacitance. For example, if
> the capacitance is 100pF we need 1A for 1us. I checked the 4CX35000.
> Whoa! It's huge, 50# and 17" high by 10" dia, and needs 300W in the
> filament, sheesh! http://www.geocities.com/aaron_white/mwtube.html
>
>> I don't recall what the intended repetition rate is but IIRC it as
>> about 1 PPS? This setup could go 1000 times faster (save test time?)
>
> We're still evaluating the cycle time.
>

>
I did not say it was small, i said it would be a "one part" solution to the
kV problem with a 1A current.
−−
JosephKK

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- ***References***:
  - ***Win's next 10kV project, a 1us ramp***
    - ◊ *From:* Winfield Hill
  - ***Re: Win's next 10kV project, a 1us ramp***
    - ◊ *From:* Jim Thompson
  - ***Re: Win's next 10kV project, a 1us ramp***
    - ◊ *From:* Joseph2k
  - ***Re: Win's next 10kV project, a 1us ramp***
    - ◊ *From:* Winfield Hill

- Prev by Date: ***Re: Looking for biodegradable anti−static (ESD) bags***
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