in principle cannot withstand 300 V/cm but
in practice, it's hard due to fringing fields
- Asperities cause local field uncertainties

\[ E = \frac{V}{r} \]

Electrostatic force

\[ F_R = \frac{1}{2} \varepsilon_0 \frac{E^2 r}{(g-x)^2} \]

\[ F_L = -\frac{1}{2} \varepsilon_0 \frac{E^2 r}{(g+x)^2} \]

Small gap

Large gap (> 1 mm)

Secondary electrons

Kleiss curve

Shallow minimum around 300V

Emission characteristics

- Field emission
- Impact emission

Different materials behave differently

Not well understood

Great 24th of July project
### Table

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>100V, 100W</td>
</tr>
<tr>
<td>3000</td>
<td>300V, 300W</td>
</tr>
<tr>
<td>6000</td>
<td>600V, 600W</td>
</tr>
</tbody>
</table>

If you need help, you can ask.

### Diagram 1

- Electric field intensity (pull-in)
- Electric field emission (air, for other)
- Projector bracket

### Diagram 2

- Simple wiring
- Nice location on the chassis
- So don't...