Instruction manual and data sheet PCA-90-01-10-800-x

Photoconductive bow-tie antenna with finger gap structure for laser wavelengths $\lambda \sim 500 \text{ nm} \ldots 850 \text{ nm}$

PCA – Photoconductive Antenna

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1. **Spectral performance**

![Graph showing spectral performance](image_url)

- Emitter: PCA-90-01-10-800-h, 5V
- Detector: iPCA 21-05-1000-800-h, 170 mW
2. Antenna parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>minimum ratings</th>
<th>standard</th>
<th>maximum ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark resistance</td>
<td>600 kΩ</td>
<td>800 kΩ</td>
<td>1 MΩ</td>
</tr>
<tr>
<td>Voltage</td>
<td>4 V</td>
<td>5 V</td>
<td></td>
</tr>
<tr>
<td>Optical mean power</td>
<td>10 mW</td>
<td>20 mW</td>
<td></td>
</tr>
</tbody>
</table>

Current voltage characteristic of PCA-90-01-10-800
1. **Antenna design**

- Laser excitation wavelength: 800 nm
- Finger gap: 1 µm
- Antenna length: 90 µm
- Antenna chip size: 4 mm x 4 mm
4. Order information

PCA-90-01-10-800-x Photoconductive antenna

- length of the bow-tie antenna \( l = 90 \, \mu m \)
- gap distance between the fingers \( g = 1 \, \mu m \)
- width of the finger gap structure \( w = 10 \, \mu m \)
- laser wavelength \( \lambda = 800 \, \text{nm} \)

\( x \) denotes the type of mounting as follows:

- \( x = 0 \): unmounted chip 2 mm x 2 mm with 4 bond contact pads
- \( x = h \): mounted on an Al disc with 25.4 mm \( \varnothing \) and hyperhemispherical silicon substrate lens, 1m coaxial cable with BNC or SMA connector
- \( x = a \): mounted on an Al disc with 25.4 mm \( \varnothing \) and aspheric focusing silicon substrate lens, 1m coaxial cable with BNC or SMA connector
- \( x = c \): mounted on an Al disc with 25.4 mm \( \varnothing \) and aspheric collimating silicon substrate lens CL-12 for 12 mm THz beam diameter, 1m coaxial cable with BNC or SMA connector
- \( x = h-f \): fiber coupled antenna with hyperhemispherical silicon substrate lens
- \( x = l \): with aspheric focusing optical lens for free space laser excitation
- \( x = p \): with preamplifier for detector antenna