

Instruction manual and data sheet bPCA-870-05-10-800-x

Photoconductive THz antenna for laser excitation wavelengths < 850 nm

PCA – Photoconductive Antenna

Table of contents:

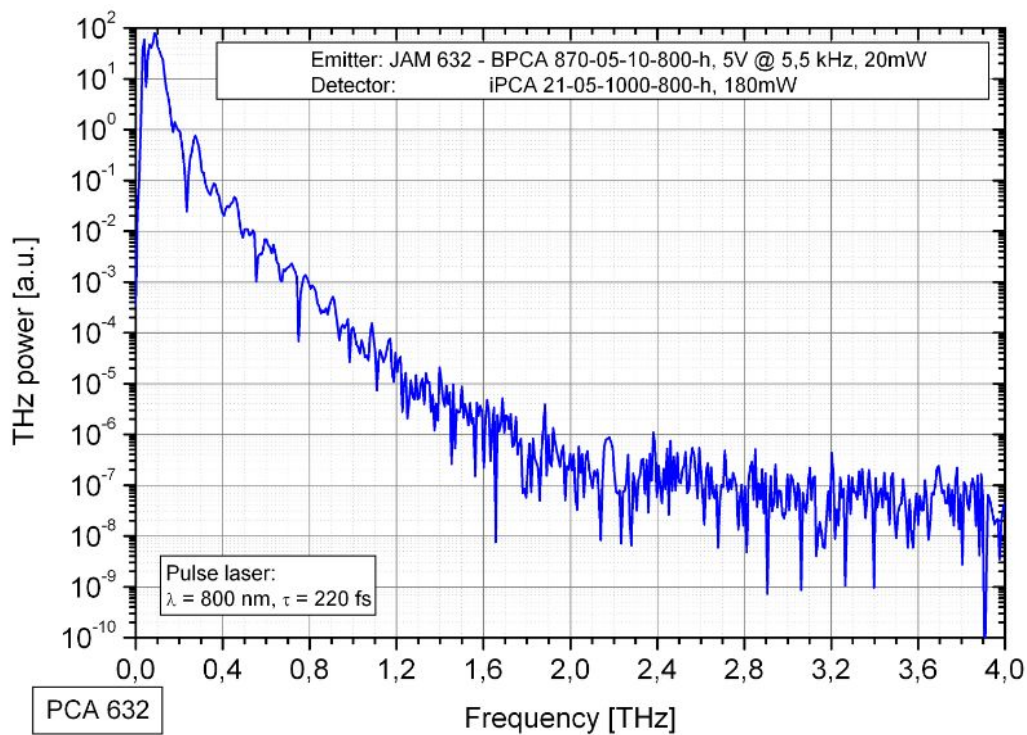
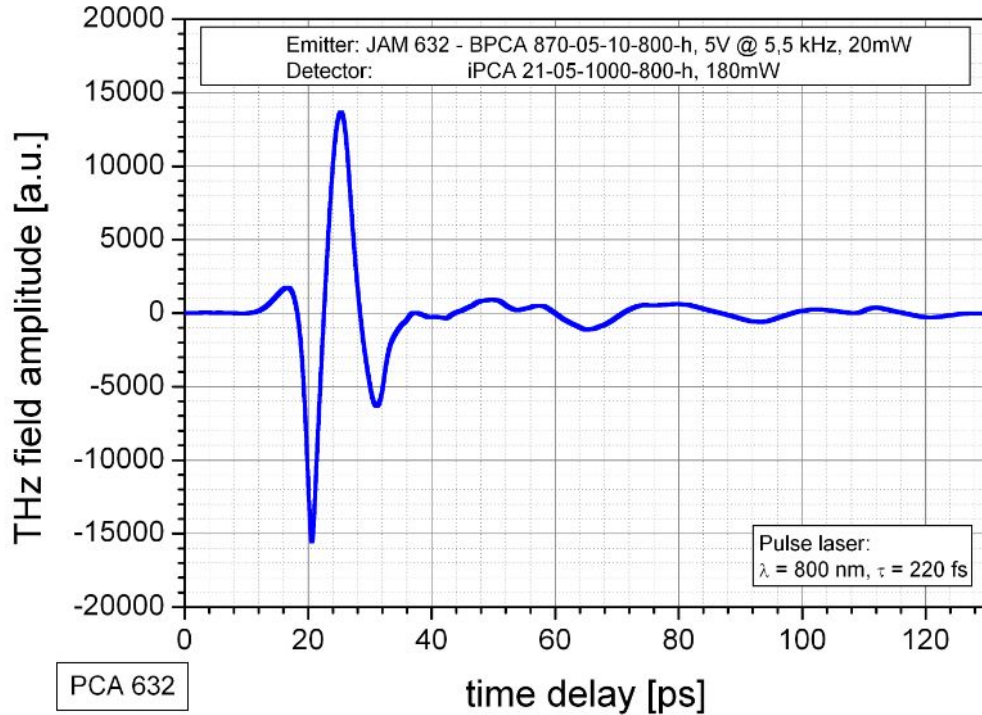
1.	<i>Spectral performance</i>	2
2.	<i>Antenna parameters</i>	3
3.	<i>Antenna design</i>	4
4.	<i>Order information</i>	5



1. Spectral performance

Emitter antenna: bPCA-870-05-10-800-h

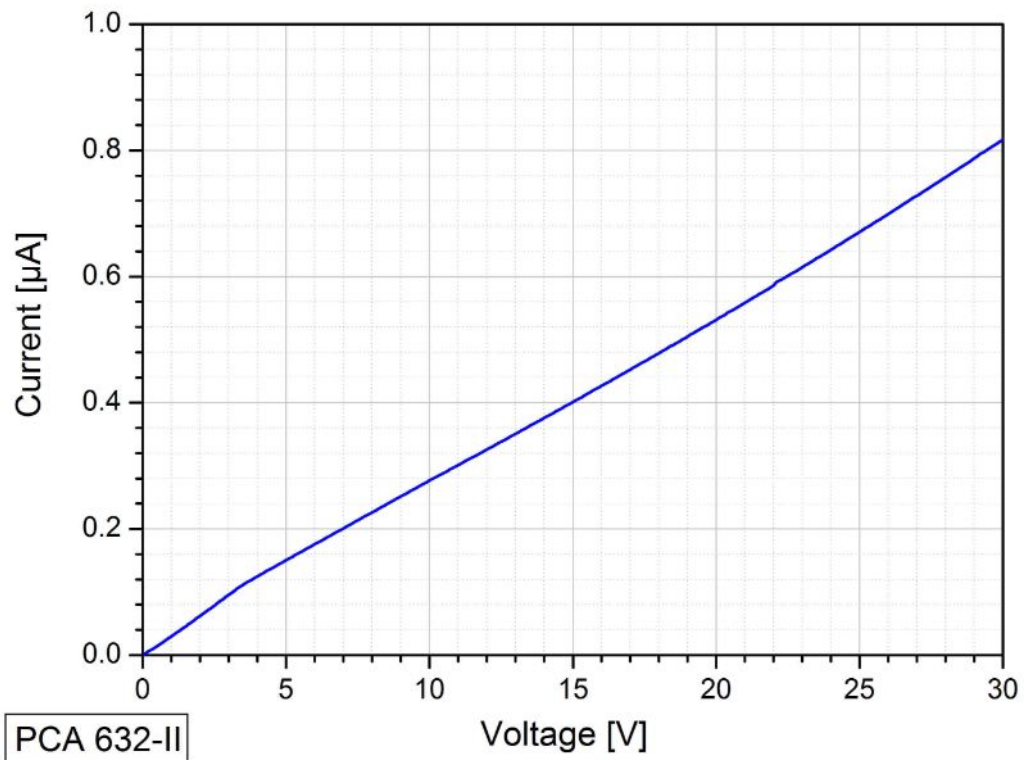
Detector antenna: iPCA-21-05-1000-800-h



2. Antenna parameters

Parameter	minimum ratings	standard	maximum ratings
Dark resistance	25 M Ω	30 M Ω	40 M Ω
Voltage		10 V	15 V
Optical mean power		10 mW	20 mW

Dark current voltage characteristic at T = 300 K



3. Antenna design

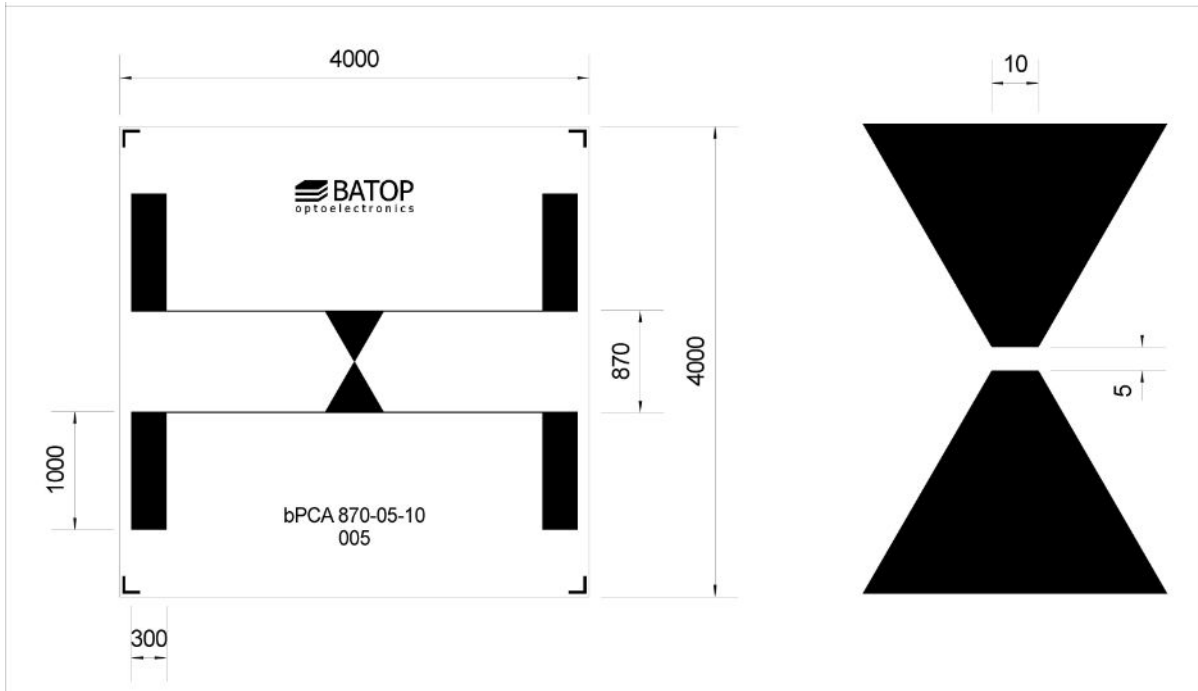


Photo bPCA 870-05-10-800
(survey)

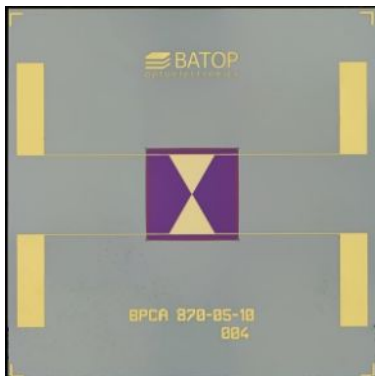


Photo bPCA 870-05-10-800

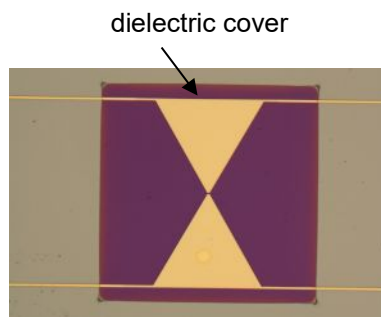
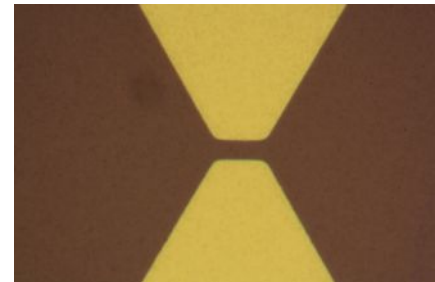


Photo bPCA 870-05-10-800
(detail)

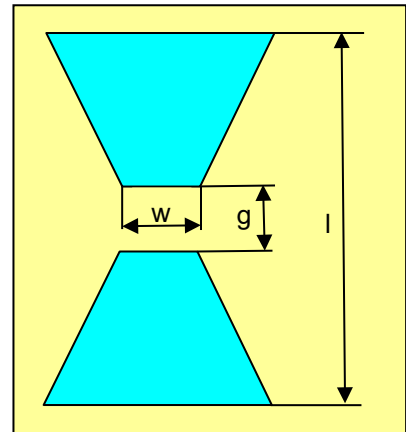


- Main PCA data**
- Laser excitation wavelength 800 nm
 - Antenna gap: 5 µm
 - Antenna length 870 µm
 - Antenna chip size 4 mm x 4 mm

4. Order information

bPCA-870-05-10-800-x

Photoconductive antenna

length $l = 870 \mu\text{m}$ gap $g = 5 \mu\text{m}$ width $w = 10 \mu\text{m}$ laser wavelength $\lambda = 800 \text{ nm}$
(1000 nm ... 800 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

For information about THz beam guiding possibilities please [click here](#)