

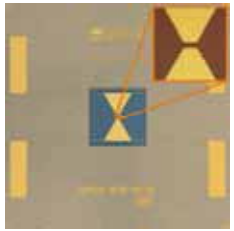
PCA – Photoconductive Antenna

Product Overview

- Single gap THz emitter or receiver antennas
- Laser wavelengths 800 nm / 1064 nm / 1550 nm (recommended laser pulse width ≤ 100 fs)
- Optional with prealigned hyperhemispheric, collimating or focusing aspheric silicon lens

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Product	Optical and THz parameters	
PCA1 - butterfly antenna 	Typical application Optical power Maximum sensitivity 10dB bandwidth SNR	detector with high sensitivity at low frequencies 20 mW ~ 100 GHz ~ 250 GHz ~ 70 dB
PCA2 - parallel line antenna 	Typical application Optical power Maximum sensitivity 10dB bandwidth SNR	Broadband emitter, detector 20 mW ~ 600 GHz ~ 1.5 THz ~ 50 dB
PCA3 - bow-tie antenna 	Typical application Optical power Maximum sensitivity 10dB bandwidth SNR	detector or emitter 20 mW ~ 150 GHz ~ 800 GHz ~ 60 dB
SPCA - logarithmic spiral antenna 	Typical application Optical power Maximum sensitivity 10dB bandwidth SNR	broadband emitter or detector 20 mW ~ 50 GHz ~ 300 GHz ~ 50 dB
Finger gap antenna 	Typical application Optical power Maximum sensitivity 10dB bandwidth SNR	emitter or detector, low optical excitation power 10 mW ~ 400 GHz ~ 800 GHz ~ 60 dB



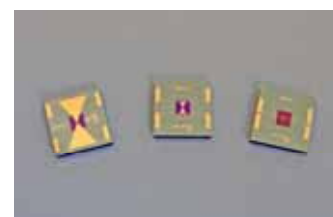
Complete PCA with BNC – connector



Front view on mounted PCA (laser side)



Back view with hyperhemispheric silicon lens

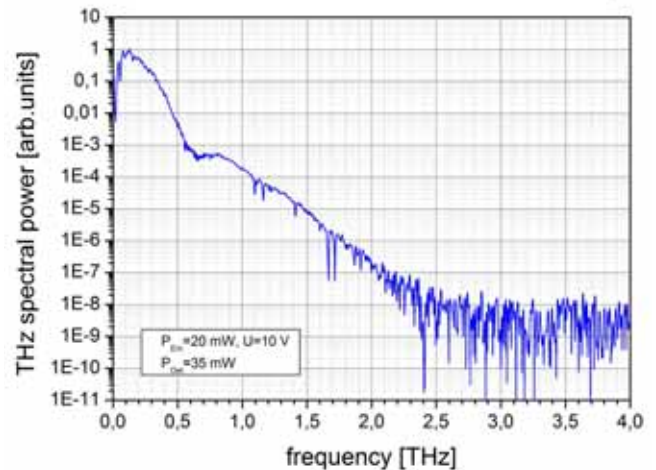
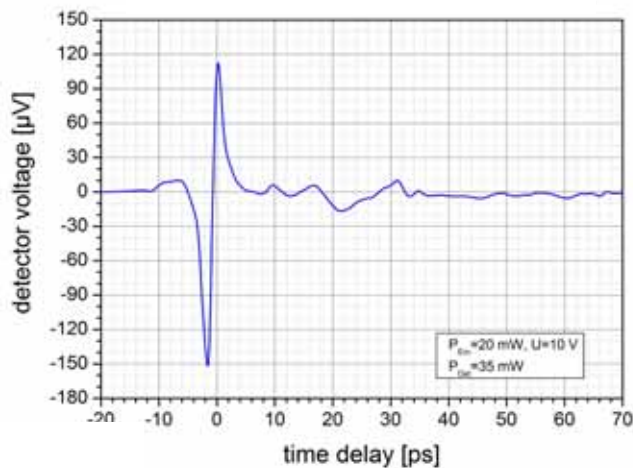


Bow-tie antennas with different geometrical parameters

Custom design, parameters and wavelengths on request.

THz-spectrum:

Emitter: **parallel line** antenna PCA 40-05-10-1060-a-I, Detector: **butterfly** antenna PCA 44-06-10-1060-a-I



Parameters and Mounting Options:

Chip size: 4 mm x 4 mm

Chip thickness: 625 μm

- Mounting:
- Unmounted PCA chip
 - Mounted on 25.4 mm diameter black aluminium mount with prealigned hyperhemispherical silicon substrate lens Ø 12 mm and 1 m coaxial cable (RG 174) with BNC or SMA connector *
 - Collimating aspheric silicon substrate lens or aspheric focusing silicon substrate lens *



Mounted PCA with aspheric focusing optical lens

- Additional options:
- Mounted Collimating Teflon Lens with THz beam Diameter 25 mm *
 - Mounted Collimating Teflon Lens for Fiber coupled PCA with THz beam Diameter 25 mm *
 - Mounted Focusing Teflon Lens with THz beam focus length 30 mm *
 - Aspheric focusing optical lens for free space laser excitation
 - Fiber coupled antenna with FC/PC or FC/APC fiber connector and BNC or SMA electric connector
 - Preamplifier for detector antenna
 - XYZ 25 mm translation stage with differential adjuster and kinematic mirror mount with three adjuster screws for alignment of the antenna with respect to the laser beam and the THz optics
 - **Mounting on custom mounts on request**



Collimating teflon lens with THz beam diameter 25 mm



Detector antenna with preamplifier



Fiber coupled antenna

* For information about THz beam shaping please visit <http://www.batop.de>