PCA – Photoconductive Antenna 海纳光学有限公司

Product Overview

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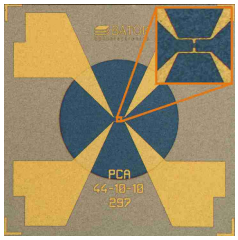
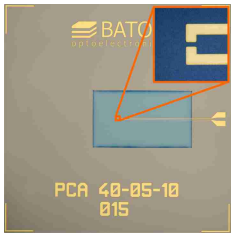
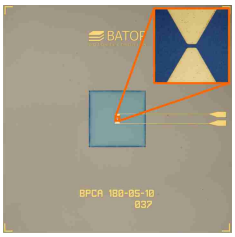
- Single gap THz emitter or receiver antennas
- Laser wavelengths 800 nm / 1060 nm / 1550 nm (recommended laser pulse width ≤ 100 fs)
- Optional with prealigned hyperhemispheric, collimating or focusing aspheric silicon lens

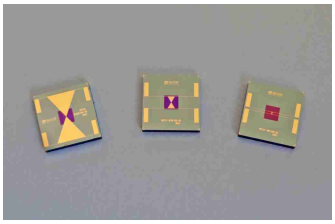
Product	**Optical and THz parameters**	
PCA - butterfly antenna 	Typical application	Emitter or detector with high sensitivity at low frequencies
	Optical power	15 mW
	Maximum sensitivity	~ 100 GHz
	10 dB bandwidth	~ 250 GHz
	Dynamic range	~ 70 dB
PCA - parallel line antenna 	Typical application	Broadband emitter, detector
	Optical power	10 mW
	Maximum sensitivity	~ 600 GHz
	10 dB bandwidth	~ 2 THz
	Dynamic range	~ 70 dB
bPCA - bow-tie antenna 	Typical application	detector or emitter
	Optical power	10 mW
	Maximum sensitivity	~ 150 GHz
	10 dB bandwidth	~ 800 GHz
	Dynamic range	~ 85 dB
SPCA - logarithmic spiral antenna 	Typical application	broadband emitter or detector
	Optical power	10 mW
	Maximum sensitivity	~ 50 GHz
	10 dB bandwidth	~ 300 GHz
	Dynamic range	~ 60 dB
PCA - Finger gap antenna 	Typical application	emitter or detector, low optical excitation power
	Optical power	10 mW
	Maximum sensitivity	~ 400 GHz
	10 dB bandwidth	~ 800 GHz
	Dynamic range	~ 60 dB

Custom design, parameters and wavelengths on request.

Complete PCA with BNC – connector

Front view on mounted PCA (laser side)

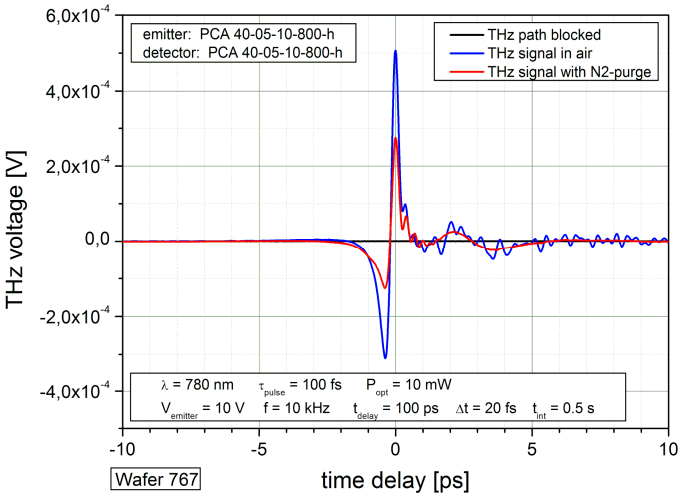
Back view with hyperhemispheric silicon lens

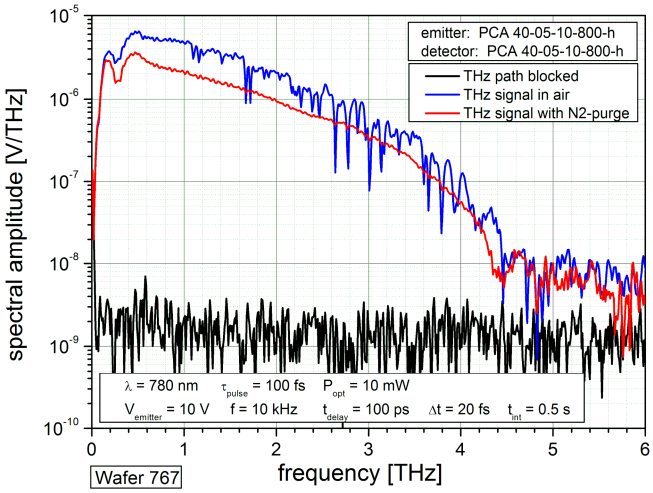


Bow-tie antennas with different geometrical parameters

THz-spectrum:

Emitter: parallel line antenna PCA 40-05-10-800-h, Detector: parallel line antenna PCA 40-05-10-800-h





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 ∅ 12 mm and 1 m coaxial cable (RG 178) 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:

- CTL-D25mm: Mounted Collimating TPX Lens with THz beam Diameter 22 mm *
- CTLF-D25mm: Mounted Collimating TPX Lens for Fiber coupled PCA, THz beam Diameter 22 mm *
- FTL-f30mm: Mounted Focusing TPX 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 TPX lens with THz beam diameter 22 mm

Fiber coupled antenna with ∅ 20 mm collimating silicon substrate lens

Fiber coupled antenna

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