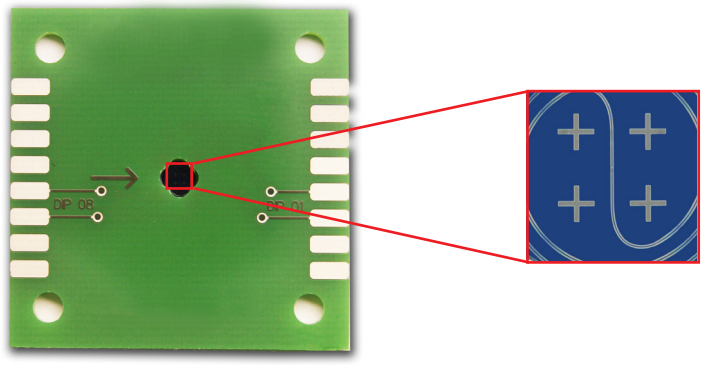
TERA8-1

THz-Antennas for 800 nm

MenloSystems



The TERA8-1 is a single dipole structure. The antenna can be used as emitter or as detector. We bring TERA8-1 to the market with our collaborator the ITWM, Fraunhofer-Institut für Techno- und Wirtschaftsmathematik ITWM.

KEY SPECIFICATIONS

- >4 THz Bandwidth
- Optimized for Femtosecond Lasers Around 800 nm and Pulse Width <100 fs at 100 MHz Repetition Rate
- High Conversion Efficiency, 10 mW Optical Power Required

APPLICATIONS

- THz Generation & Detection
- THz Imaging

FEATURES

- Chip Mounted on PCB
- 1 Wrapped Dipole Structure on Each Chip
- Low Temperature (LT) Grown GaAS Substrate
- Robust Design without Bonding Wires
- Individual Test Report Included

RECOMMENDED OPTICAL LIGHT SOURCES

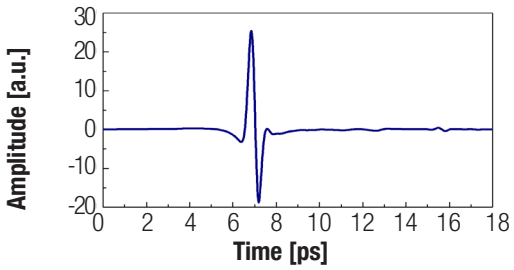
- C-Fiber 780
- ELMO 780 HP

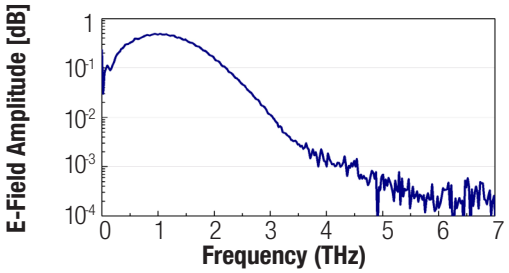
OPTIONS

- **T8-H2**
  Holder for photoconductive THz antenna including focusing lens for optical beam and Si-lens for THz waves; beam height: 85 mm

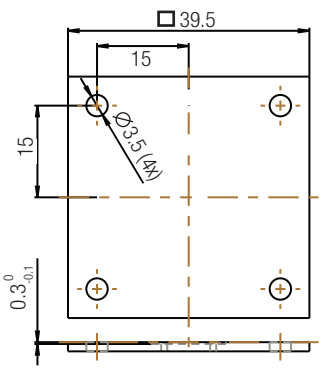
PERFORMANCE DATA

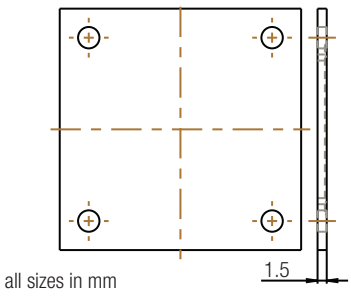
Test Conditions for Data Plots
Optical source: fs fiber laser operating at 780 nm and 100 fs pulse width. Data recorded with 20 µm dipole used on emitter and detector side. Mechanical chopper with 1 kHz lock-in detection and 30 ms integration time. 10 mW of optical input power at emitter and detector side, up to 30 V bias for emitter.



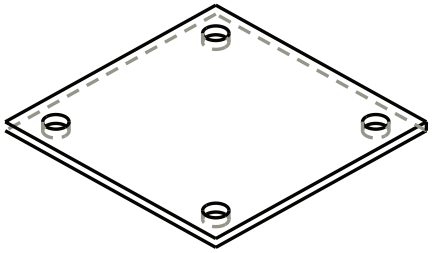


ANTENNA





all sizes in mm



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SPECIFICATIONS

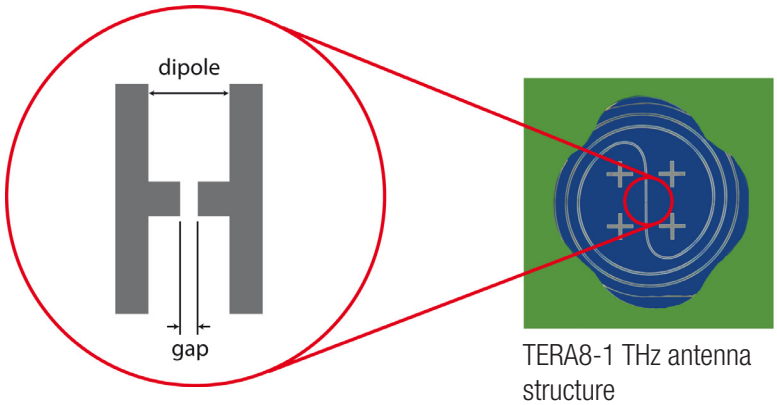
Photoconductive Material	LT-GaAs
Bandwidth	>4 THz
Dipole Structures	20 µm; our standard length for high bandwidth and high sensitivity
Gap Size	5 µm
Substrate Size	5.0 x 5.0 x 0.35 mm³
Electrical Connection	Bonded structure on PCB*

*The chip is mounted on a 40 x 40 mm² PCB. Optional alignement package T8-H2 can be ordered seperately.

OPERATING CONDITIONS

Average Optical Power	<10 mW
Pulse Duration	<100 fs
Repetition Rate	100 MHz (80...250 MHz)
Bias Voltage	recommended: ± 35 V (max. ± 40V)

Please refer to operating conditions for the recommended laser parameters and bias voltage. Improper use or experimental conditions are excluded from warranty.



TERA8-1 THz antenna structure

Caution: Maximum optical power 10 mW at 100 MHz laser repetition rate.

ORDERING INFORMATION

Product Code	TERA8-1	Package of TERA8-1 and T8-H2 Holder

Please call for pricing. Specifications are subject to change without notice.

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