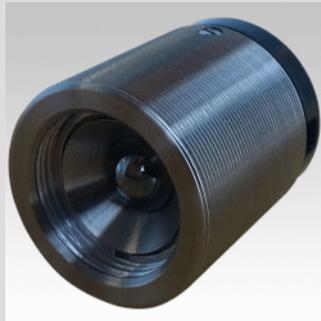


Terahertz Photoconductive Antennas (THz-PCAs)

T-Era-100A-800-air



Key Features

- Rugged Packaging
- Wideband THz Signal
- Integrated Silicon Lens
- Standard Ø1" Treaded Body
- Easy to Mount
- Ready to Use

Applications

- Terahertz Spectroscopy
- Terahertz Imaging
- Material characterization
- Material sensing
- Non-destructive test
- Terahertz spectroscopy
- Hidden object detection
- Product inspection
- Manufacturing quality control
- Material identification, such as: plastics; pulp and paper; gels organic powders; adhesives
- Thickness measurement and uniformity analysis
- Coating and thin film analysis
- Additives analysis
- Electronic chip fault analysis
- THz Time-domain Systems

Product Overview

The T-Era-100A-800-air terahertz photoconductive antenna (THz-PCA) is used to generate wideband THz pulses in terahertz time-domain systems. The T-Era-100A-800-air THz-PCA is made on high resistive ultra-fast epitaxially grown low-temperature GaAs (LT-GaAs) substrates packaged in TeTechS' patent pending THz chip enclosure module. The enclosure module houses the THz-PCA with a collimating high-resistive silicon lens attached to the back side of the THz-PCA chip. The device is packaged in a modular format so that it is easy to change the THz-PCA chip inside the enclosure at a fraction of cost. The device is shipped with the silicon lens aligned and packaged on the back side of the THz-PCA chip. The silicon lens can be re-aligned after changing the THz-PCA chip using our silicon lens setting fixtures.

An input bias voltage can be applied to the chip through an isolated MMCX connector. The standard Ø1" treaded body makes it convenient to attach the module to other standard optical components or mount it on an optical bench. When excited by optical pulses with 40 mW average optical power, the T-Era-100A-800-air THz-PCA generates 14 nA peak THz photocurrent with more than 60dB terahertz power spectrum dynamic range.

Product Specifications

Optical Excitation Wavelength	750 nm-850 nm
Average Optical Power	10 mW-100 mW
Bias Voltage	5 V-60 V
Spectrum Bandwidth	>4 THz
Power Spectrum Dynamic Range	>60 dB
Size (O.D.)	1"

Typical THz Time-Domain Measurement Settings

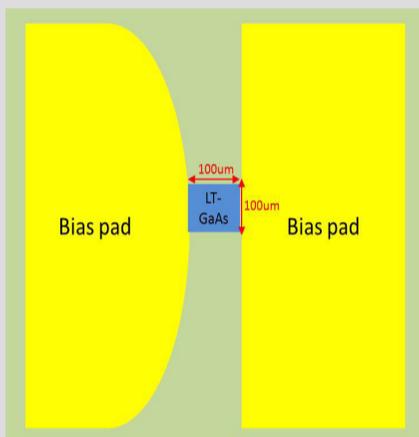
Transmitter Module	T-Era-100A-800-air
Receiver Module	T-Era-20D40P-800-air
Optical Excitation Wavelength	800 nm
Optical Pulse Duration	100 fs
Average Optical Power on Transmitter	40 mW
Average Optical Power on Receiver	15 mW
Bias Voltage on Transmitter	±10 V

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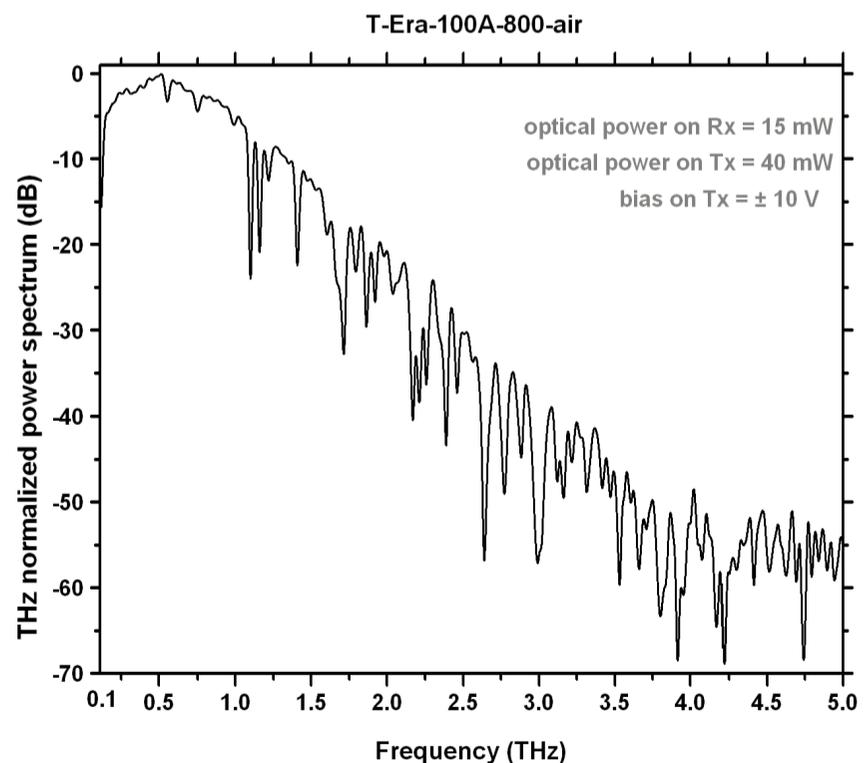
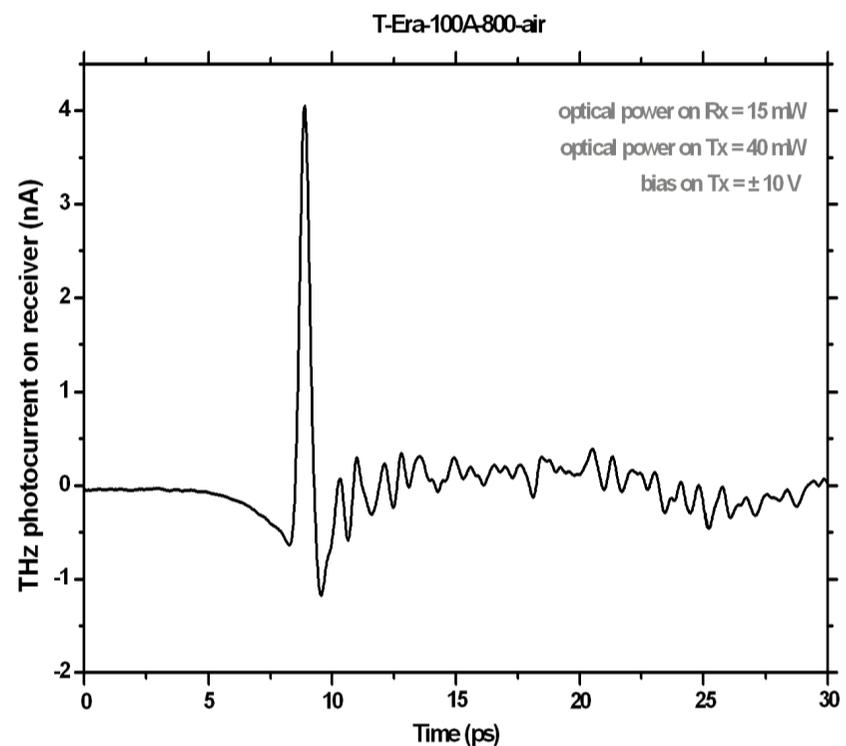
Terahertz Photoconductive Antennas (THz-PCAs)

T-Era-100A-800-air



Excited by 100fs optical pulses with 40mW average power the T-Era-100A-800-air THz-PCAs generate 14nA peak terahertz photocurrent with more than 60dB THz power spectrum dynamic range.

A typical THz pulse and its corresponding power spectrum generated by a T-Era-100A-800-air transmitter module and detected by a T-Era-20D40P-800-air receiver module in a terahertz time-domain system.



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