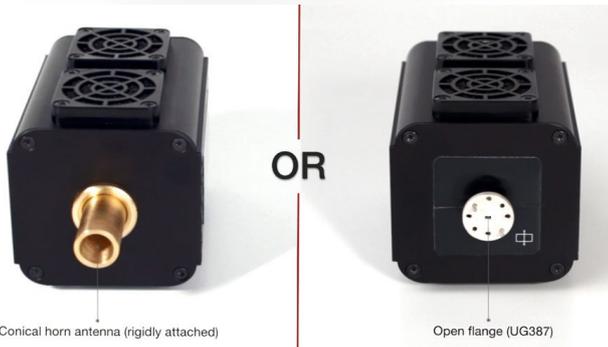


# SUB-TERAHERTZ SOURCES



- ✓ IMPATT technology
- ✓ 100 GHz, 140 GHz, 180 GHz and 300 GHz available frequencies
- ✓ 80 mW, 30 mW and 10 mW power output
- ✓ Protective isolator for enhanced stability
- ✓ TTL Modulation with 1  $\mu$ s rise/fall time
- ✓ Horn antenna or open flange options
- ✓ Low cost and compact size
- ✓ 1 year warranty

## Description

TeraSense series of terahertz sources (IMPATT diodes) are silicon double drift diodes with a 0.6  $\mu$ m transit region, mounted on copper heat sink. The layers in double-drift diodes are: a heavily doped (p<sup>+</sup>)-region, a moderately doped p-region, a moderately doped n-region, and a heavily doped (n<sup>+</sup>)-region. The (p<sup>+</sup>) — and (n<sup>+</sup>) — regions allow ohmic electrical contacts to be made to the external circuit. The device relies on negative resistance to generate and sustain an oscillation.

Terasense is now offering its upgraded version of terahertz source. The upgraded IMPATT diode is outfitted with a protective isolator, which significantly improves output power stability. From now on you can order IMPATT diode with either rigidly fixed horn antenna or WR- flange of your choice. Typical output rf power of THz source with optimized frequency @ 100 GHz can reach up to 100 mW.

## Specifications

Narrow-band THz source factory tuned to frequencies ~100 GHz, ~140 GHz, ~180 GHz or ~300 GHz.

High power output ~80 mW (100 GHz), ~30 mW (140 GHz), ~10 mW (180 GHz) and ~10 mW (300 GHz)

Protective isolator for better output power stability

Typical linewidth can be narrowed down to 1 MHz

TTL Modulation with 1  $\mu$ s rise/fall time

High gain horn antenna or open flange (WR-type) options available

External power adapter 24 V to ensure stable amperage input; 2 W input power

1 year warranty period

## About TeraSense

TeraSense is a manufacturer of low-cost portable sub-terahertz imaging cameras, generators and ultrafast detectors. Our products balance at the cutting edge of scientific and technological breakthroughs. The company is a very strong team of 20 highly skilled scientists and engineers bringing a wealth of experience in the field. TeraSense has a steady growing global outreach supported by a very wide network of authorized distributors available in more than 30 countries of the world.