

# SUB-TERAHERTZ SOURCES



Conical horn antenna (rigidly attached)

OR



Open flange (UG387)

- ✓ IMPATT technology
- ✓ 100 GHz, 140 GHz, 200 GHz and 300 GHz available frequencies
- ✓ 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 rfpower of THz source with optimized frequency @ 100 GHz can reach up to 100 mW.

THz source

**100** GHz

~ 80 / 180 / 400 mW  
output rfpower

Conical horn antenna /  
Flange type output

Protective Isolator  
TTL Modulation

THz source

**140** GHz

~ 30 / 90 mW  
output rfpower

Conical horn antenna /  
Flange type output

Protective Isolator  
TTL Modulation

THz source

**200** GHz

~ 10 / 50 mW  
output rfpower

Conical horn antenna /  
Flange type output

TTL Modulation

THz source

**300** GHz

~ 10 / 25 mW  
output rfpower

Conical horn antenna /  
Flange type output

TTL Modulation

## 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.