TERAHERTZ SOURCES

- **IMPATT technology**
- **100** GHz**, 140** GHz, **200** GHz, **300** GHz, and **600** GHz **available frequencies**
- **Protective isolator for enhanced stability**
- **TTL Modulation**
- **High-frequency modulation option (100 MHz, 1.5 ns rise/fall time)**
- **Detachable horn antenna**
- **Low cost and compact size**
- **1 year warranty**

TeraSense series of terahertz sources (IMPATT diodes) are silicon double drift diodes with a 0.6 um transit region, mounted on the copper heat sink. The layers in double-drift diodes are a heavily doped (p+)-region, a moderately doped p-region, a moderately doped n-region, and a heavily doped (n+)-region. The (p+) — and (n+) — 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 the terahertz source. The upgraded IMPATT diode is outfitted with a protective isolator, which significantly improves output power stability. From now on you can order an IMPATT diode with either an open WR- flange or detachable horn antenna of your choice. Typical output rfpower of THz source with optimized frequency @ 100 GHz can reach up to 2 W.

THz source **100** GHz

> 80 / 180 / 400 mW
0.8 W / **1.8 W**
output power

Conical horn antenna /
Flange type output

Protective Isolator
TTL Modulation

THz source **140** GHz

> 30 / 80 / 180 mW
400 mW
output power

Conical horn antenna /
Flange type output

Protective Isolator
TTL Modulation

THz source **200** GHz

> 40 / 70 / **200 mW**
output power

Conical horn antenna /
Flange type output

TTL Modulation

THz source **300** GHz

290 GHz > 10 mW
290 GHz > 30 mW
290 GHz **> 50 mW**

Diagonal horn antenna /
Flange type output

TTL Modulation

THz source **600** GHz

580 GHz > **1.5 mW**
output power

Diagonal horn antenna /
Flange type output

TTL Modulation

Add-on options

Horn antennas
Gain: 20-25 dB

External modulator
Base frequency: 85-100 GHz, 140 GHz
Modulation frequency: <200 MHz
Switching time: <2 ns
Insertion loss: <1.5 dB

TeraSense
Terahertz imaging systems

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