

Quasi-Optical THz Detector Type 3DL 12C LS2500 A1M

Product Description

High sensitivity in ultra-wide frequency band and room-temperature operation make ACST Schottky-barrier diode (SBD) based Quasi-Optical detectors the best alternative to available free-space detectors for the low-THz frequency-region. Bias-free operation allows for system simplicity and ultra-low noise. In contrast to typical THz detectors, the ACST SBD solution is simpler, geometrically smaller, and much faster.

ACST optionally offers also a dedicated power supply unit, which considerably simplify the detector installation and exploitation in customer setups. Detector output is connected to a SMA connector, female.



Fig. 1: A1/A1M/A2 Detector

Application Areas

- THz-imaging systems
- Fast THz screening
- THz spectroscopy

Product Features

- Ultra-Wideband: 50 GHz – 2.5 THz in single device.
- Much faster than Golay-Cell detector.
- Much higher sensitivity than pyroelectric detector.
- Operates at room temperature.
- Compact, low power-consumption, simple operation.

Technical Specifications	
Lens Diameter (mm)	12
Lens Type	Collimated
Antenna Type	Log-spiral
Antenna Bandwidth (GHz)	50-2500
Videoamplifier Bandwidth	10 Hz to 50 MHz (DC-Coupled)
Power Supply (V)	+/- 12
Recommended max. Output Voltage (V)	± 0.3
Current Consumption (mA)	30 max
Responsivity (V/W)	3500±200@70GHz/100±30@1000GHz
Noise-equivalent Power (pW/Hz ^{1/2})	15 min
Responsivity Measured at (°C)	25

Typical Performance

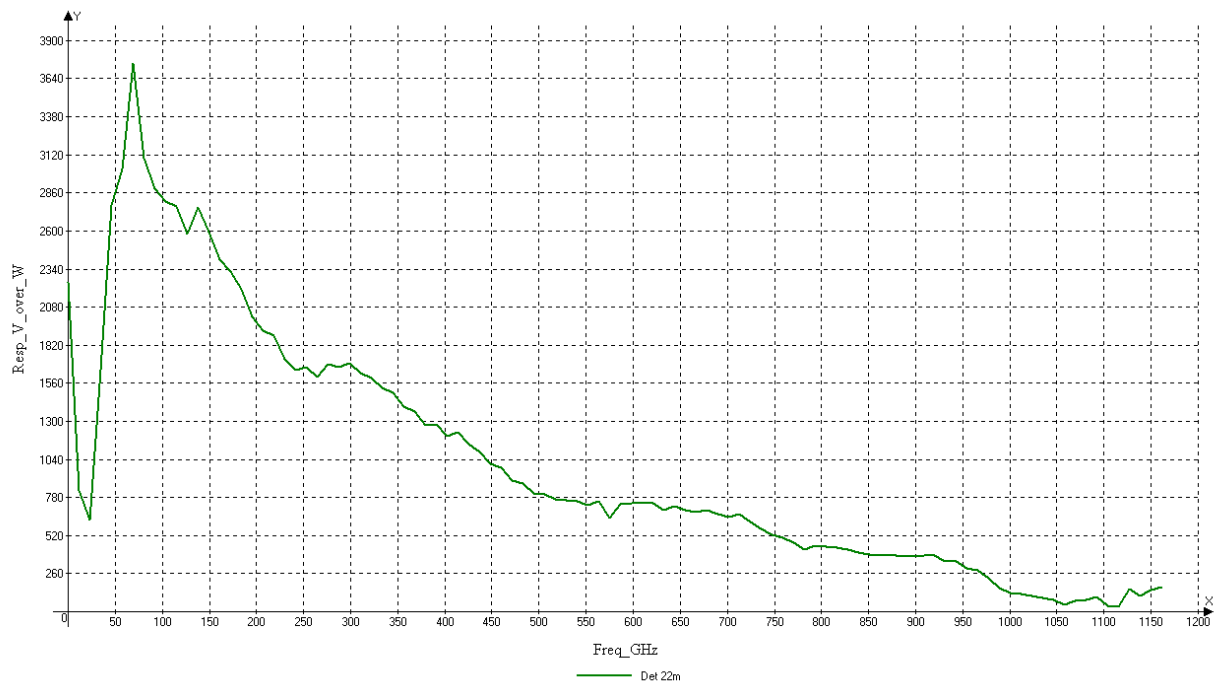


Fig. 2: A1M Responsivity vs. Frequency

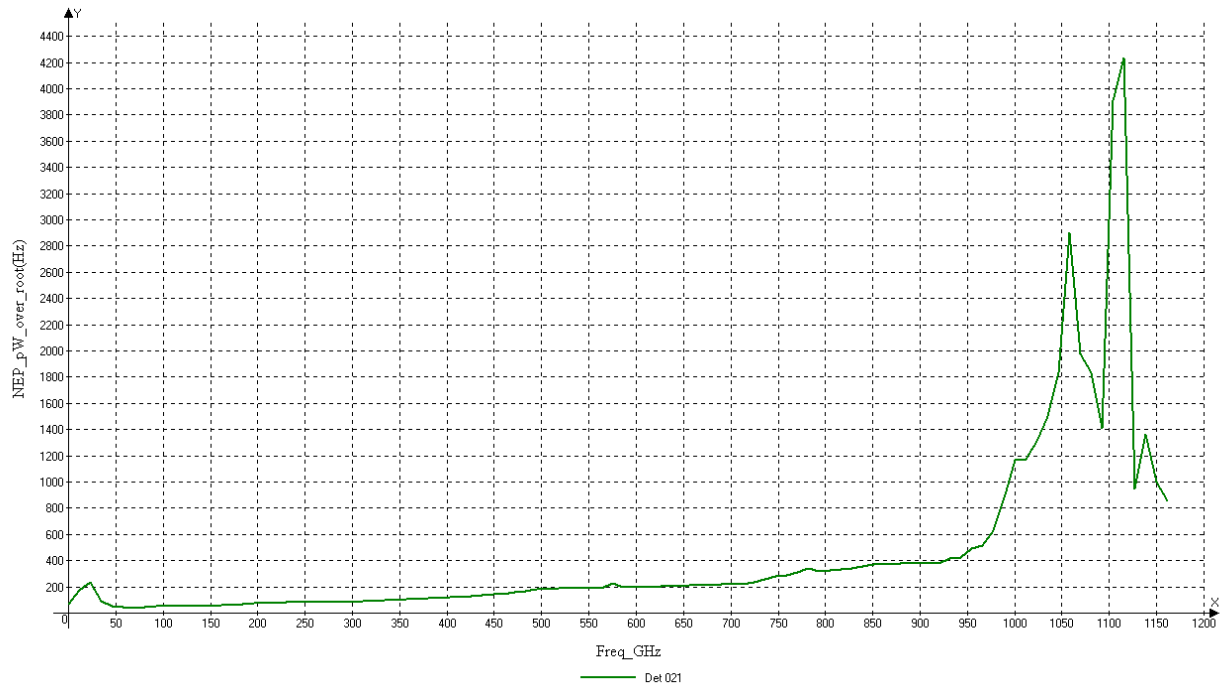


Fig. 3: A1M NEP vs. Frequency

Mechanical Outlines

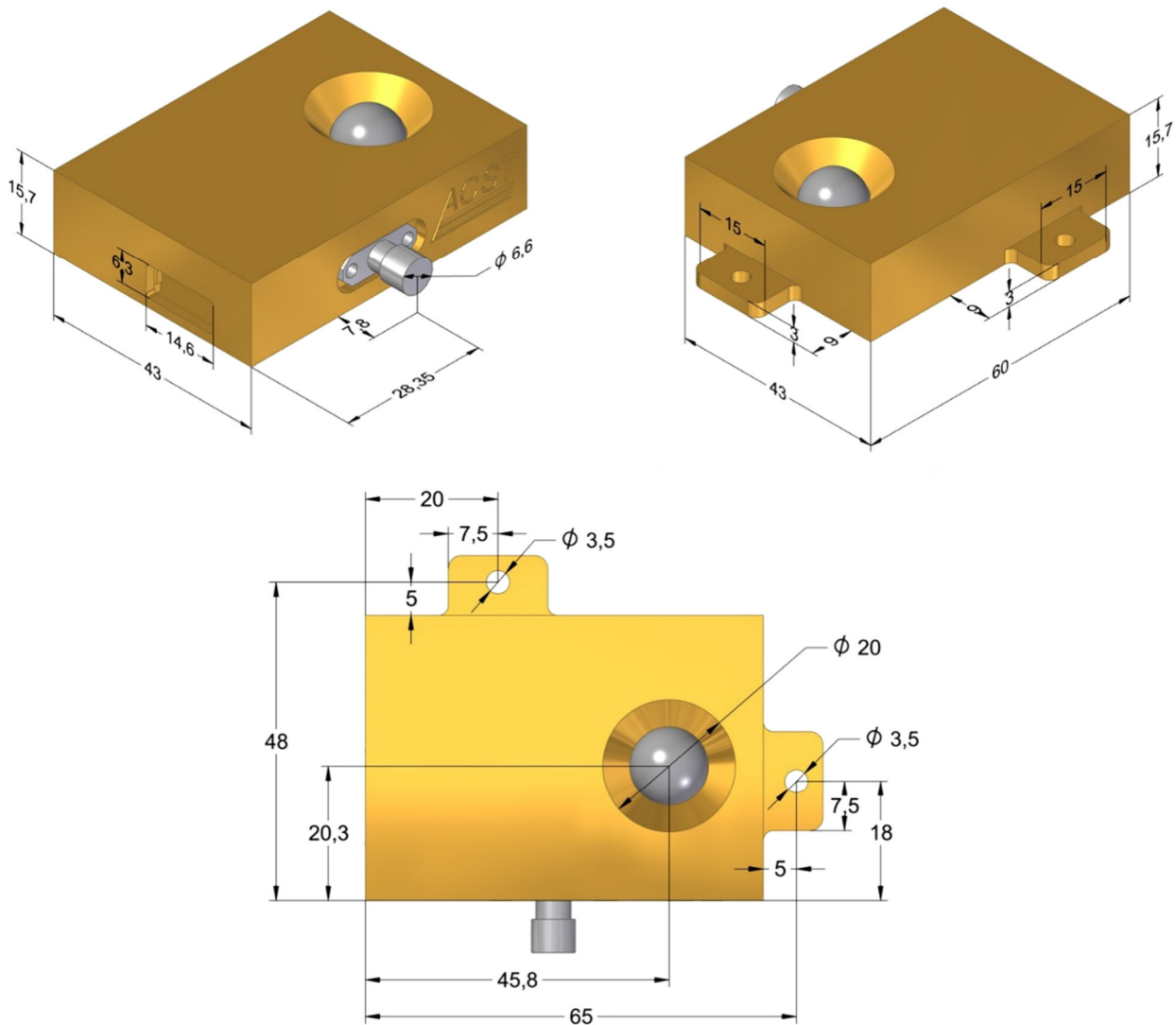


Fig. 4: A1/A1M/A2 Detector. Dimensions in mm.

Notes:

- All plotted data represent typical values. The actual data may vary from unit to unit.
- All tests are carried out at a room temperature of 24 °C.
- ACST reserve the right to change the information presented here without notice

Caution:

- Absolute maximum ratings should not be used under normal operating conditions. Exceeding maximum ratings may lead to permanent failure.

