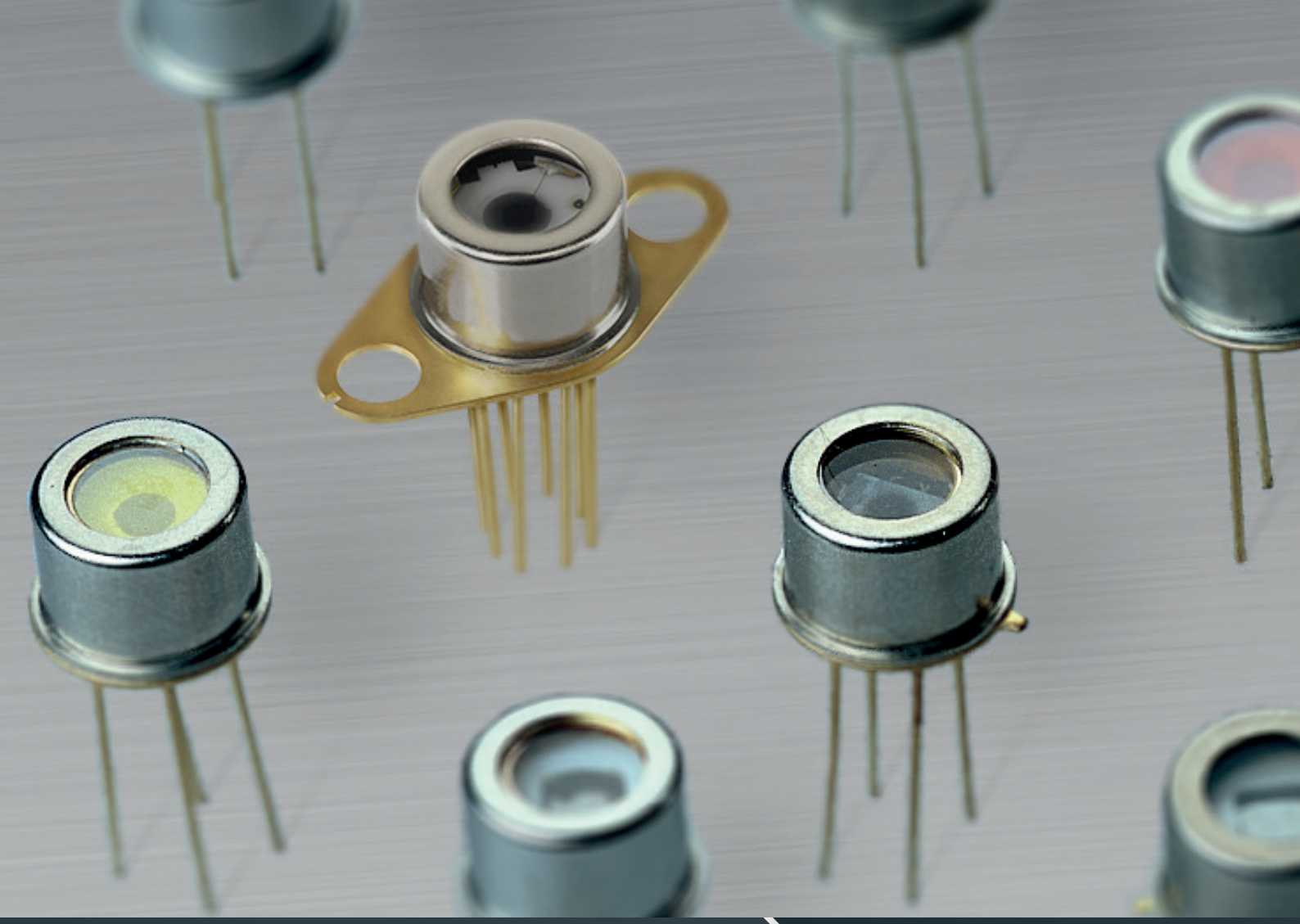


LEONARDO ELECTRONICS

DLATGS

Infrared detectors

LEONARDO

DLATGS detectors

We are a leading manufacturer of DLATGS detectors for Infrared (IR) spectrometers. This position has been achieved by supplying high performance detectors at competitive prices to major IR spectrometer manufacturers all over the world.

The crystal growth process for DLATGS (deuterated L-alanine doped triglycine sulphate) detectors was developed by the company, and unrivalled production skills have enabled the business to continue to expand.

DLATGS detectors are pyroelectric and can be operated uncooled or with temperature stabilisation.

They are supplied in a range of element sizes with options of hermetic sealing, parylene coating, filter material, pin configuration and performance characteristics.

We are the leading supplier of high performance DLATGS detectors for use in FT-IR instruments.

All of the standard build pyroelectric detectors are EU RoHS compliant.

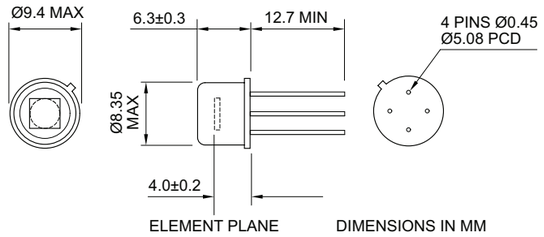
The DLaTGS detectors design and manufacturing activity within the Electronics UK Business Unit of Leonardo is approved to AS9100D and ISO 9001:2015 plus ISO 14001:2015, ISO 45001:2018 and BS EN ISO 50001:2018 Quality Management Systems standards.

Technical specification

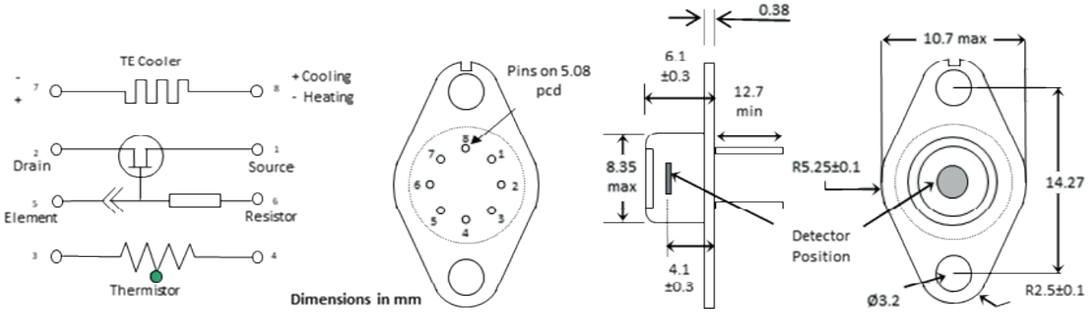
Electrical	
Recommended supply voltage	+8 to 10V
Maximum supply voltage	+25V
Typical output impedance	3.5kΩ
Recommended source load resistor	47kΩ
Integral JFET Pre-amplified	
With gate resistance of 10 or 30GΩ	99 series
With gate resistance of 100GΩ	106 series

Environmental	
Operating temperature	-20°C to 55°C
Storage temperature	-20°C to 70°C
Humidity	<50% RH (<30% RH for CsI windows)
Operating frequency range	10Hz to >20KHz

Standard detector - T05 package

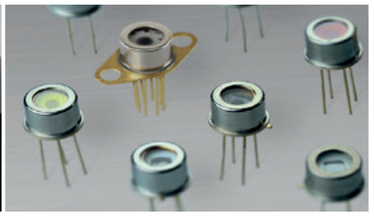


Temperature stabilised - T038 package



KEY FEATURES

- → DLATGS is one of the highest performing commercially available pyroelectric materials
- → Doped with Deuterium to raise Curie temperature to ~ 59°C
- → Doped with L-alanine to prevent permanent depoling after excursions above Curie temperature
- → Broad spectral response 1.0µm to >100µm
- → Supplied in industry standard TO5 package
- → Option of Temperature stabilisation available in TO38 package
- → Variety of pinning configurations
- → Range of thermal time constants from 18ms to 140ms
- → Range of element sizes from 0.25mm to >4mm, round, square and rectangular
- → Choice of window materials
- → Custom designs considered
- → Hermetic sealing of window, or Parylene coating for improved environmental durability



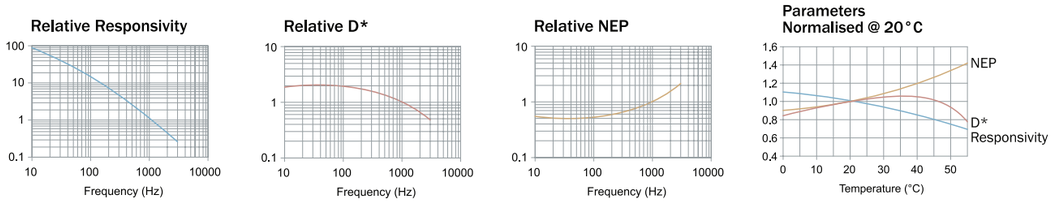
PERFORMANCE

Typical Performance Data for 2mm diameter element, excluding window:

Detector Series	Performance Category	Thermal Time Constant	10 Hz		100 Hz		1000 Hz	
			Responsivity V/W	D* 10E8cm√Hz/W	Responsivity V/W	D* 10E8cm√Hz/W	Responsivity V/W	D* 10E8cm√Hz/W
99	High Energy	18 ms	2440	6.6	300	6.6	30	3.5
106	Low Frequency	140 ms	2150	18	215	9.8	21.5	2.6

NOTE:
- → All measurements refer to unity gain at the detector
- → Test data obtained using a Black Body test
- → Noise related measurements correspond with unit bandwidth
- → Measurements taken at 22°C

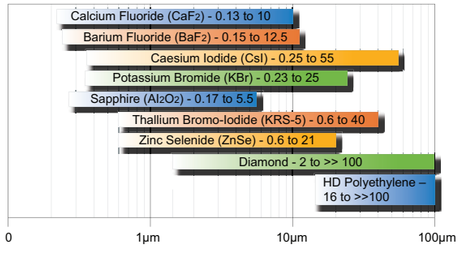
Typical Relative Responsivity, D* and NEP for Detector Series 99



Windows

Available windows include: CsI, KBr, KRS-5, CaF_2, BaF_2, ZnSe, ZnSe-Ar, Diamond, Polyethylene and Sapphire.

Other materials or lenses may be available on request. For greater environmental durability, soft materials may be coated with Parylene, and harder materials may be hermetically sealed.



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