

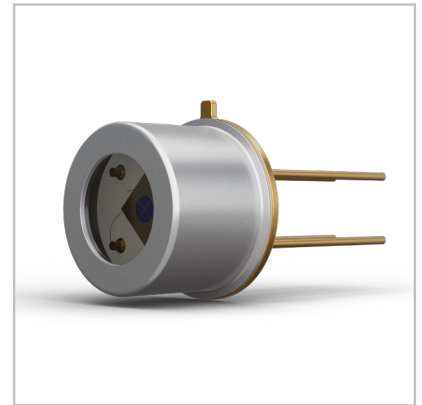
ALT31/ALUT31 Series Advanced Single Channel Voltage Mode Pyroelectric Detectors

Description

Our ALT31/ALUT31 series of pyroelectric detectors are high end single channel devices based on thin and ultrathin LTO material operating in voltage mode with an integrated JFET.

Features

- Thermal based detector, any radiation absorbed produces a signal
- Wide spectral coverage from the UV to LWIR
- Modular design principle
- Assembled in an ISO:9001 certified facility
- Microphonics reduction as standard
- Typically higher D^* than standard LTO
- **Advanced technology:**
sub-pixel binning segmentation results in a Signal to Noise improvement of 2x (compared to unsegmented detectors)



Applications

- FTIR spectroscopy
- Non-dispersive infrared spectroscopy
- THz detection

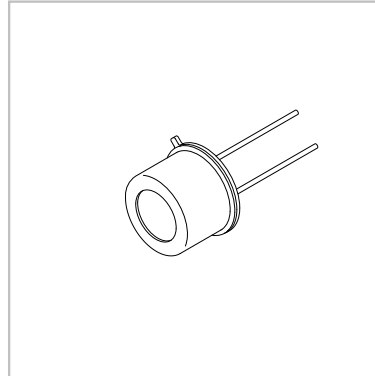
Versions

- Wide range of filter and window options
- Full spectrum IR through THz options available

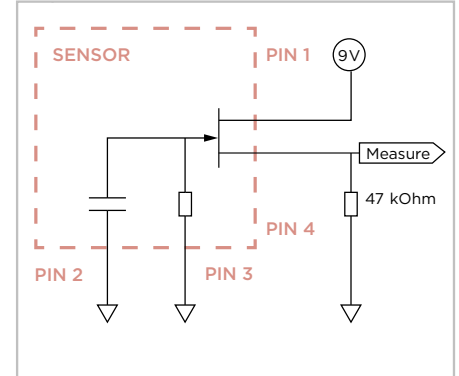
ALT3151X

- Single channel thin chip LTO pyroelectric detector
- Voltage mode
- Without TFC
- For FTIR, TDLS
- High frequency applications
- Alternative to DLATGS for FTIR applications
- Fast response to IR flux change

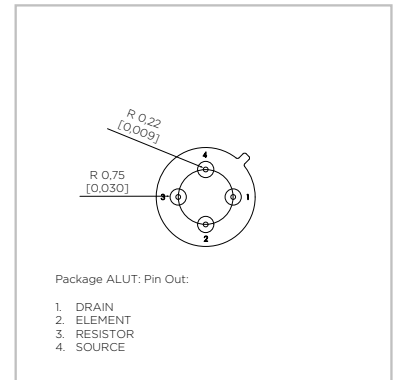
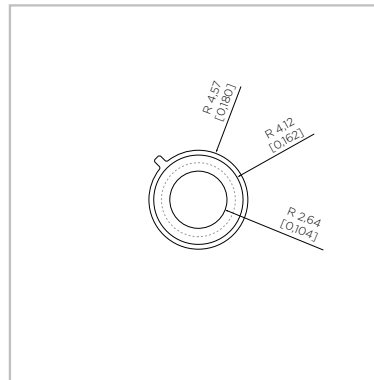
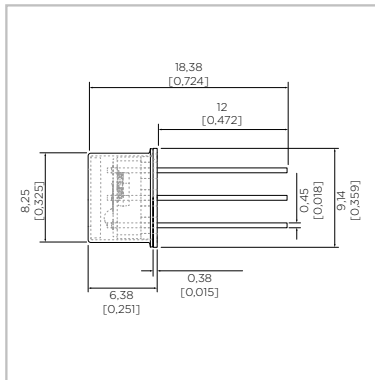
Isometric Drawing



Circuit Diagram



Technical Drawing (Units: mm [inch])



Part	Element Size	Aperture Size*	Package	Absorber
ALT3151X2000	Dia. 2.0 mm	Dia. 5.3 mm	TO-39 4-pin	Nanostructured Metal black

Load Resistor	Amplifier	Supply Voltage [V]	Polarity
10 GOhm	JFET 2	+9 V (recommended) (max. 25 V)	Negative

Part	Responsivity** [V/W] @ 1 kHz Typ.	D* (Jones) @ 1 kHz		FOV*** [°]	NEP [W/√Hz] @ 1 kHz Typ.
		Min.	Typ.		
ALT3151X2000	13	1.0E+08	1.3E+08	82	1.4E-09

* Please refer "Filters and Windows" datasheet for all available options (aperture size depends on filter/window option chosen)

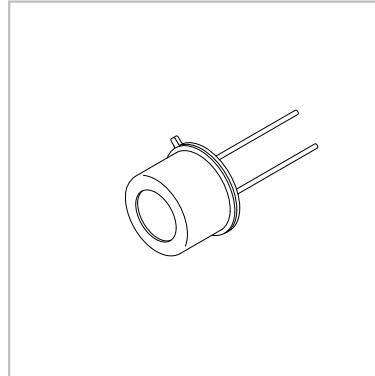
** without window/filter

*** with KBr window

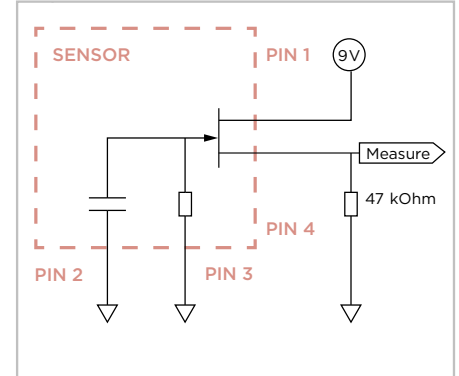
ALUT3151X

- Single channel ultra thin chip LTO pyroelectric detector
- Voltage mode
- Without TFC
- For FTIR, TDLS
- High frequency applications
- Alternative to DLATGS for FTIR applications
- Ultra thin LTO (2 microns) active element
- Fast response to IR flux change

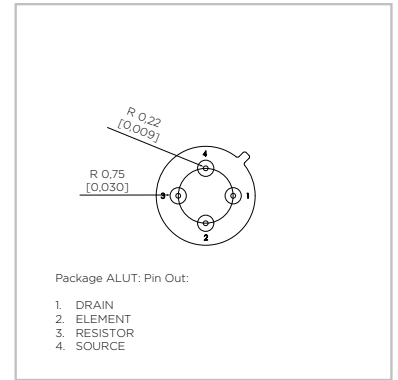
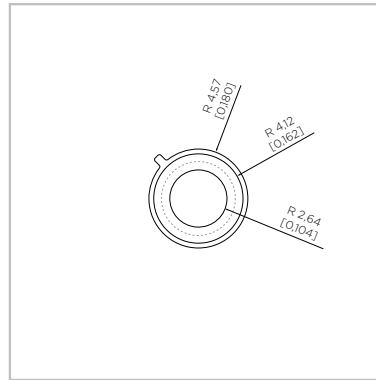
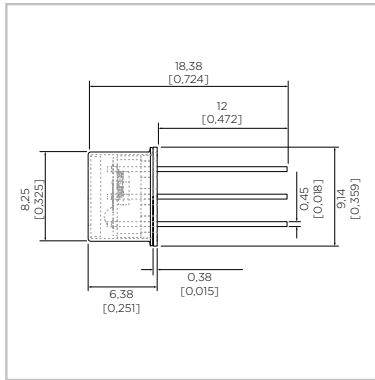
Isometric Drawing



Circuit Diagram



Technical Drawing (Units: mm [inch])



Part	Element Size	Aperture Size*	Package	Absorber
ALUT3151X1300	Dia. 1.3 mm	Dia. 5.3 mm	TO-39 4-pin	Nanostructured Metal black

Load Resistor	Amplifier	Supply Voltage [V]	Polarity
10 GOhm	JFET 2	+9 V (recommended) (max. 25 V)	Negative

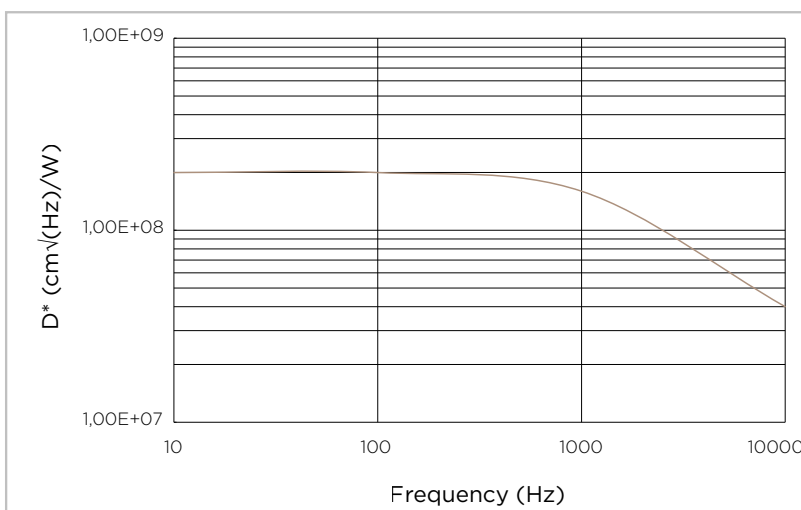
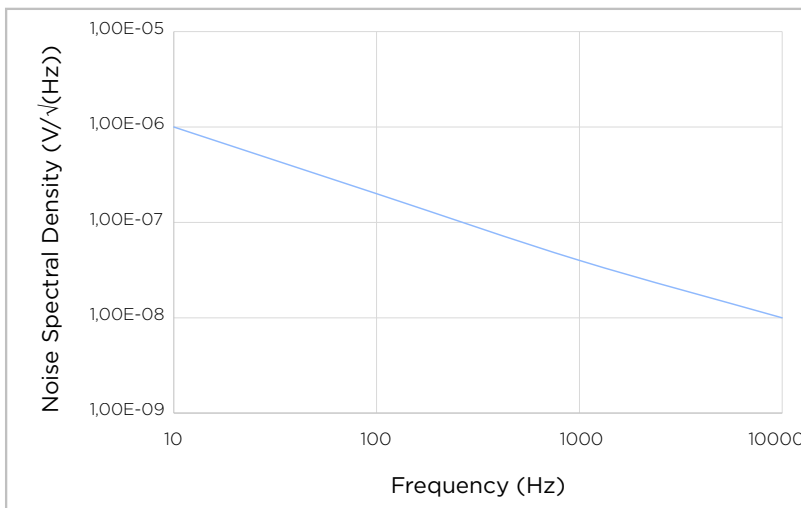
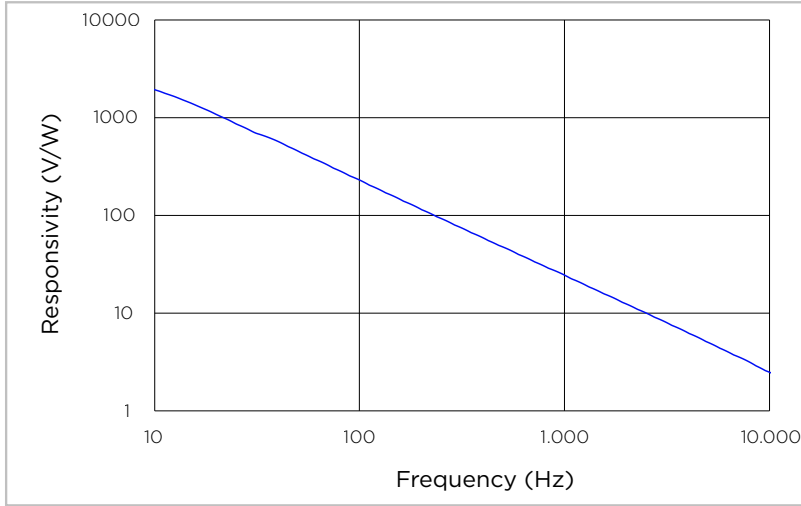
Part	Responsivity** [V/W] @ 1 kHz Typ.	D* (Jones) @ 1 kHz		FOV*** [°]	NEP [W/√Hz] @ 1 kHz Typ.
		Min.	Typ.		
ALUT3151X1300	23	1.6E+08	1.8E+08	89	7.0E-10

* Please refer "Filters and Windows" datasheet for all available options (aperture size depends on filter/window option chosen)

** without window/filter

*** with KBr window

ALUT3151X1300-k2: Detector Performance over Modulation Frequency



Absolute Maximum Ratings

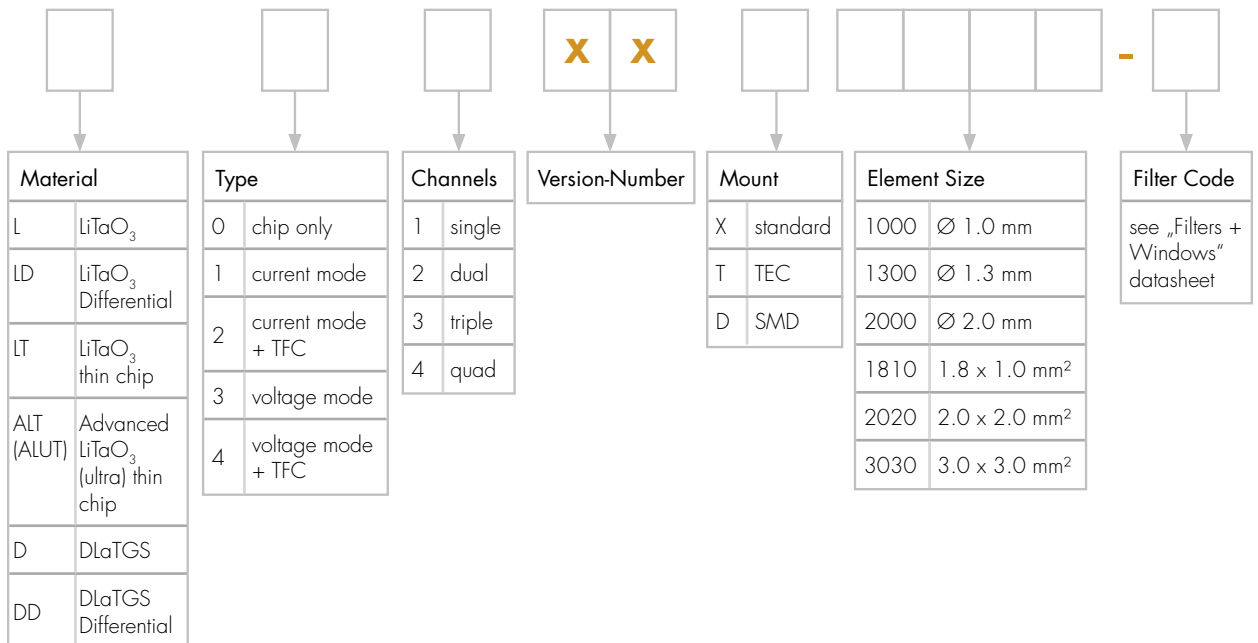
	Min	Max
		ALT31/ALUT31
Storage temperature [°C]	- 25	+ 55
Operating temperature [°C]	- 20	+ 55
Soldering temperature, 5 sec [°C]	+ 280	+ 300
ESD damage threshold, Human Body Model Class* [V]	0	< 250

* ANSI/ESD STN5. 1-2007

Handling

ESD sensitive device. High electrostatic discharge can damage or degrade the device. Use proper ESD handling precautions.

Part Number Designation



Product Changes

LASER COMPONENTS reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application.

Ordering Information

Products can be ordered directly from LASER COMPONENTS or its representatives. For a complete listing of representatives, visit our website at www.lasercomponents.com

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