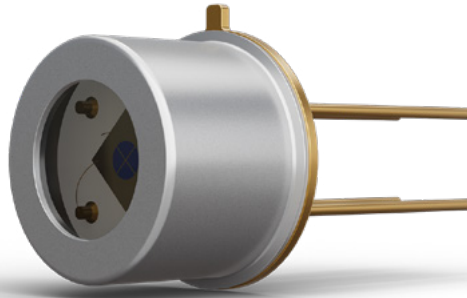


DD31 SERIES

VOLTAGE MODE DIFFERENTIAL DLaTGS

Pyroelectric Detectors



Our DD31 series pyroelectric detectors are offered with a DLaTGS crystal element operating in voltage mode with an integrated low noise 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
- / 1.3 mm diameter with absorbing metal black
- / Two source output with opposite polarity
- / Variety of infrared windows available

APPLICATIONS

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

SPECIFICATIONS DD3151X

- / Single channel DLaTGS pyroelectric detector
- / Voltage mode
- / Without TFC
- / For FTIR, TDLS
- / High frequency applications

All values are typical, except for Combined Responsivity which is the minimum value.

Part	DD3151X1300
Element size Ø [mm]	1.3
Aperture size Ø [mm] ¹	5.3
Package	TO-39 4-pin
Absorber	Metal black
Load Resistor [GOhm]	10
Amplifier	JFET 2
Supply Voltage [V]	+9 (recommended; max. 25)
Combined Noise Density [nV/Hz ^{1/2}]	40
Responsivity Channel 1 [V/W]	25
Responsivity Channel 2 [V/W]	25
Combined Responsivity [V/W]	45
Combined Detectivity D* [cmHz ^{1/2} /W]	2.0 E+08

¹ Please refer to »Filters and Windows« datasheet for all available options (aperture size depends on filter/window option choosen)

Absolute Maximum Ratings

	Min.	Max.	
		D31/DD31	L31/LT31
Storage temperature [°C]	-25	+40 ³	+60 ²
Operating temperature [°C]	-20	+55	+85
Soldering temperature, 5 seconds [°C]	280	+300	+300
ESD damage threshold, Human Body Model Class ¹ [V]	0	<250	

¹ ANSI/ESD STN5.1-2007

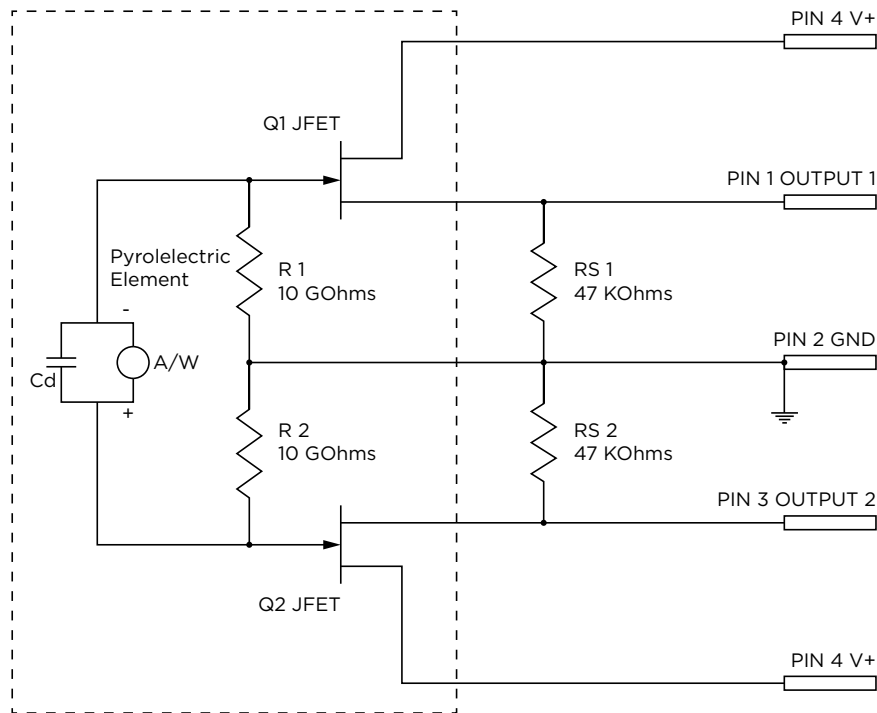
² Limited by packing materials

³ High Temperatures can cause depoling of the DLaTGS crystal

PYROELECTRIC DETECTORS

DD31 Series Voltage Mode Differential DLaTGS

Circuit Diagram



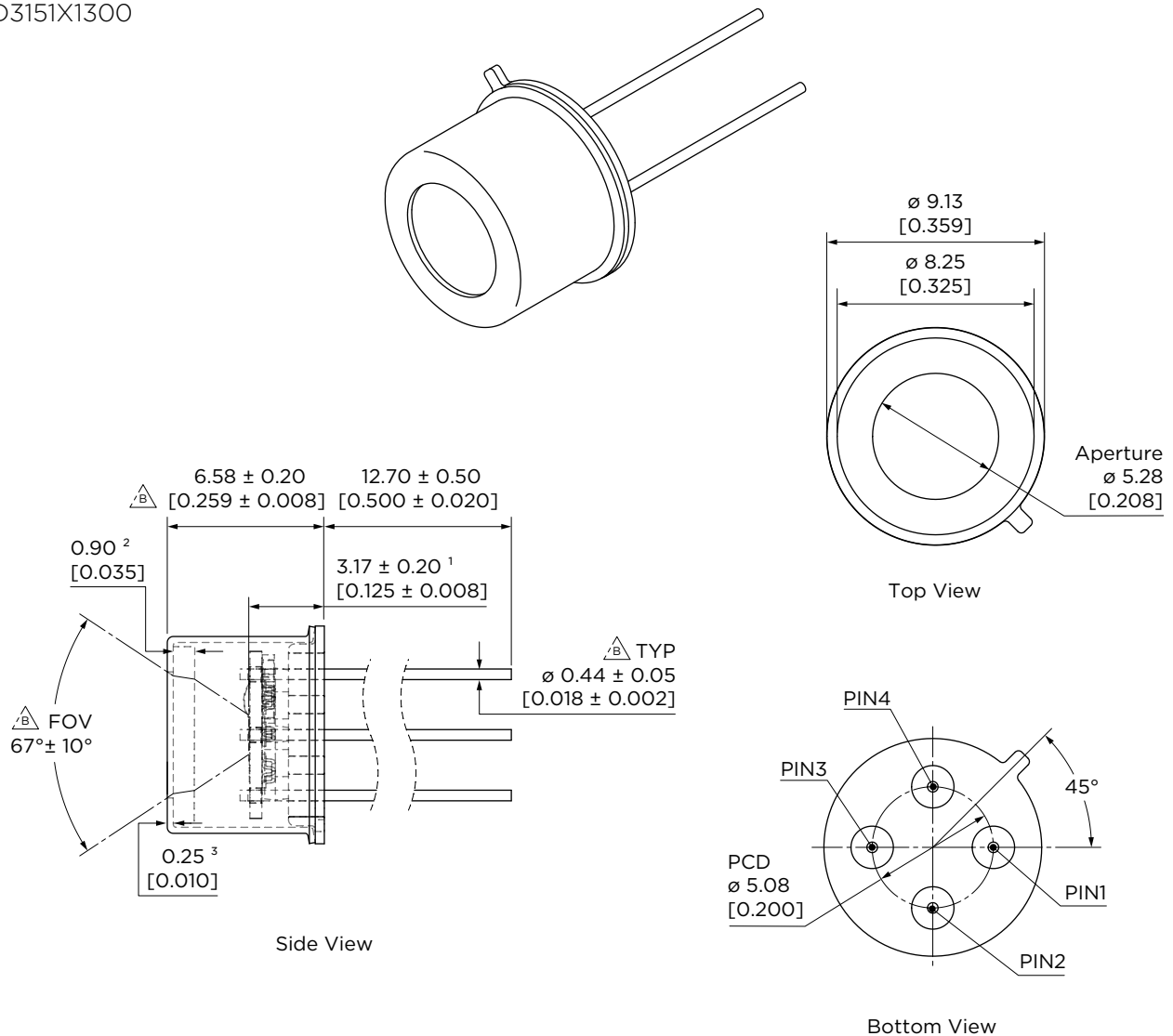
PYROELECTRIC DETECTORS

DD31 Series Voltage Mode Differential DLaTGS



TECHNICAL DRAWING

DD3151X1300



100528-POD

Pin out:

1. Output 1
2. Ground
3. Output 2
4. V+

Units: mm [inch]

Dimensions are in millimeters - [inches] and are for reference only.

¹ Distance from top of active area to bottom of header

² KBr window thickness, 0.2° wedged, measured at thickest edge

³ Distance from top of device to top of window

ORDERING CODE

Material	Type	Channels	Version Number	Mount	Element Size	Filter Code
X	X	X	X	X	X	X
L LiTaO ₃	0 Chip only	1 Single		X Standard	1000 Ø1.0 mm	see »Filters and Windows« datasheet
LD LiTaO ₃ + Differential	1 Current mode	2 Dual		T TEC	1300 Ø1.3 mm	
LT LiTaO ₃ Thin Chip	2 Current mode + TFC	3 Triple		D SMD	2000 Ø2.0 mm	
D DLaTGS	3 Voltage mode	4 Quad			1810 1.8×1.0 mm ²	
DD DLaTGS + Differential	4 Voltage mode + TFC				2020 2.0×2.0 mm ²	
					3030 3.0×3.0 mm ²	

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
Custom designed products are available on request.

LASER SAFETY

Personal Hazard

Depending on the mode of operation, these devices emit highly concentrated non visible infrared light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 »Safety of laser products«.



Handling Precautions

Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload.

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

