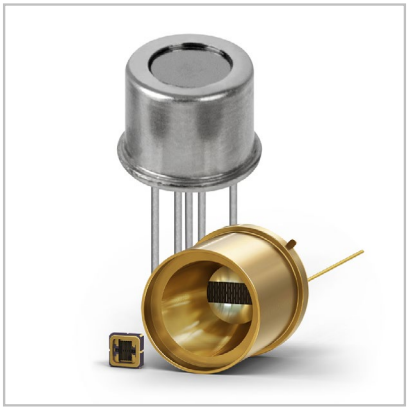
LASER COMPONENTS®

High-end IR Components
IR Components for 5 Hz / 5 µm | 55+ Series

Infrared Components for Slow | 5 Hz and Long | 5 µm+ IR-Wavelength Applications

Description



This series contains selected emitter and detector versions that are improved state-of the art.
The emitters from Infrasolid have almost ideal emissivity (preferred at 5 Hz) and with the smd package it opens the door to new applications.

The pyroelectric detectors are adjusted to have high dynamic range thus the high emitting power of the thermal IR light source is fully usable.
Pyrodetectors with different configurations such as differential, dual or quad are available.
The series is completed by several selected accessories.

Components

- IR-Emitters
  Power series: HIS2000R-0WC
  SMD series: HIS180smd

- Pyro Detectors
  Differential: LD2100, LD2101
  Multi Channel: L2201, L2411

- Accessories
  Circuit board for HISpower, HISsmd
  Filter: AR Silicon 2–12 µm

Target Stories

- Measurements above 5 µm that require slow components
- Improvement of existing applications
- Development of new applications

04/23 / V2 / MB-IF / lc-pyros/ir-components-5hz-5um

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

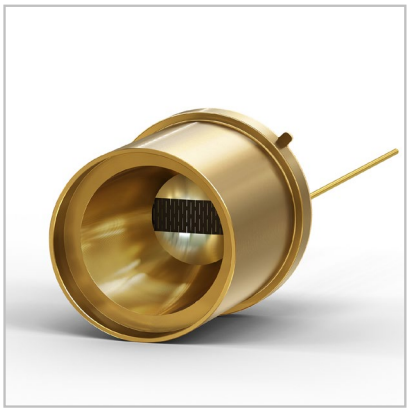
Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

IR-Emitters

Key Features

- Pulsable thermal black-body infrared source
- Patented nanostructured radiating element achieves up to 500% more detection signal!
- Wide wavelength range enables a broad range of applications



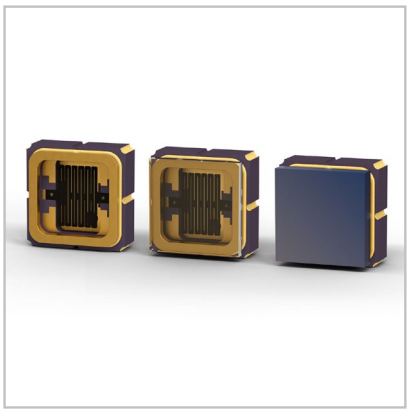
HIS2000R-0WC

HISpower Series

- Mounted in an industry standard TO-8 package
- Integrated gold plated reflector
- Lower radiating element temperature of 630 °C increases lifetime
- Featured versions:
  HIS2000R-0WC (open version, with Winston cone collimator)

HISsmd Series

- Mounted in an SMD package with a size of 3 x 3 mm^2
- Innovative surface technology for customized SMD products
- Enables applications in mobile, portable devices and various wearables
- Featured versions:
  HIS180smd
  HIS180smd array (in progress)



HIS180smd

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

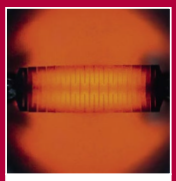
HIS2000R-0WC

Thermal infrared emitter with gold plated reflector and Winston cone collimator

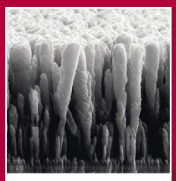
Our HIS2000R-0WC is a NiCr filament based thermal emitter in a TO8 package, with a gold plated reflector as well as a gold plated Winston cone collimator. While the reflector directs the radiation emitted from the rear of the filament to the front, the Winston cone collimator bundles and focuses the beam for maximum optical performance. The open emiter offers high power for a wide spectral measuring range.

HIS*power* series emitters have an integrated gold plated reflector that directs the radiation emitted from the rear to the front in order to achieve maximum efficiency. All our emitters offer minimum drift at constant resistance (Ohm). Infrasolids IR emitters are characterized by a very low temperature coefficient of electrical resistance. Therefore the hot resistance and the cold resistance are almost identical which eases the electrical control of the IR sources.

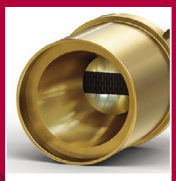
Key features



High radiant power



High efficiency



Low Cost

- **Pulsable thermal black-body infrared source mounted in an industry standard TO-8 package.**
- **Patented nanostructured radiating element achieves up to 500% more detection signal!**
- **Lower radiating element temperature of 630 °C increases lifetime!**
- **Wide wavelength range enables a broad range of applications.**

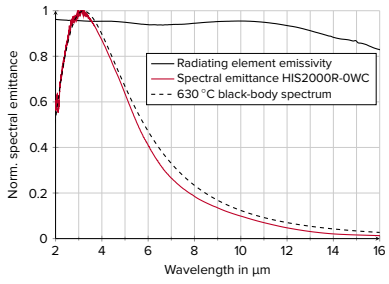
innovative infrared sources for gas detection & spectroscopy

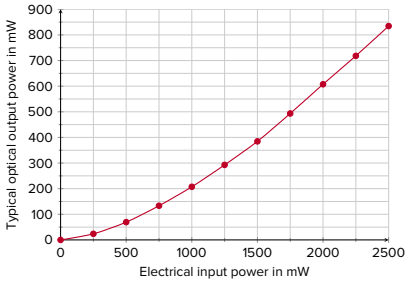
Main specifications

Parameter	HIS2000R-0WC
Package	TO-8
Radiating element area	40 mm²
Radiating element emissivity	> 0.9
Radiating element temperature	630 °C at 2.5 W
Optical output power	up to 830 mW
Max. electrical power (DC)	2.5 W
Max. electrical voltage	3.8 V
Max. electrical current	660 mA
Electrical resistance	5...6 Ω
Modulation frequency*	4 Hz
Filter/Window	None
Wavelength range	2 to 20 µm

* 50 % modulation depth, square wave signal, 50 % duty cycle

Optical specifications





Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

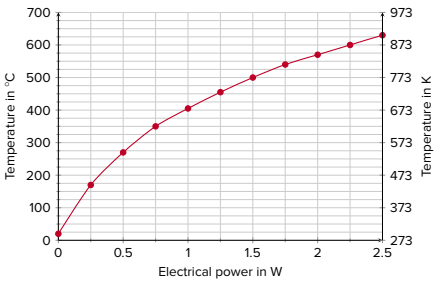
France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

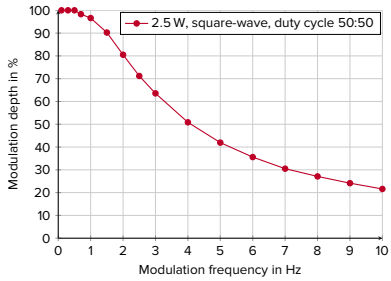
Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

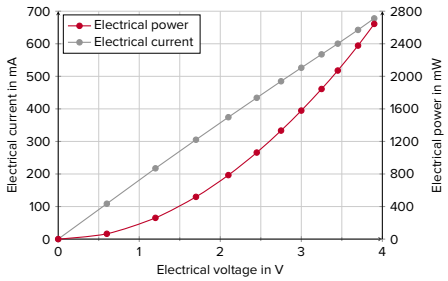
Radiating element temperature



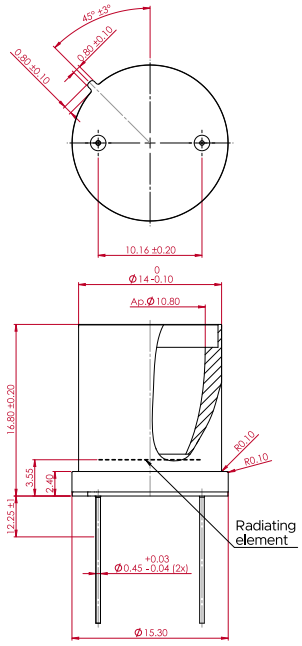
Modulation depth



Electrical specifications



HIS2000R-0WC



Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

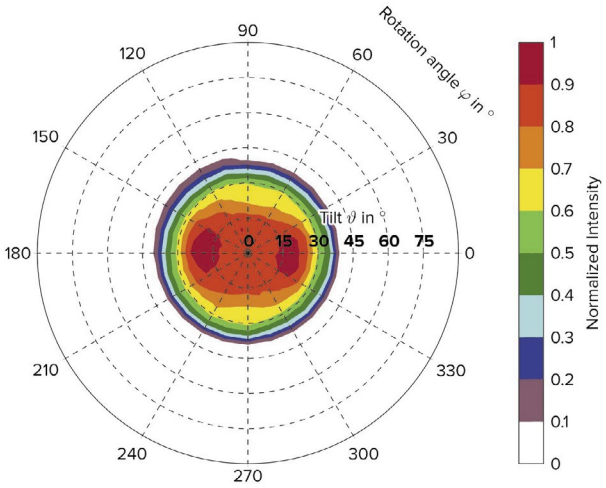
France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

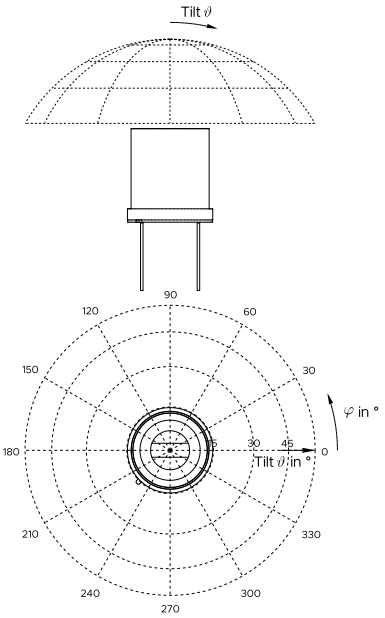
United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

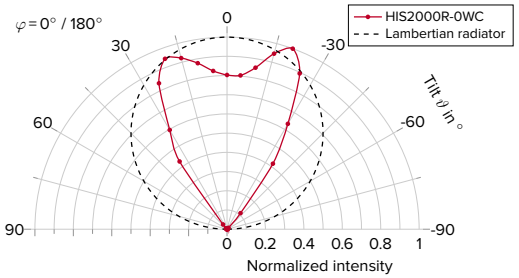
Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

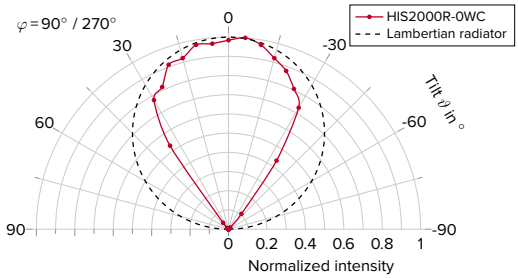
USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

Angular radiation distribution









Operating mode recommendation:

All our IR sources can be driven in electrical voltage, current or power regulated mode. The application decides whether the operating mode is DC or AC (pulsed). Depending on the drive mode and the applied electrical power the electrical resistance of the IR emitter can change over time. For highest measurement accuracy a power regulated mode is always recommended for thermal IR emitters. However, it is the most complex operating mode and not suitable in all applications.

For applications that require a small and low-cost driving circuit with a maximum stability we have a technical note with an adjustable low dropout voltage (LDO) regulator.

For further information please refer to:
www.infrasolid.com/technicalnote

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

HIS180smd

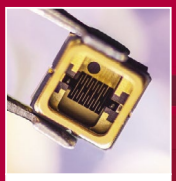
Thermal infrared emitter in standard 3x3 mm² SMD, gold plated

HIS*smd* series emitters are small, powerful infrared radiation sources that meet the demands for reliable miniaturized gas sensors and offer a wide range of new application scenarios. The low energy consumption, the high efficiency and the small size allow the use in portable, battery-powered, and mobile applications. These innovative infrared light sources are used, for instance, in respiratory gas analysis, e.g. for the detection of CO_2 and breath alcohol, and in Smart Home and Smartphone applications.

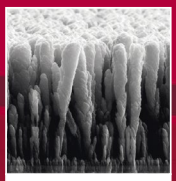
The pioneering SMD package enables a fully automated production in high-volume markets.

Infrasolid's infrared radiation sources are pulsable thermal emitters with a near black-body emittance. Based on a patented nanotechnology and a patented emitter set-up made of a high-melting metal, the free-standing monolithic radiating element and the nanostructured emitter surface offer numerous advantages in many applications.

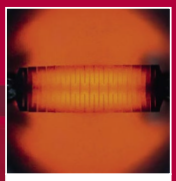
Key features



Very small size



High efficiency



High radiant power

- **Pulsable thermal black-body infrared source mounted in a SMD package with a size of 3x3 mm².**
- **Patented nanostructured radiating element achieves up to 500% more detection signal!**
- **Innovative surface technology for customized SMD products.**
- **Wide wavelength range enables applications in mobile, portable devices and various wearables, for miniaturized gas measurement sensors and hand-held spectrometers.**

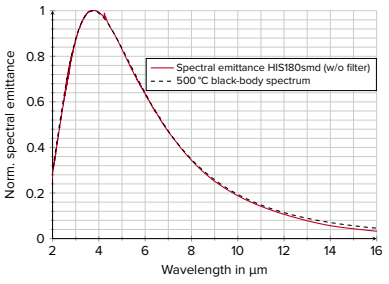
innovative infrared sources for gas detection & spectroscopy

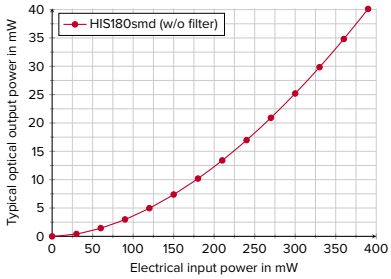
Main specifications

Parameter	HIS180smd
Package	SMD3
Radiating element area	1.8 mm²
Radiating element emissivity	> 0.9
Radiating element temperature	550 °C at 390 mW
Optical output power	up to 40 mW
Max. electrical power (DC)	390 mW***
Max. electrical voltage	2.8 V***
Max. electrical current	140 mA***
Electrical resistance	19...21 Ω
Modulation frequency*	8 Hz
Filter (**glued** window)	Si-ARC, Sapphire
Wavelength range	2 to 20 µm**

* 50 % modulation depth, square wave signal, 50 % duty cycle
** depending on filter transmissivity
*** for open emitters we recommend 2,6 V / 125 mA / 330 mW, which corresponds to an emitter temperature of 500 °C

Optical specifications





Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

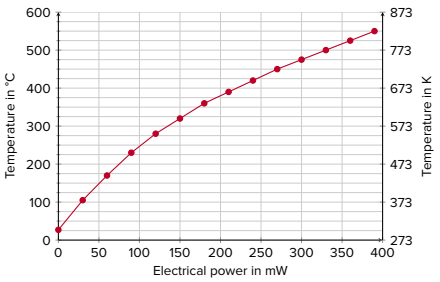
France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

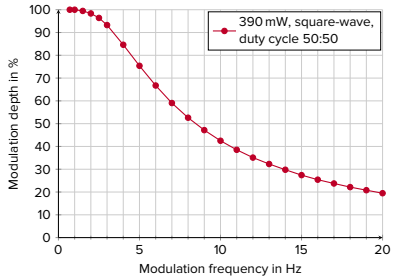
Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

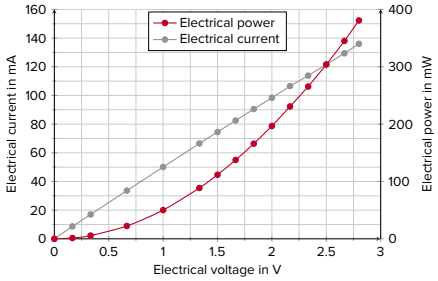
Radiating element temperature



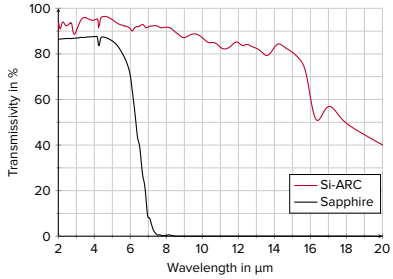
Modulation depth

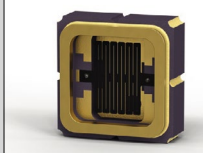
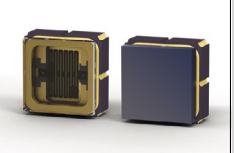


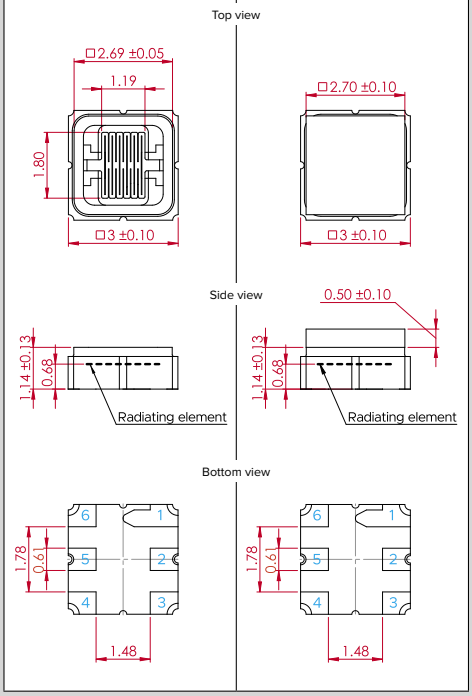
Electrical specifications



Window material transmissivity



HIS180smd	Window options
	
Without window	Si-ARC, Sapphire



Connection table

Lead	1	2	3	4	5	6
Connection	Case	Power 1	Case	Case	Power 2	Case

Ordering information

Type	Infrared window
HIS180smd-0	None
HIS180smd-A	Sapphire
HIS180smd-S	Silicon-ARC

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

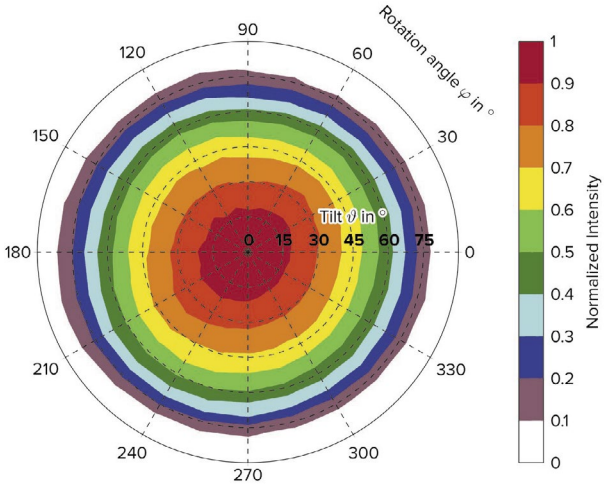
France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

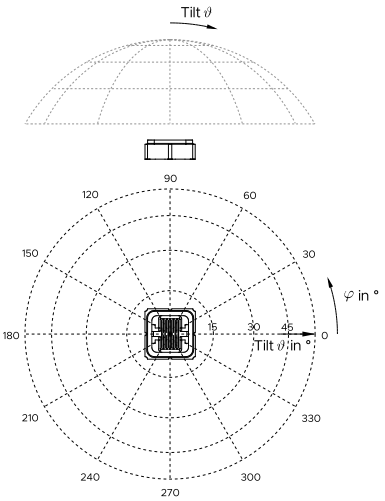
United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

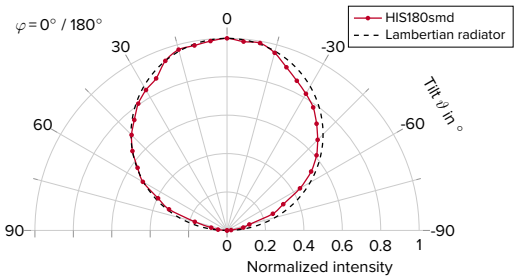
Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

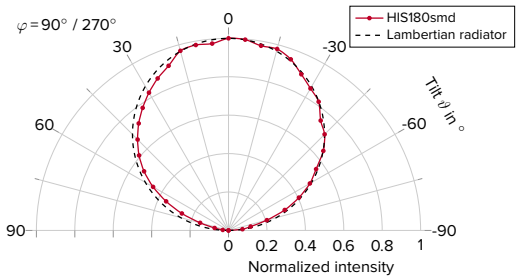
USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

Angular radiation distribution (without window)



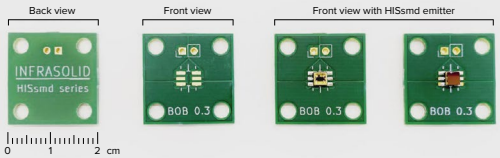






Breakout board:

For evaluation purposes we offer a breakout board (BOB) wich can be used to easy connect drivers and electronics for evaluation.



Operating mode recommendation:

All our IR sources can be driven in electrical voltage, current or power regulated mode. The application decides whether the operating mode is DC or AC (pulsed). Depending on the drive mode and the applied electrical power the electrical resistance of the IR emitter can change over time. For highest measurement accuracy a power regulated mode is always recommended for thermal IR emitters. However, it is the most complex operating mode and not suitable in all applications.

For applications that require a small and low-cost driving circuit with a maximum stability we have a technical note with an adjustable low dropout voltage (LDO) regulator.

For further information please refer to:
www.infrasolid.com/technicalnote

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

Pyroelectric Detectors

A pyroelectric detector is an AC thermal infrared detector, that absorbs infrared radiation, transfers it to a temperature change and generates an electrical signal that is proportional to the temperature change.

- Assembled in an ISO:9001 certified facility:
  Laser Components Detector Group, Arizona, USA
- $LiTaO_3$ and DLaTGS detectors
- Modular design principle
- Wide range of window and filter options

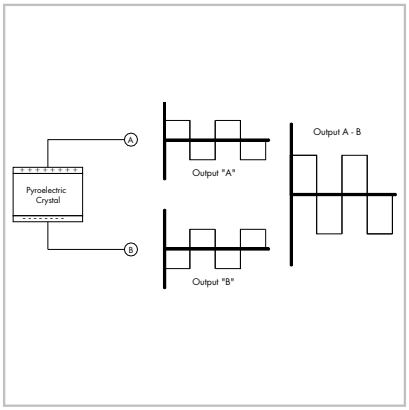
For 55+ series we feature:

Differential Single Channel Detectors:

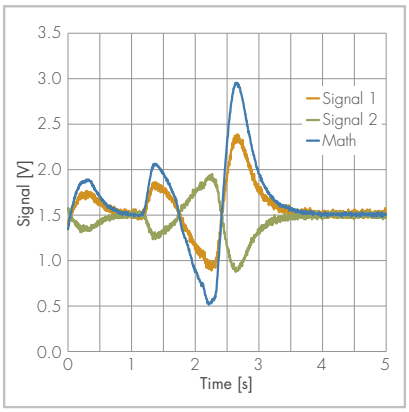
- Patented differential scheme
- 44 % improvement in SNR over non-differential version
- True differential with differential output for full flexibility and reduction of EMI or common mode rejection and ground noise
- Integrated Op-Amp, single supply

Multi Channel Detectors:

- Dual and Quad design
- Current mode, with TFC
- Specified @ 5 Hz
- Optimized for high IR emitter radiation



Demonstration of the effect on signal when both outputs are subtracted.



Common mode noise eliminated via. differential detector

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

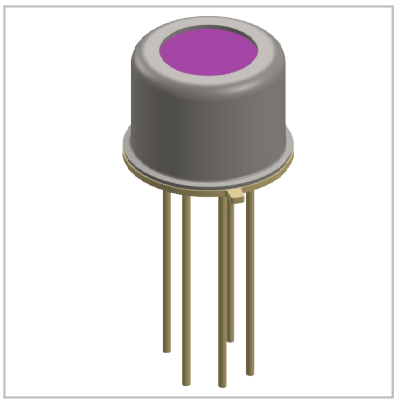
Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

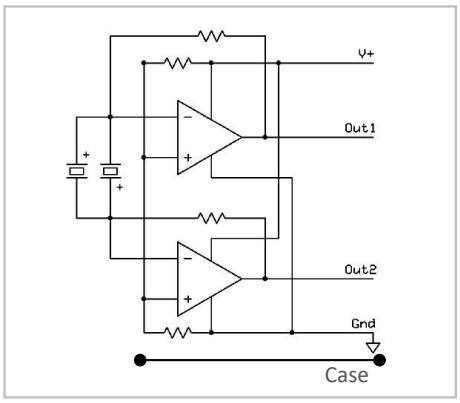
LD2100X2020

- Single channel LTO Pyroelectric detector
- True differential output
- Current mode
- Single supply
- With TFC

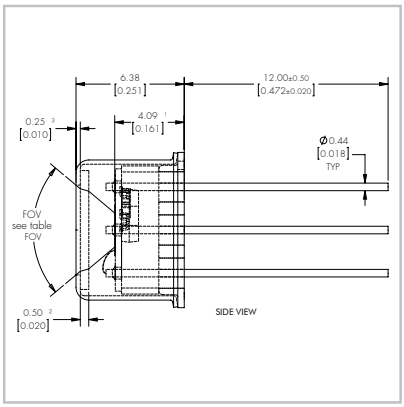
Isometric Drawing

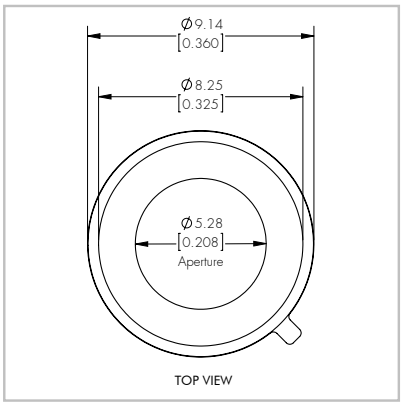


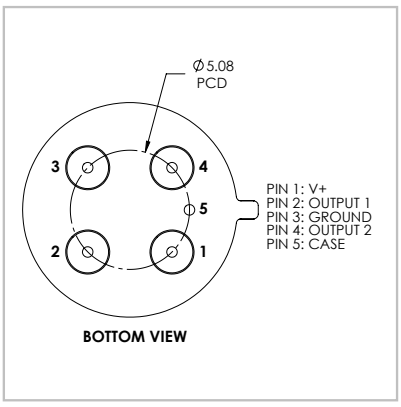
Circuit Diagram



Technical Drawing







Element Size	Aperture Size*	Package	Absorber
2 mm x 2 mm	Dia. 5.3 mm standard	TO-39 isolated 4 + 1 pin	Organic Black

Feedback Resistor	Amplifier	-3dB Freq [Hz]	Supply
100 GOhm	Op-Amp 5	< 1 Hz – 18 Hz (typical)	2.7 – 10 V (3 V recommended) 1.7 – 2.5 mA

Responsivity [V/W]		D* (Jones) @ 10 Hz**		Noise Density [µV/sqrt(Hz)]
Min:	240,000	Min:	5×10^8	Max: 80
Typ:	280,000	Typ:	8×10^8	

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

** Without filter/window

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

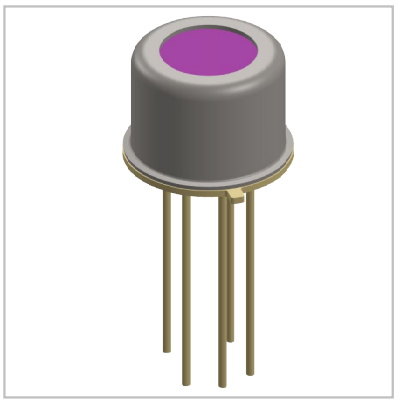
Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

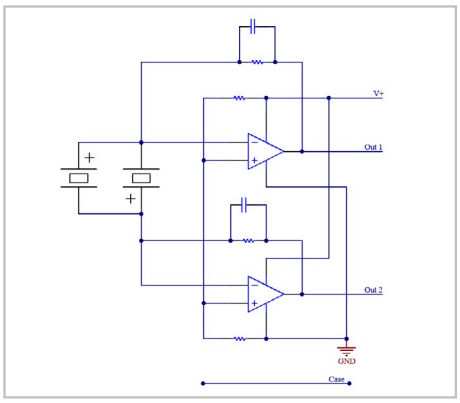
LD2101X2020

- Single channel LTO Pyroelectric detector
- True differential output
- Current mode
- Single supply
- With TFC

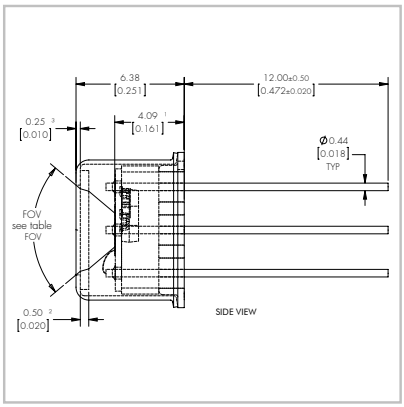
Isometric Drawing

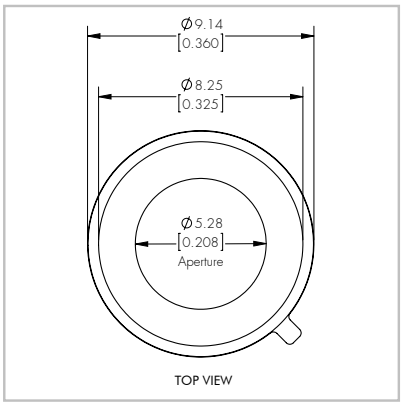


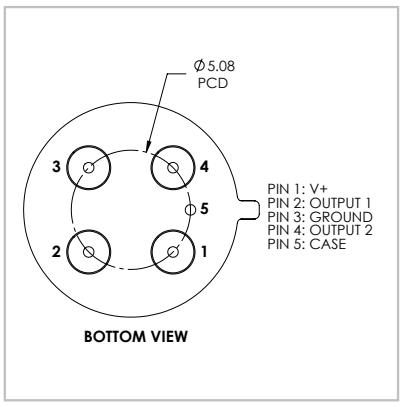
Circuit Diagram



Technical Drawing







Element Size	Aperture Size*	Package	Absorber
2 mm x 2 mm	Dia. 5.3 mm standard	TO-39 isolated 4 + 1 pin	Organic Black

Feedback Resistor	Amplifier	-3dB Freq [Hz]	Supply
100 GOhm	Op-Amp 5	< 1 Hz – 18 Hz (typical)	2.7 – 10 V (3 V recommended) 1.7 – 2.5 mA

Responsivity [V/W]	D* (Jones) @ 5 Hz**	Noise Density [µV/sqrt(Hz)]
Min: 80,000 Typ: 90,000	Min: 6.5×10^8 Typ: 7.0×10^8	Max: 25

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

** Without filter/window

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

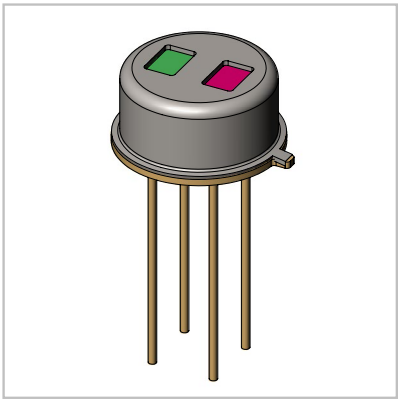
Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

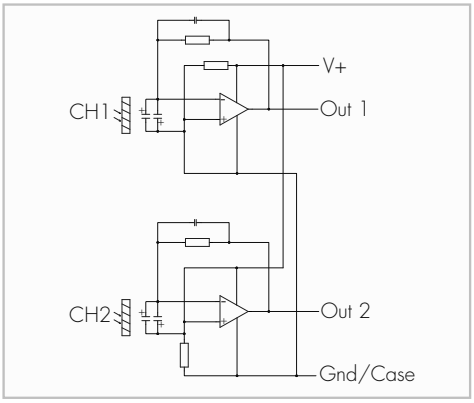
L2201D1810

- Dual channel Pyroelectric detector
- Current mode
- Single supply
- With TFC

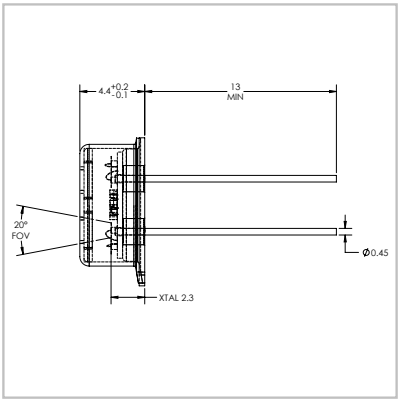
Isometric Drawing

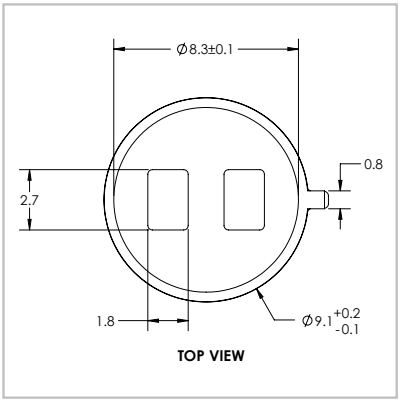


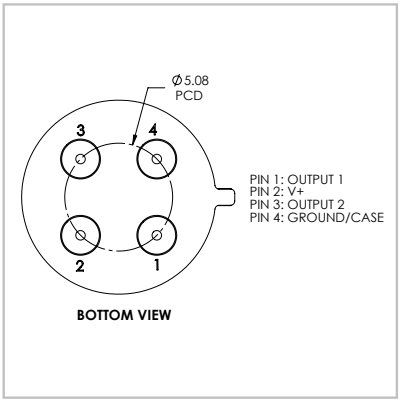
Circuit Diagram



Technical Drawing







Element Size	Aperture Size*	Package	Absorber
1.8 mm x 1.0 mm	2.7 mm x 1.8 mm	TO-39 4-pin	Organic Black

Feedback Resistor	Amplifier	-3dB Freq [Hz]	Supply Voltage [V]
100 GOhm	Op-Amp 7	TBD	1.8 - 5.5 V (3 V recommended)

Responsivity [V/W]**	D* [Jones]** @ 5 Hz	Noise Density [µV/√Hz)]	Output Polarity
Min: 30,000 Typ: 34,000	Min: 3×10^8 Typ: 5×10^8	Max: 13 µV	Negative

* Please refer "Filters and Windows" datasheet for all available options.
** Without filter / window

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

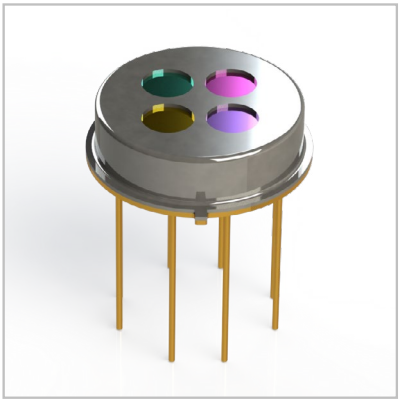
Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

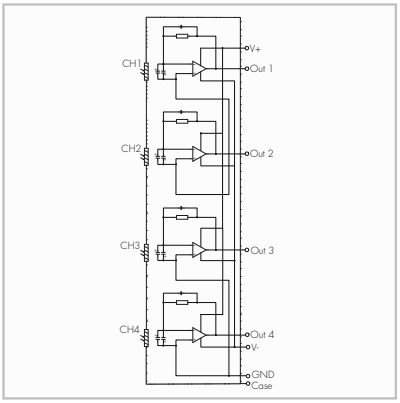
L2411D2020

- Quad channel Pyroelectric detector
- Current mode
- Dual supply
- With TFC

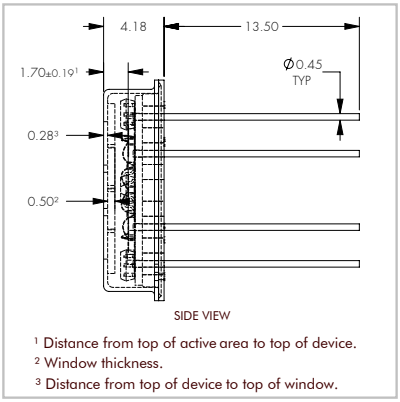
Isometric Drawing

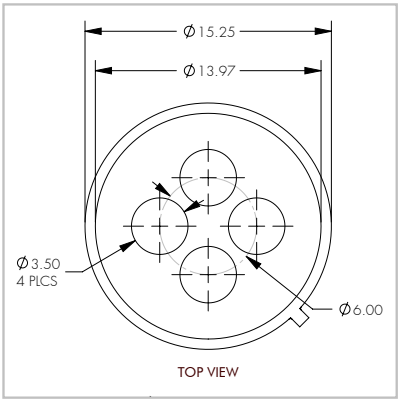


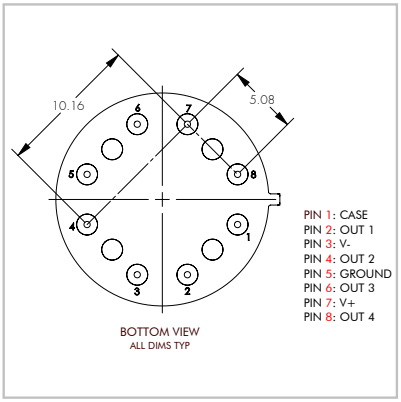
Circuit Diagram



Technical Drawing







Element Size	Aperture Size*	Package	Absorber
2.0 mm x 2.0 mm	dia. 3.5 mm	TO-8	Organic Black

Feedback Resistor	Amplifier	-3dB Freq [Hz]	Supply Voltage [V]
100 GOhm	Op-Amp 7	TBD	Dual Supply ±0.9 - ± 2.75 V (± 2.5 V recommended)

Responsivity [V/W]**	D* [Jones]** @ 5 Hz	Noise Density [µV/√Hz]	Output Polarity
Min: 40,000 Typ: 45,000	Min: 5×10^8 Typ: 6×10^8	Max: 14 µV	Negative

* Please refer "Filters and Windows" datasheet for all available options
** Without filter / window

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

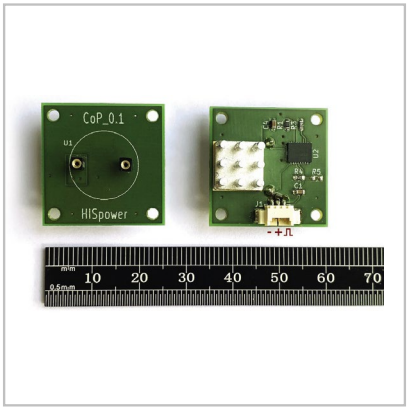
Accessories

Driving Circuit Board

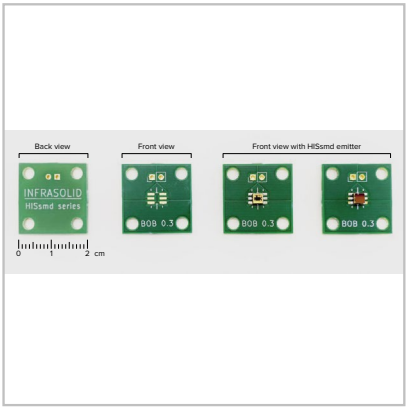
For a quick evaluation of HISpower series IR emitters we offer a simple driving circuit board.

Also for smd series a breakout board (BOB) is available which can be used to easy connect drivers and electronics for evaluation.

Please contact us for further technical details and ordering information.



Driving circuit board for a quick evalution of HISpower series IR emitters.



Breakout board for HISsmd series.

Filter

Si window with High Efficient Broadband AR-coating

For applications in the 1 – 12 µm wavelength range, several filter and window materials for pyroelectrics are useable. They are described in the filter and window datasheet.

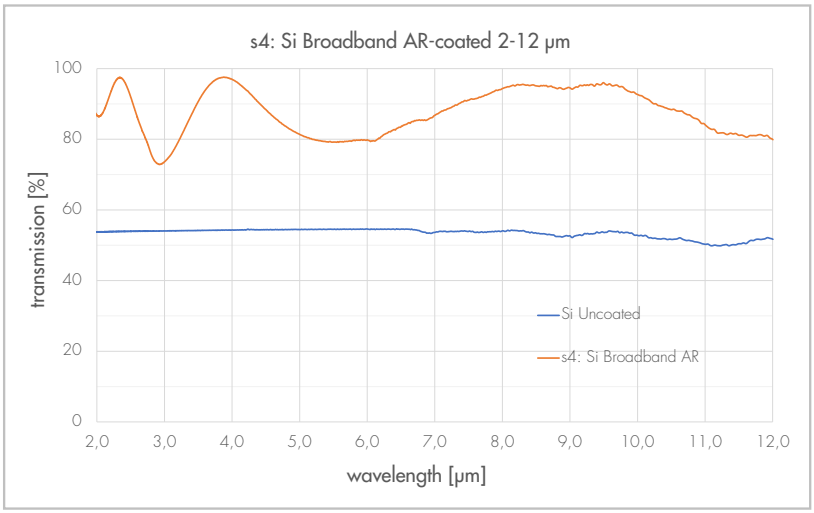
One optimized version is a broadband silicon window with the following specification:

T avg (1.55 µm) > 40% (both sides, best effort)

T avg (2.0 – 12 µm) >/= 87% (both sides)

T abs (2.0 – 12 µm) >/= 75% (both sides)

One dip with T abs > 70% @ 2 – 4 µm allowed,
if T > 92% @ 8 – 10 µm.



Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com

Absolute Maximum Ratings for pyroelectric LTO detectors

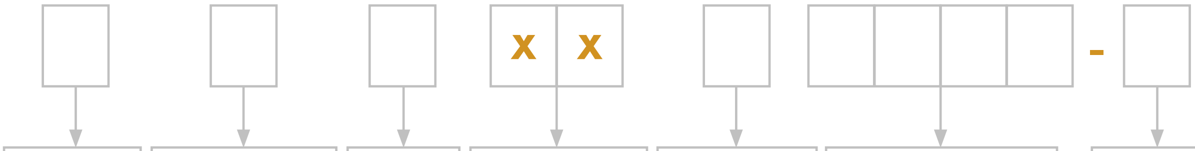
	Min	Max
Storage temperature [°C]	– 25	+ 60 **
Operating temperature [°C]	– 20	+ 85
Soldering temperature, 5 sec [°C]	+ 280	+ 300
ESD damage threshold, Human Body Model Class …* [V]	0	< 250

* ANSI/ESD STN5. 1-2007
** Limited by packing materials.

Handling

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

Part Number Designation



Material	
L	$LiTaO_3$
LD	$LiTaO_3$ Differential
D	DLaTGS
DD	DLaTGS Differential

Type	
0	chip only
1	current mode
2	current mode + TFC
3	voltage mode
4	voltage mode + TFC

Channels	
1	single
2	dual
3	triple
4	quad

Version-Number

Mount	
X	standard
T	TEC
D	SMD

Element Size	
1000	∅ 1.0 mm
1300	∅ 1.3 mm
2000	∅ 2.0 mm
1810	1.8 x 1.0 mm²
2020	2.0 x 2.0 mm²
3030	3.0 x 3.0 mm²

Filter Code
see "Filters + Windows" datasheet

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

04/23 / V2 / MB-IF / lc-pyros/ir-components-5hz-5um

15

Germany and Other Countries
Laser Components Germany GmbH
Tel: +49 8142 2864–0
Fax: +49 8142 2864–11
info@lasercomponents.com
www.lasercomponents.com

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

Nordic Countries
Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA
Laser Components USA, Inc.
Tel: +1 603 821–7040
Fax: +1 603 821–7041
info@laser-components.com
www.laser-components.com