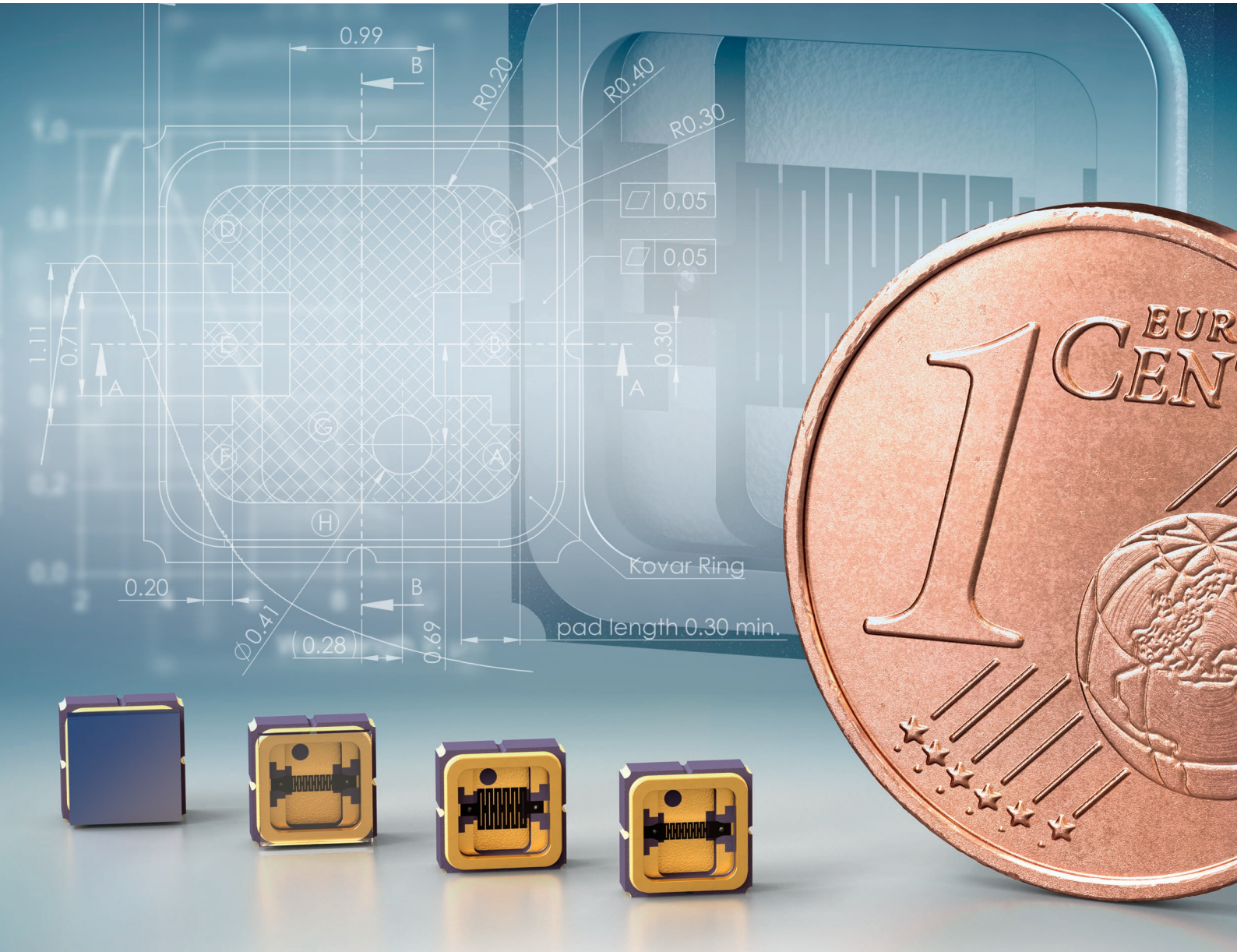


# INFRA·SOLID<sup>®</sup>



Data Sheet

## **HIS100smd**

Thermal Infrared Emitters

# HISsmd series

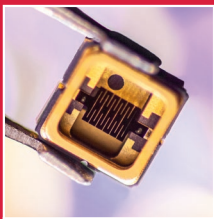
## Thermal Infrared Emitters

**HISsmd 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<sub>2</sub> and breath alcohol, and in Smart Home and Smartphone applications.

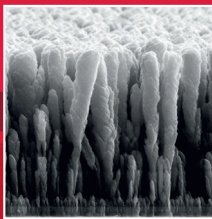
The pioneering SMD package enables a fully automated production in high-volume markets.

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.

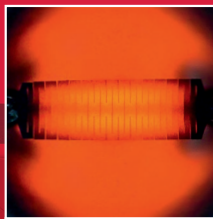
### Key features



**Very small size**



**High efficiency**



**High radiant power**

- ✓ Pulsable thermal black-body infrared source mounted in a SMD package with a size of 3x3 mm<sup>2</sup>.
- ✓ 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.

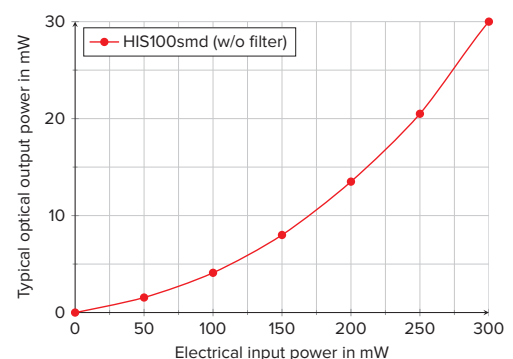
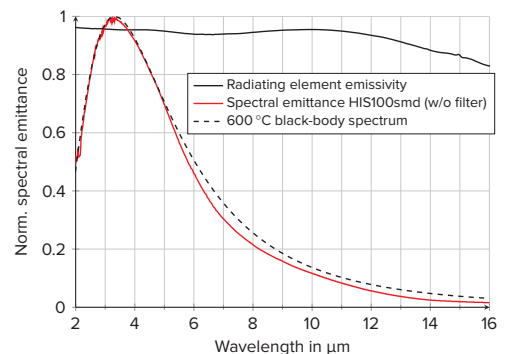
*innovative infrared sources for gas detection & spectroscopy*

### Main specifications

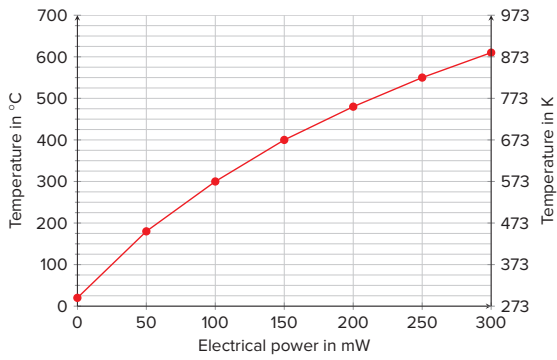
Parameter	HIS100smd
Package	SMD3
Radiating element area	1 mm <sup>2</sup>
Radiating element emissivity	> 0.9
Radiating element temperature	600 °C at 290 mW
Optical output power	up to 30 mW
Max. electrical power (DC)	290 mW
Max. electrical voltage	1.7 V
Max. electrical current	170 mA
Electrical resistance	9...10 Ω
Modulation frequency*	10 Hz
Filter (glued window)	Si-ARC, Sapphire, ZnSe
Wavelength range**	2 to 20 μm

\* 50 % modulation depth, square wave signal, 50 % duty cycle  
 \*\* depending on filter transmissivity

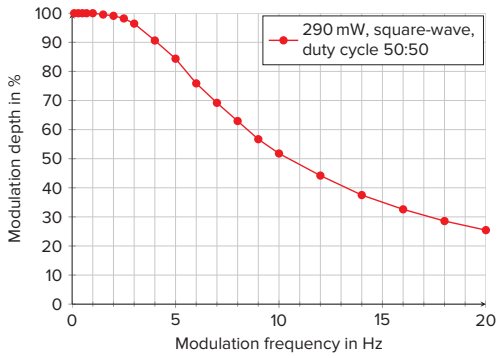
### Optical specifications



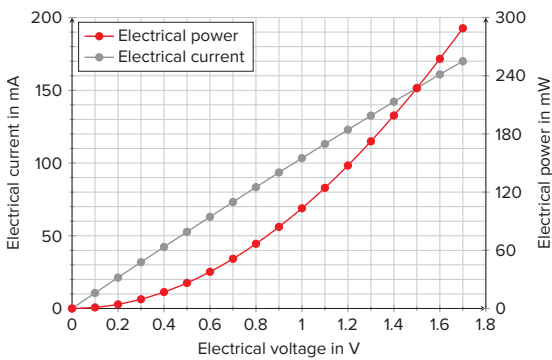
### Radiating element temperature



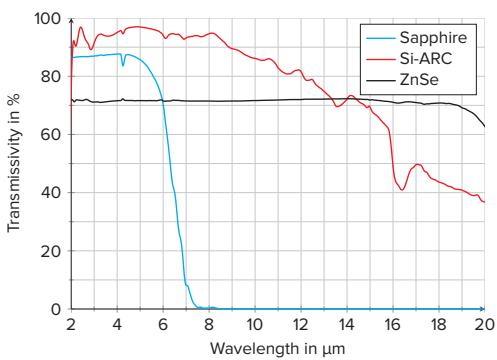
### Modulation depth



### Electrical specifications

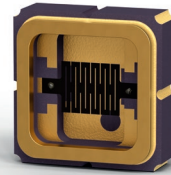


### Window material transmissivity



### HIS100smd

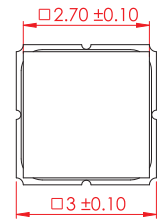
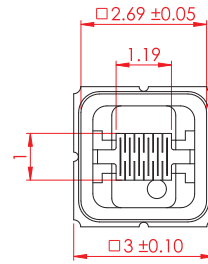
### Window options



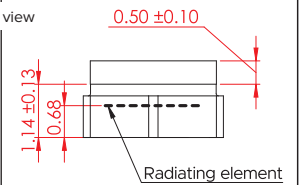
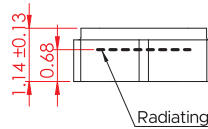
Without window

Si-ARC, Sapphire, ZnSe

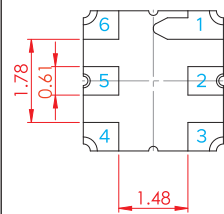
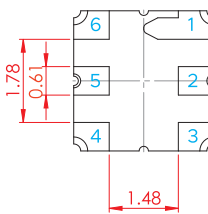
Top view



Side view



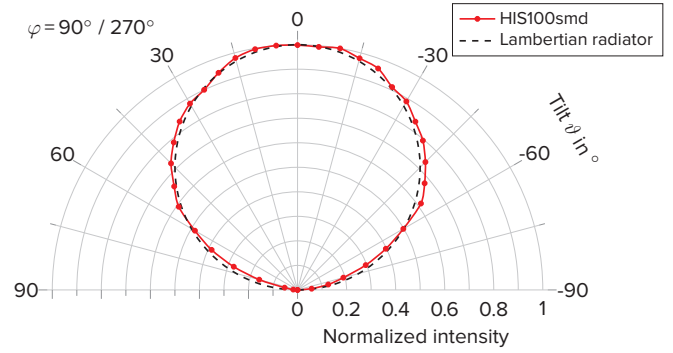
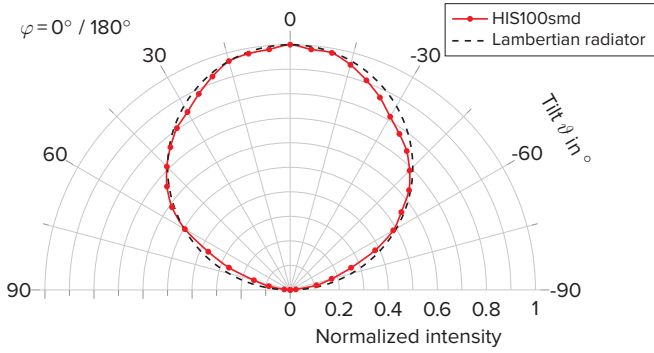
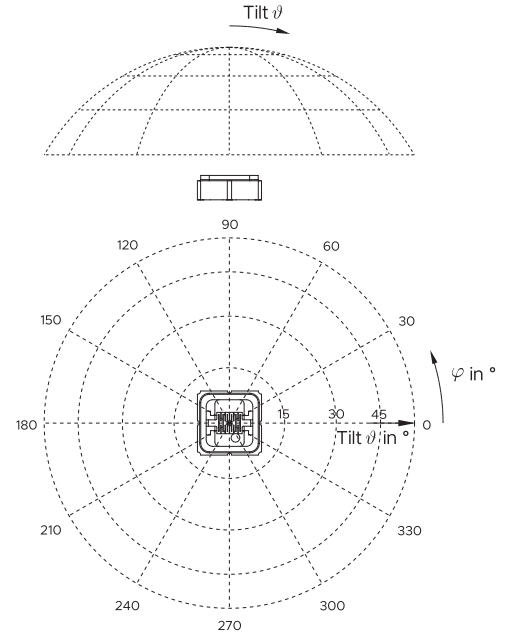
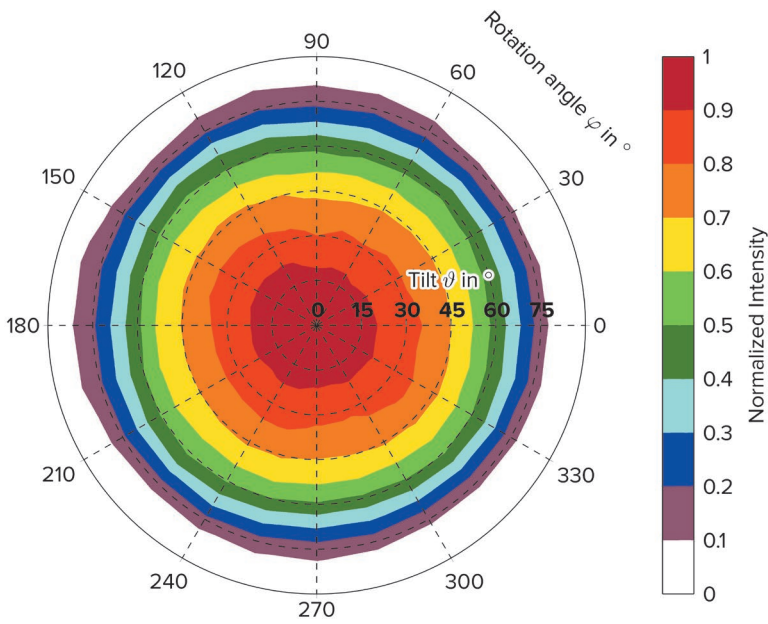
Bottom view



### Connection table

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

Angular radiation distribution (without window)



Operating mode recommendation: [www.infrasolid.com/technicalnote](http://www.infrasolid.com/technicalnote)