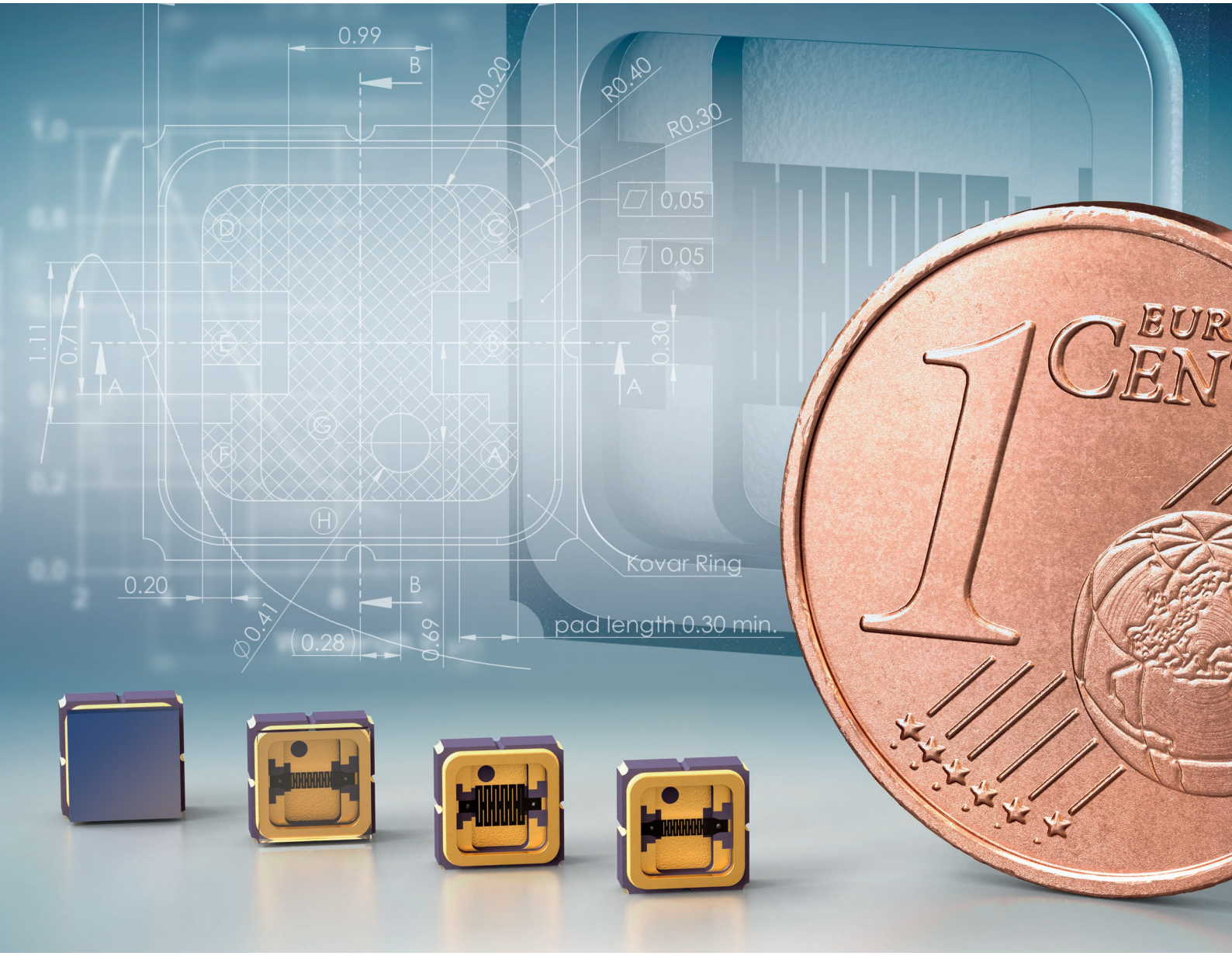
INFRASOLID®



Data Sheet

HIS*smd* series

Thermal Infrared Emitters

HIS*smd* series

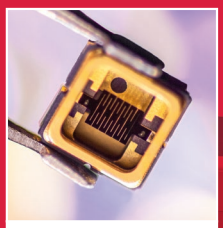
Thermal Infrared Emitters

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.

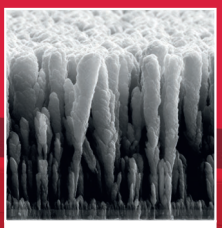
The pioneering SMD package enables a fully automated production in high-volume markets.

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.

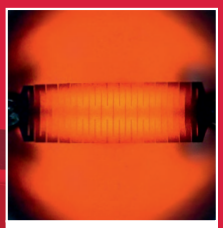
Key features



Very small size



High efficiency



High radiant power

- **Pulsable thermal black-body infrared source mounted in a SMD package with a size of 3 x 3 mm.**
- **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.**

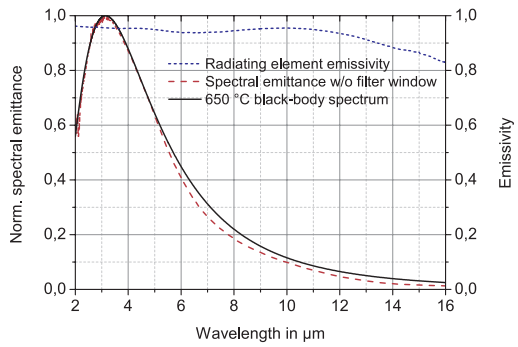
innovative infrared sources for gas detection & spectroscopy

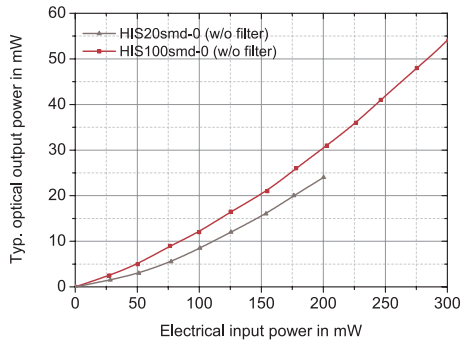
Main specifications

Parameter	HIS20*smd*	HIS100*smd*
Package	SMD3	SMD3
Radiating element area	0.24 mm^2	1 mm^2
Radiating element emissivity	> 0.9	> 0.9
Radiating element temperature	700 °C at 175 mW	600 °C at 290 mW
Optical output power**	up to 20 mW	up to 50 mW
Max. electrical power (DC)	175 mW	290 mW
Max. electrical voltage	1.05 V	1.7 V
Max. electrical current	170 mA	170 mA
Electrical resistance	5...6 Ω	9...10 Ω
Modulation frequency*	10 Hz	7 Hz
Filter (soldered window)	Si-ARC, Sapphire, ZnSe	Si-ARC, Sapphire, ZnSe
Wavelength range**	2 to 16 µm	2 to 16 µm

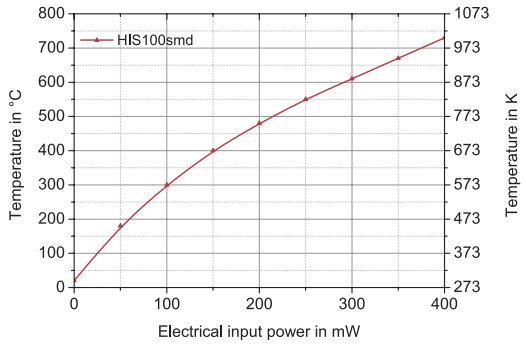
* 70 % modulation depth, square wave signal, 50 % duty cycle
** depending on filter transmissivity

Optical specifications

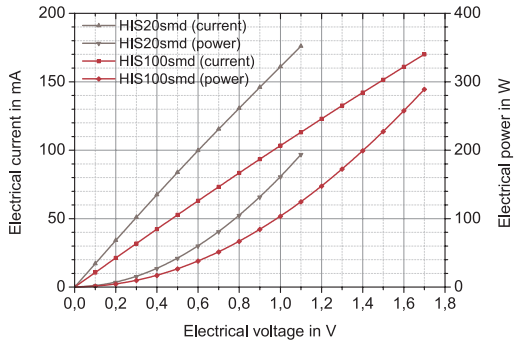




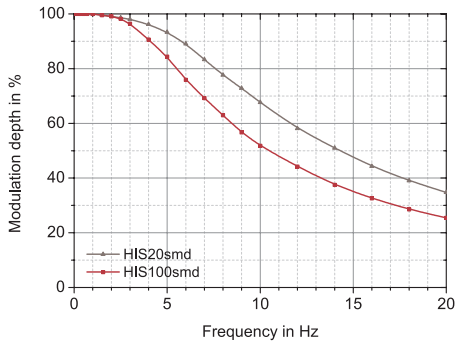
Radiating element temperature



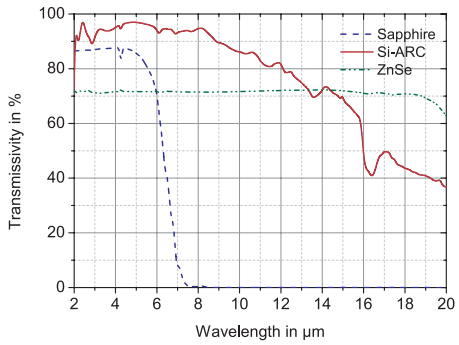
Electrical specifications

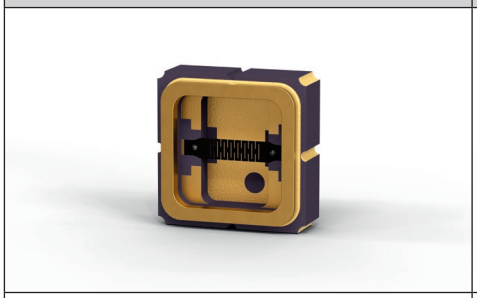
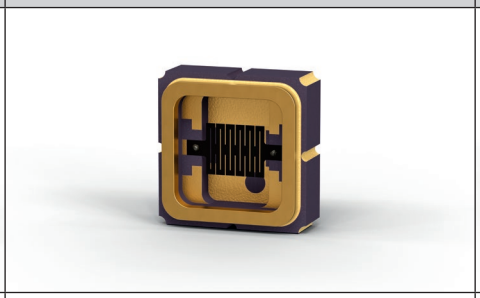
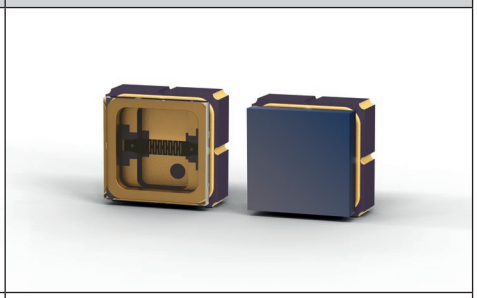
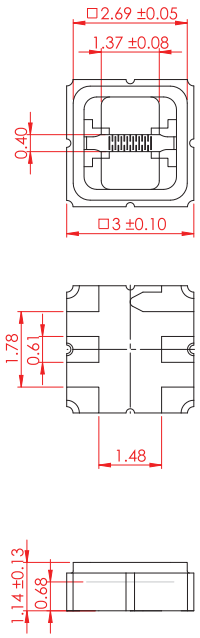
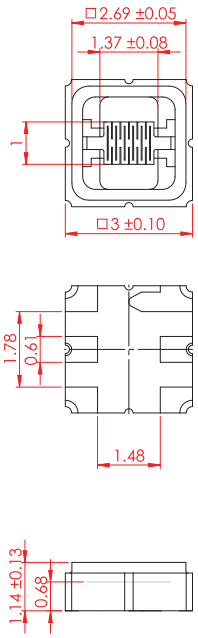
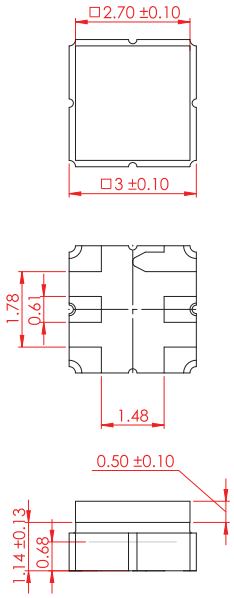


Modulation depth



Window material transmissivity



HIS20*smd*	**HIS100***smd*	Window options
		
Without window	Without window	Si-ARC, Sapphire, ZnSe
		

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