INFRASOLID®

Data Sheet HIS*basic*

HIS550R-0WC

TO-39/TO-5 Thermal Infrared Emitter

HIS550R-0WC

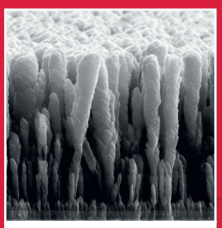
Thermal infrared emitter with gold plated reflector and Winston cone collimator

Our HIS550R-0WC is a NiCr filament based thermal emitter in a TO39 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 the beam for maximum optical output power. The open emitter offers high performance for a wide spectral measuring range.

HIS*basic* 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. 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

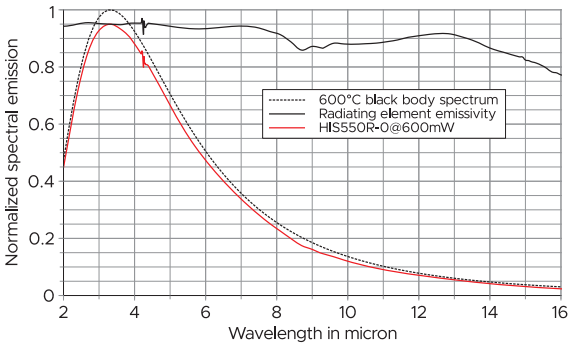
- **Pulsable thermal black-body infrared source mounted in an industry standard TO-39/TO-5 package.**
- **Patented nanostructured radiating element achieves up to 500% more detection signal!**
- **Lower radiating element temperature of 600 °C increases lifetime!**
- **Wide wavelength range enables a broad range of applications.**

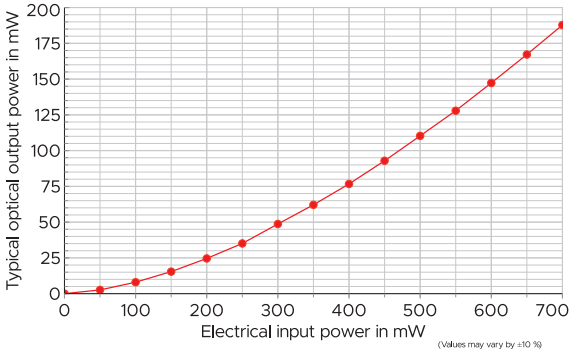
innovative infrared sources for gas detection & spectroscopy

Main specifications

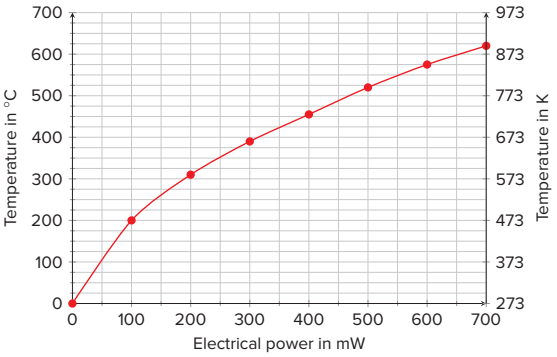
Parameter	HIS550R-0WC
Package	TO-39 / TO-5
Radiating element area	11 mm²
Radiating element emissivity	> 0.9
Radiating element temperature	600 °C at 650 mW
Optical output power	up to 190 mW
Max. electrical power (DC)	700 mW
Max. electrical voltage	4.0 V
Max. electrical current	175 mA
Electrical cold resistance	22 +/- 3 Ω (typ. 21...23 Ω)
Electrical hot resistance	22 +/- 3 Ω (typ. 21...23 Ω)
Wavelength range	2 to 20 µm
Filter/Window	None

Optical specifications

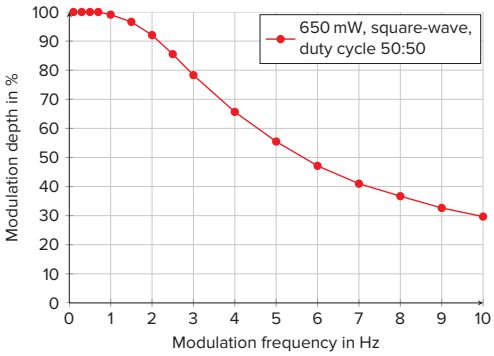




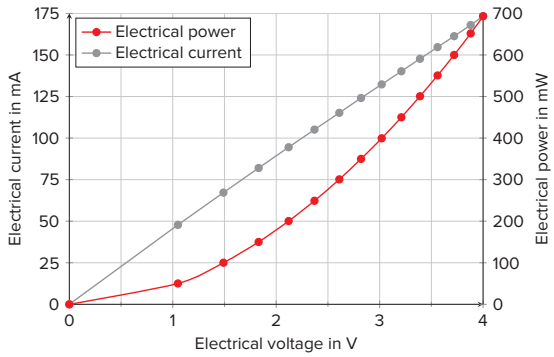
Radiating element temperature



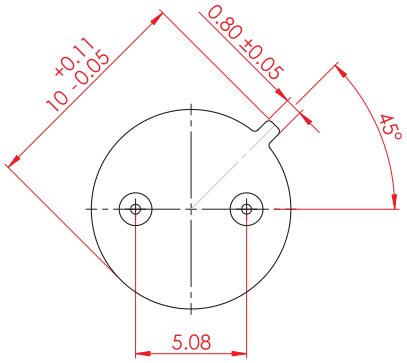
Modulation depth

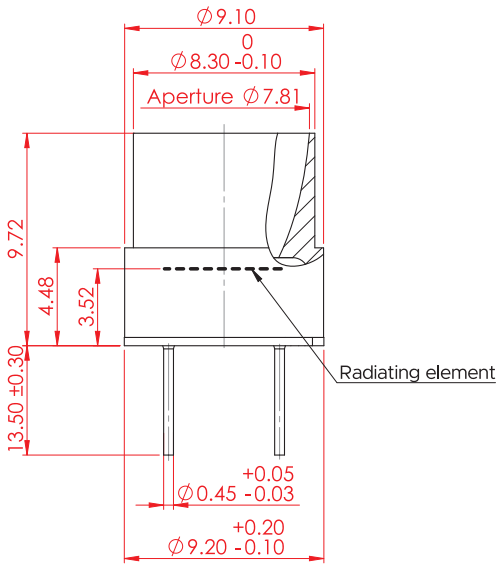


Electrical specifications



HIS550R-0WC





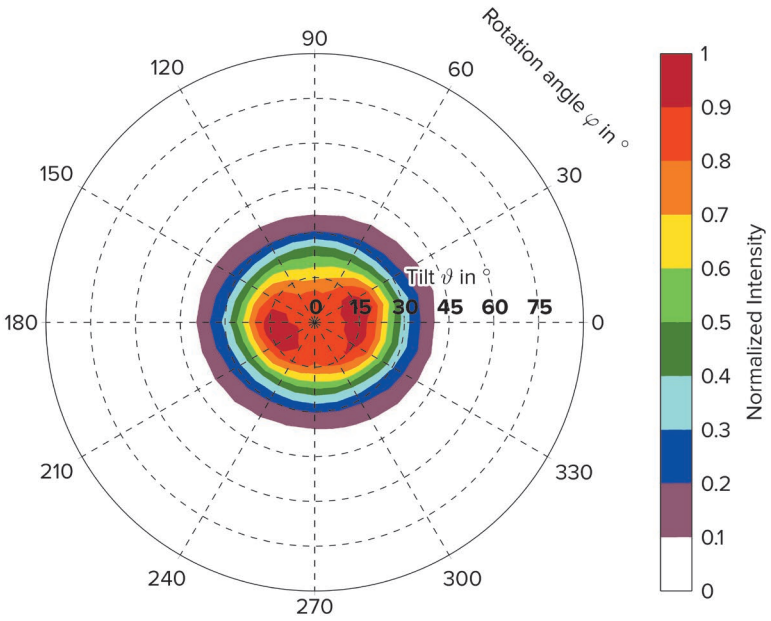
Maximum housing temperatures without heat sink (at T_{amb} = 20 °C):

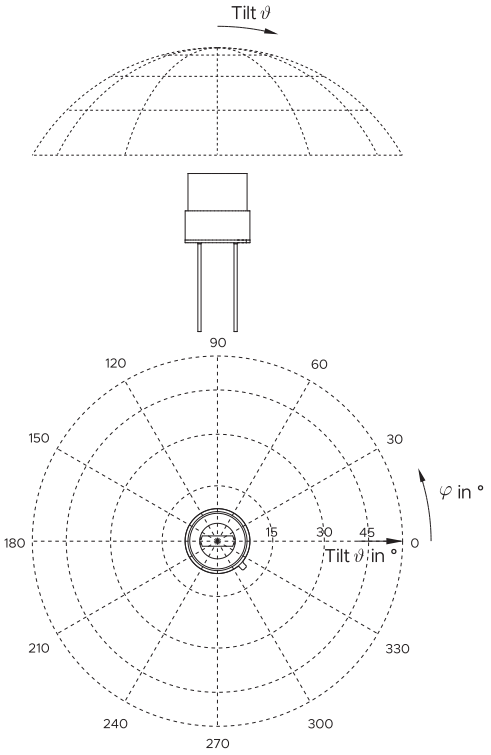
HIS550R-0WC @700 mW	Operation mode	
	DC	Pulsed (1 Hz square wave)
T_{max}	80 °C	55 °C

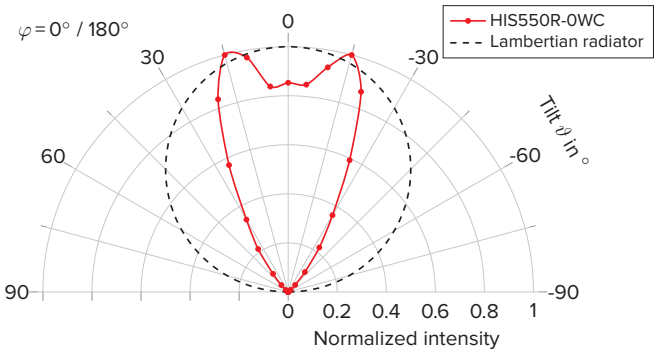
All our emitters comply with the following JEDEC-standards:

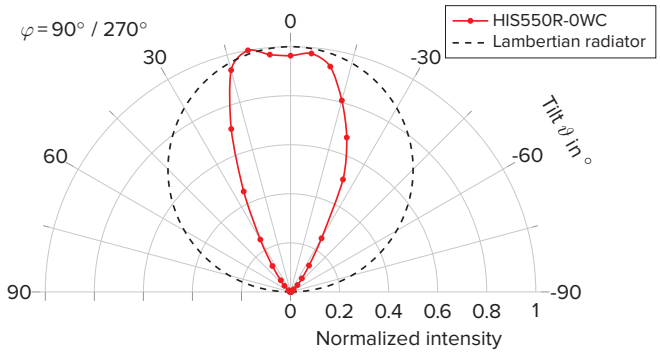
- **JESD22-A104**
  (temperature cycling and shock test: -45 °C / + 90 °C, 100 cycles)
- **JESD22-B103**
  (vibration test: log. sweep 20 Hz...2000 Hz, peak 20 g, X/Y/Z direction)
- **JESD22-B110**
  (drop test: 5000 m/s², 6 directions)

Angular radiation distribution







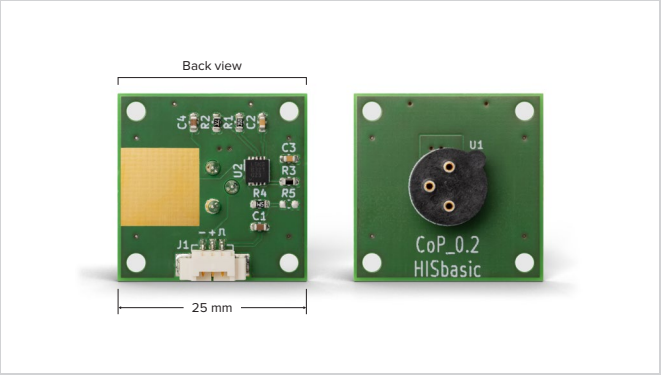


Driver Circuit Board (DCB):

We provide several Driver Circuit Boards (DCBs) for our HIS*smd*, HIS*basic* and HIS*power* series emitters to support a quick evaluation in your applications. All DCBs are small and use a low-cost driving circuit with a maximum stability close to a power regulated mode. Only a supply voltage and a pulse signal have to be applied. For more information about its function, see our technical notes.

The DCBs are available at:

www.infrasolid.com/accessories



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