Your Source For InfraRed
HAWKEYE TECHNOLOGIES

IR-51 EMITTER

DATASHEET



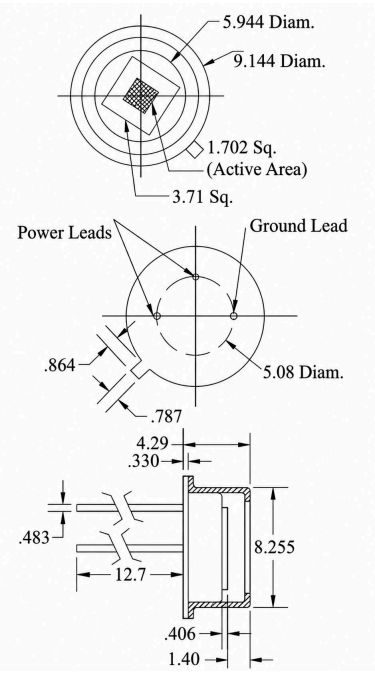
Infrared emitter designed for NDIR gas analysis and optical sensing, offering stable performance and long operational life

General Information

Key Features: Stable characteristics (bare minimum resistance drift over life)

Emitter Type	MEMS, Thin Film Radiating Membrane On Silicon Frame
Operation Mode	Steady Or Modulation
ROHS	Conformed
Active Area	1.7 × 1.7 mm
Recommended Voltage	7V
Operation Life At 0.7 W Power	≥ 50,000 H
Package Type	TO-5

*Max/Recommended. Higher input will impact emitter's life.



*All dimensions in mm

Application Notes

This emitter is designed to operate at elevated temperatures, with the radiating element reaching up to approximately 700 °C. Such high operating temperatures must be carefully considered in system design and thermal management.

During operation, the package temperature may rise to approximately 100 °C or higher, depending on operating conditions.

The emitter produces infrared radiation primarily within the wavelength range of 2 to 15 µm, with peak emission between 3.5 and 4.0 µm.

A parabolic reflector is recommended to increase the radiation flux reaching the detector. At a 6.75″ emitter–detector distance, the reflector increases the radiation intensity by approximately 8×. A refocusing elliptical reflector is also available. The reflector dimensions are OD = 0.5″ and OL = 0.640″.

This device is suitable for use in a wide range of infrared spectroscopic applications, including as a radiation source in IR spectrometers.

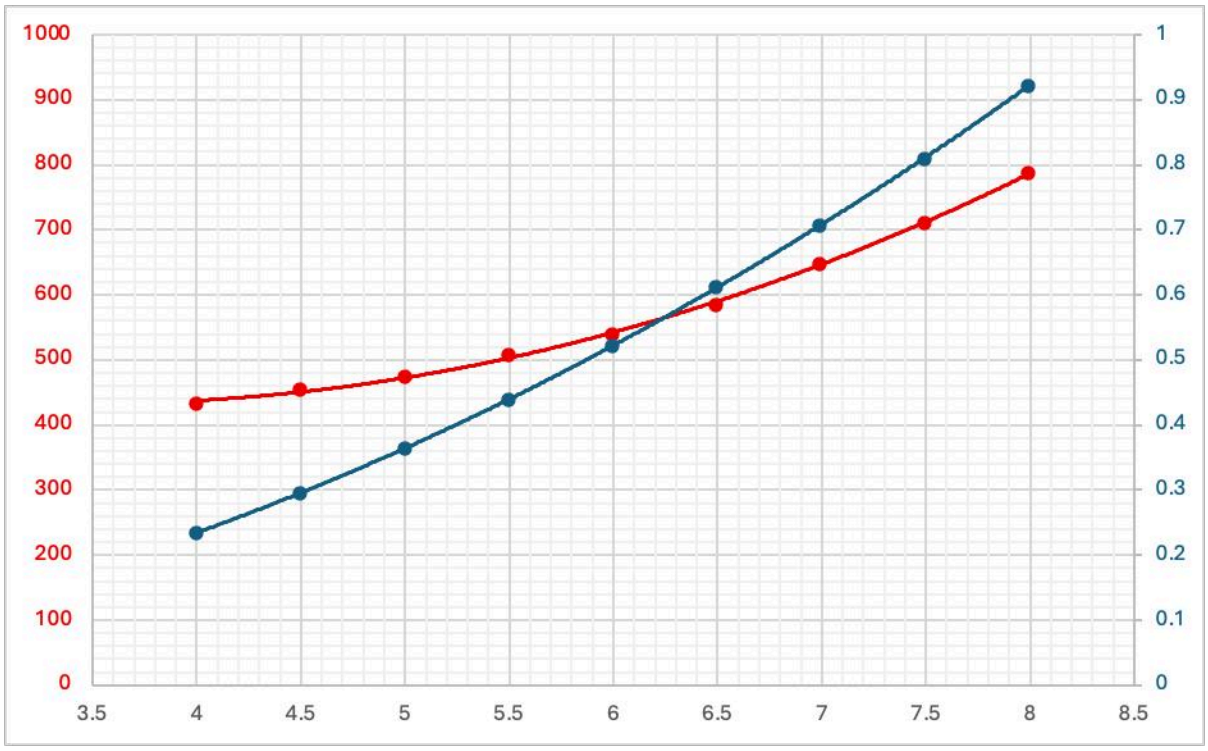
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Specifications subject to change without notice.
Please visit our website for the most up to date information.

Emitter Ratings

Parameter	Symbol	Value, Typical	Unit	Notes
Cold Resistance	Rc	68	Ohm	At room temp
Input Power	P	0.7	W	-
Input Voltage	V	7	V	-
Input Current	I	0.1	A	-
Operating Resistance	Rop	70	Ohm	-
Active Area Temp	T	650	°C	Environment at 25°C

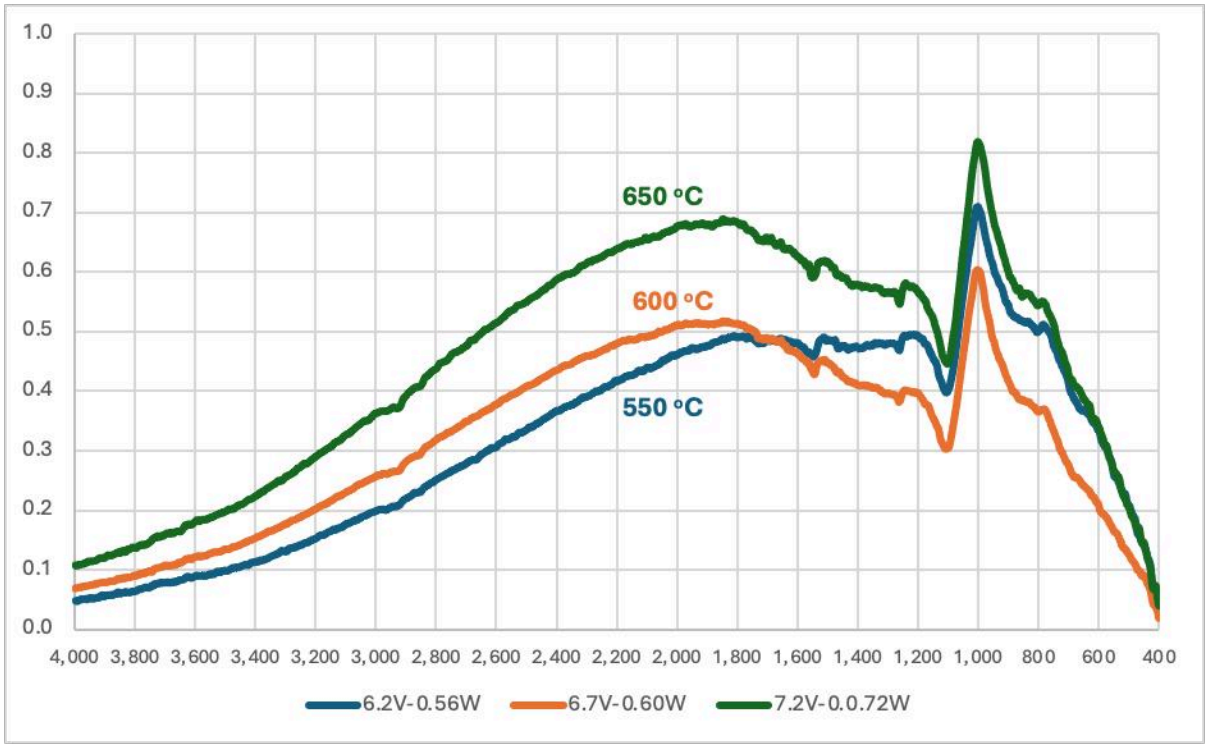
IR-51. Power (W) and Temperature (°C) vs Voltage (V)



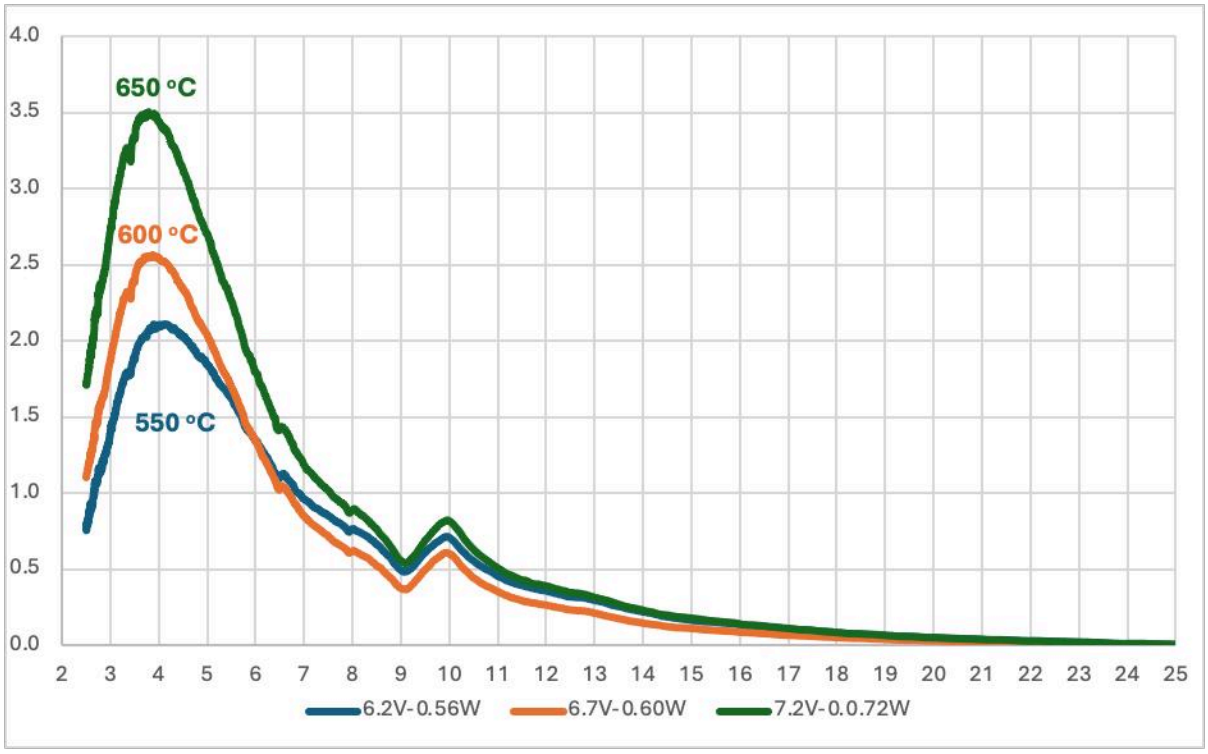
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IR-51. Emission (a.u.) vs Wavenumber (cm^-1)



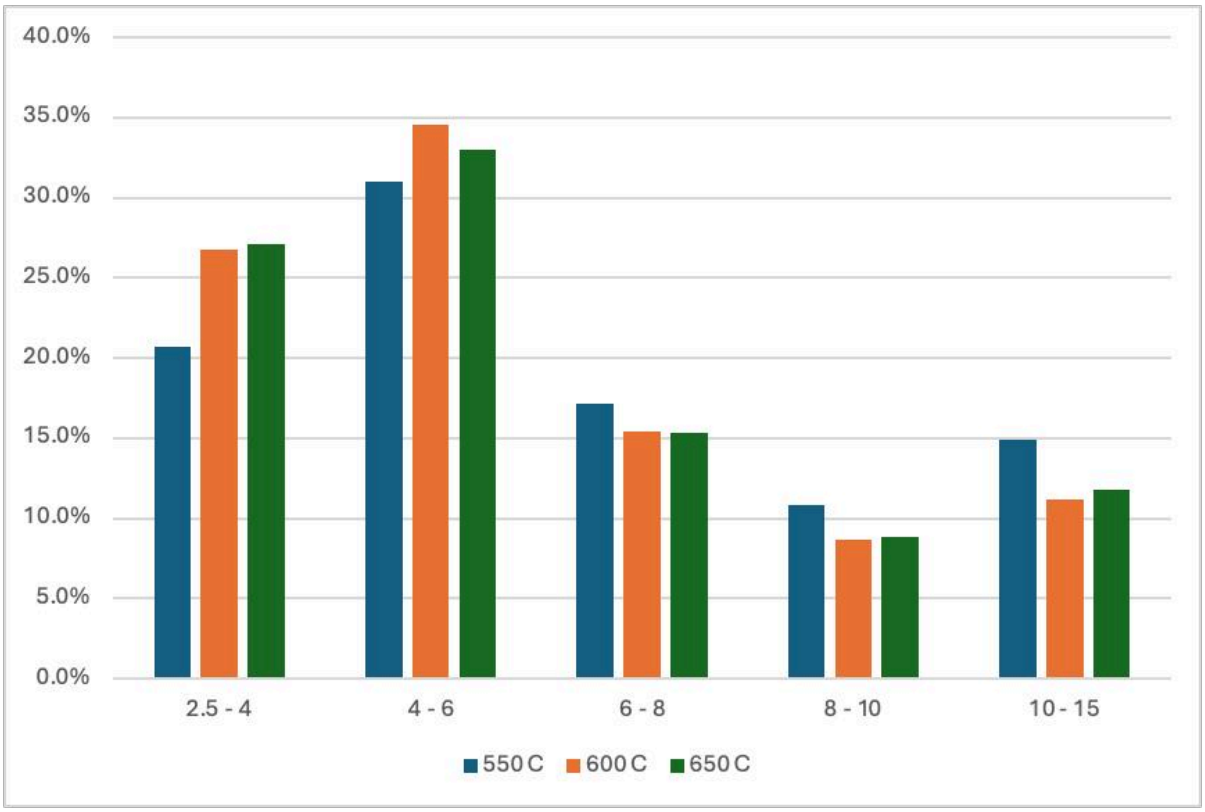
IR-51. Emission (a.u.) vs Wavelength (um).



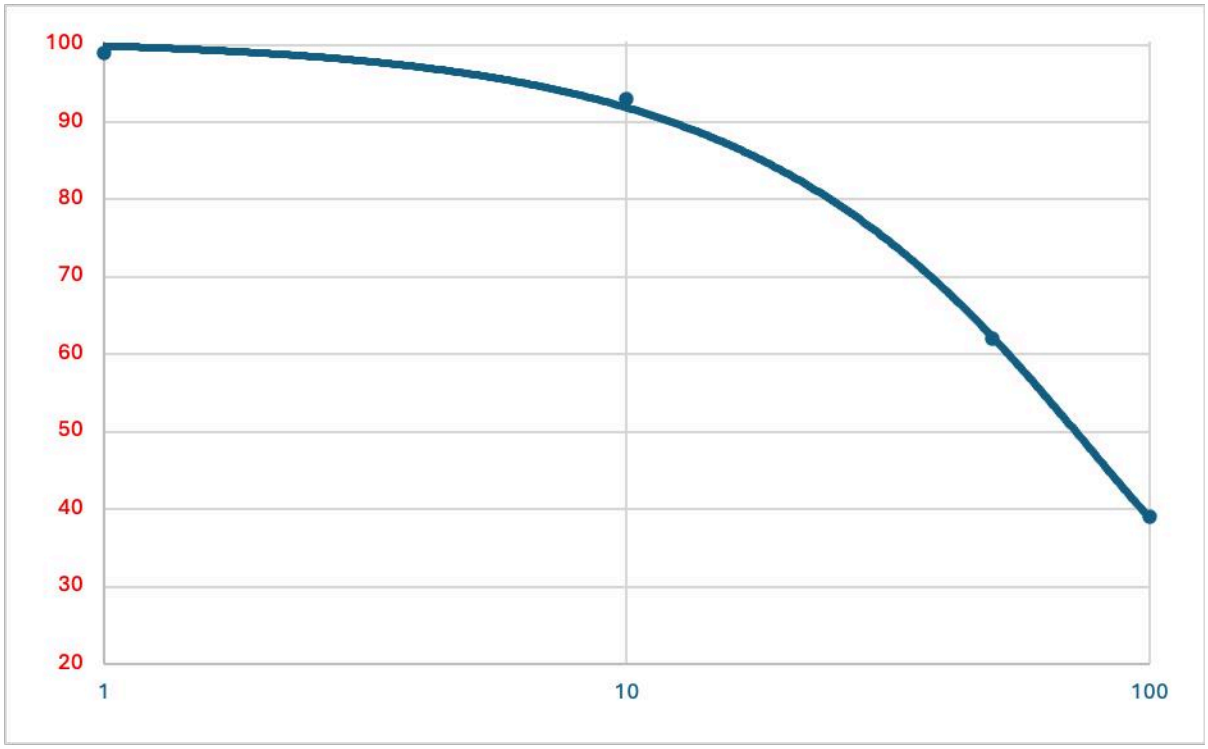
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IR-51. Radiance Distribution over Wavelengths.



IR-51. Modulation depth(%) vs Frequency(Hz).



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