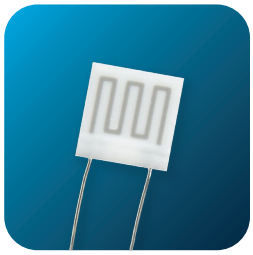
innovative
Sensor
Technology

MICRO-HEATERS

Individually designed heaters for targeted heating of solids, liquids and gases



physical · chemical · biological

APPLIANCE | AUTOMOTIVE | HUMIDIFICATION UNITS | LIFE SCIENCE | LASER MANUFACTURING | MEDICAL | 3D-PRINTING

iST offers a wide range of sensors based on different technologies suitable for any application.

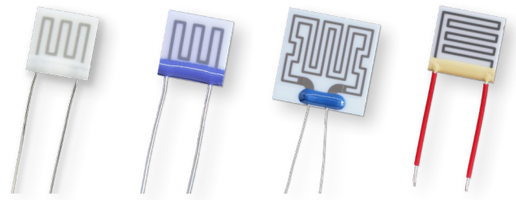
Standard or customized

Precise, reliable and cost-efficient: iST micro heaters are tailor-made to your application's needs. Micro heaters are used in devices requiring a small but accurate heat source with precise temperature control, such as optical interactive assistance systems. They are a precision heat source for gas and humidity sensors, biopsy or tissue samples for medical analysis, or used in malignant tumor treatment.

Benefits & Characteristics

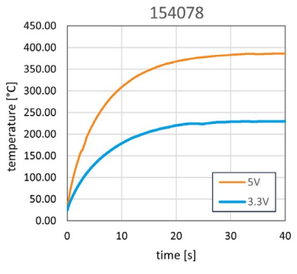
Our micro heaters combine high-precision and long-term stability with a wide temperature range from -50 °C up to +800 °C and feature numerous benefits:

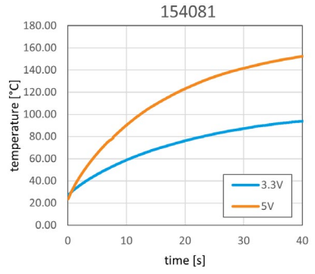
- Fast heat-up curve
- High temperature stability
- Overheating protection
- Targeted heating of tiny spaces
- Tailor-made to fit customer's application

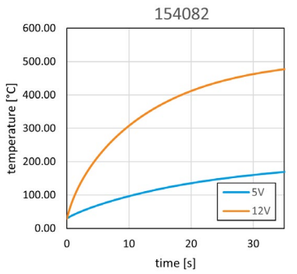


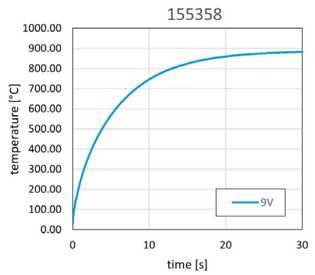
Thick-Film Micro-Heaters: Standard Elements

iST reference	154078	154081	154082	155358
Resistance at RT in Ω	5.5	12	6.4	5.5
Dimensions (L x W x H) in mm	5 x 5 x 0.63	10 x 10 x 0.63	15 x 15 x 0.63	5 x 5 x 0.63
Active material	Pt	Pt	Pt	Pt
Temperature range in °C	-50 to +400	-50 to +240	-50 to +400	-50 to +850









Patterning

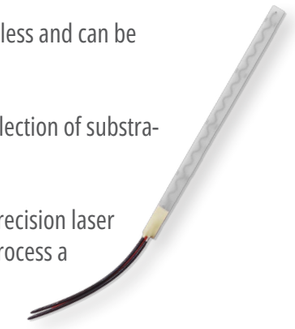
iST micro heaters can be tailored to any application to enable an even heat distribution across a small surface with a power density. They allow for targeted heating of tiny spaces.

Special Form Factors

The possibilities for chip shapes as well as the geometry of heating patterns are endless and can be designed to fit your geometry precisely.

We design the micro heater to fit the application's heating profile offering a wide selection of substrates, from alumina to zirconia.

Whether round, polygons, long and thin or square, the substrates can be cut with precision laser into any two-dimensional shape. Depending on temperature range and assembly process a wide variety of terminals is available.



Substrates

Various substrate materials can be utilized to be compatible with objects to be heated. Thermal conductivity, which influences the heat transfer from heater to object, varies for different substrates. Depending on the requirements the choice of material will be made from the following selection: ceramic alumina, zirconia, sapphire, steel, copper, polyimide, aluminum nitride or silicon wafer. Ceramic substrates, for example, have excellent corrosion resistance and the highest operating temperature range.

Development & Technology Partner

After discussing your requirements, we work with you to create a concept consisting of manufacturing technologies and suitable materials, from substrate to coating to structuring, assembly and packaging.

Our heaters are found in specialty sensor technology as well as high volume medical and automotive applications. Contact us now to design your own micro heater!

Customized sensor solutions for your application

Benefit from an agile co-creation of a sensor with iST's experts and enable your business to focus on your core competence: Simple adaptions of our sensors to fit your application's needs or the development of a new tailor-made sensor – from early prototyping to series manufacturing.

Design

- Conceptioning
- Material selection
- Process technology
- Layout & geometry

Patterning

- Photolithography
- Screen printing
- Laser trimming
- Dry & wet etching

Packaging

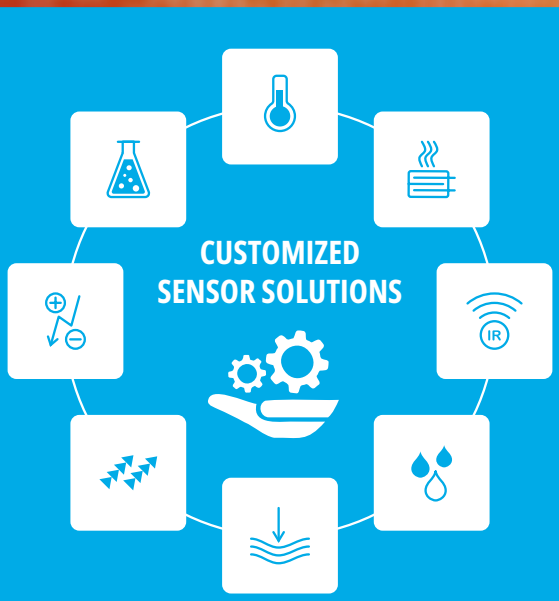
- Welding
- Bonding
- Soldering
- Hot-melt molding
- Injection molding

Services

- Electrical testing
- Optical/AOI testing
- ESD testing
- Calibration
- Metrology

Connection

- PTFE or PEEK insulated
- Ag, Ni/Au, Pt wire
- Cu/Ag, Cu/Ni wire
- AWG 34 to 20
- Flat or round wire
- Multistranded cables
- Ultra-thin wires
- Custom lengths
- Bondable, solderable
- Brazeable, weldable
- SMD & FlipChip
- ...and many more



Substrate

- Alumina
- Zirconia
- Sapphire
- Steel
- Copper
- Glass
- Polyimide
- Aluminium nitride
- Silicon

Metal thin film

- Pt
- Rh
- Ti
- Ni
- W
- Cr
- Ag
- Au
- Al
- Mo
- Alloys

Metal thick film

- Pt
- Au
- Ag
- Ni/Cr and other alloys

Dielectric thin film

- SiO_2
- Si_3N_4
- Ta_2O_5
- Polymers

Dielectric thick film

- Glass
- Organic polymers

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