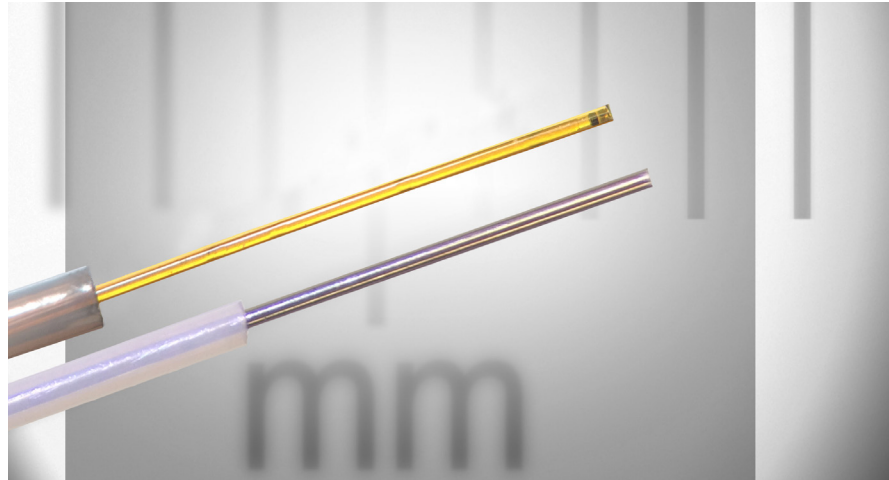


FIBER OPTIC TEMPERATURE SENSOR

FAST RESPONSE TIME GaAs-BASED FIBER OPTIC TEMPERATURE SENSOR FOR POWER ELECTRONIC



KEY FEATURES

- Immune to EM and RF interferences
- Small size (.22 mm or .36 mm OD) but robust
- High Temperature range (up to 350 °C)
- Non-invasive (very low thermal mass)
- Fast response time (few ms)
- Option - Smart retractable design-TT enabling measurement through silicon gel

OTG-I220 & OTG-I360

Compatible with Opsens Solutions' GaAs signal conditioners

DESCRIPTION

The OTG-I220 and OTG-I360 are manufactured with industry standard optical fiber and is compatible with all Opsens Solutions' GaAs (SCBG) signal conditioners. Their small size and fast response time are perfectly suited for complex instrumentation projects, such as those related to **power semiconductor** devices.

For the OTG-I220, the end of the sensor is inside a polyimide tube, with an outer diameter of 0.22 mm. And for the OTG-I360, we have two different models, the end of the sensor is in a glass or stainless steel tube, the outer diameter is 0.36 mm for both models. The differences between each model of the OTG-I series are shown on the next page in the specifications section.

There is also an optional design available for the OTG-I220 and OTG-I360 sensors, the **Smart retractable design-TT** that protects the sensor head during cable manipulation and test preparation. Protected by a small but sturdy TT (Telescopic Tubing) polyimide tube, the sensor head has the required rigidity to pierce easily through silicon gel to position the sensor on a precise location of a die or a circuit board. Once ready for instrumentation, the sensor head is exposed to reach the surface to monitor. This added protection does not limit the flexibility of the sensor: the cable can still be **wrapped around a finger**.

Offering unprecedented repeatability and reliability under the most adverse conditions such as high levels of EM, RF, MR and microwave field environments, the sensor is deployed in many power electronics modules or converters for quality control, reliability assessment, or continuous monitoring of those critical devices.

APPLICATIONS

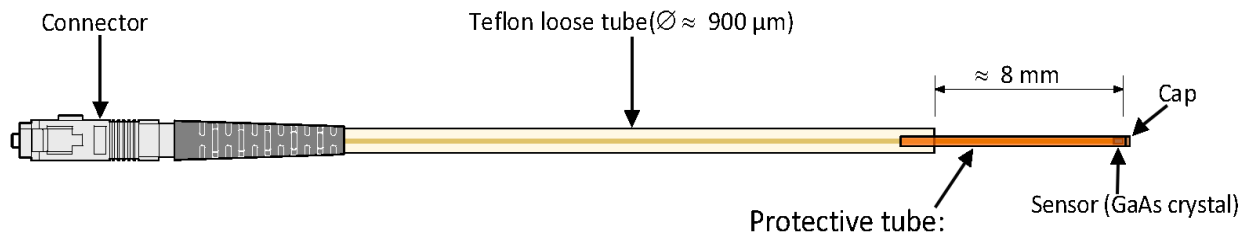
- Detection of fast temperature transient
- Thermal stress analysis
- High voltage environments
- Junction temperature evaluation of transistor
- Temperature mission profile of power modules
- Quality control of integrated circuit
- Thermal modeling assessment
- Active monitoring of power electronics during service

OTG-I220 & OTG-I360

FIBER OPTIC TEMPERATURE SENSOR

OTG-I220 with protective polyimide tubing (0.22 mm OD)

& OTG-I360 with protective stainless steel tubing or protective glass tubing (0.36 mm OD)



Protective tube:

Ø ≈ 220 µm Polyimide tubing

Ø ≈ 360 µm Stainless Steel tubing

or

Ø ≈ 360 µm Glass tubing

SPECIFICATIONS

SENSOR MODEL	OTG-I220	OTG-I360 (GT)	OTG-I360 (SS)
RESPONSE TIME	≤ 35 ms	< 100 ms	< 100 ms
SENSOR DIAMETER	0.220 mm	0.360 mm	0.360 mm
SENSOR TIP MATERIAL (TUBE)	Polyimide	Glass	Stainless Steel
TEMPERATURE OPERATING AND CALIBRATED RANGE	-40 °C to +250 °C (other ranges available upon request)		
ACCURACY	± 0.8 °C or better for other temperature range		
OPERATING HUMIDITY RANGE	0-100 %		
EMI/RFI SUSCEPTIBILITY	Complete immunity		
CALIBRATION	NIST traceable		
CABLE LENGTH	1.5 meters standard (other lengths available)		
OPTICAL CONNECTOR	LCA, ST standard		
CABLE SHEATHING	Teflon™ PTFE (other materials for sheathing available)		
SIGNAL CONDITIONER COMPATIBILITY	All Opsens Solutions' GaAs (SCBG) signal conditioners		