

# METALLIZED CERAMIC SENSORS

## Remtec's Cost Effective Solution for Demanding Sensor and Sensing Applications

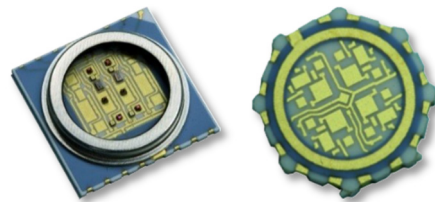
Remtec Thick & Thin Film Advanced Metallization Technologies represent a versatile and cost effective solution for demanding applications focusing on a broad range of sensors and sensing related technologies. Amongst those are motion/velocity and acceleration systems, electrical measurement (capacitance and resistance), medical monitoring, diagnostic and detection, optical such as light sources, infrared detectors and fiber optics, liquid and gas flow, temperature and thermal conductivity as well as wireless sensors.

### Typical applications shown below



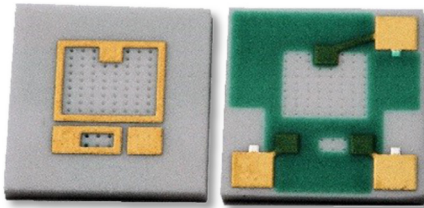
Medical Diagnostic Device for measurement of tissues properties. It consists of two leadless SMT ceramics for laser source and detector modules with TO-type window lids.

**Features:** hermetic, solid metal plugged vias, castellations (wraparounds), high mechanical precision.



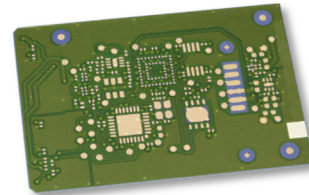
Medical Diagnostic. Non-intrusive sensor for vital signs such as blood oxygen content. Concept based on LED circuitry.

**Features:** highly conductive hermetic plugged vias, multilayer construction and PCTF®.



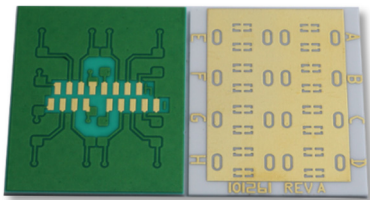
Sensor for liquid materials content, concentration and flow. Must withstand highly corrosive environment.

**Features:** Ceramic with rugged metallization and tightly controlled vias for flow stream as well as highly conductive hermetic plugged vias, PCTF®.



Sensor with a differential input pair node capacitance measurement for X-ray Imaging in dental Instrumentation. High speed signal application with controlled impedance.

**Features:** high density, tightly controlled thick film multilayer ceramic with low dc resistance plugged vias. Suitable for BGA assembly, wire bondable and solderable.



Fluid Analyzer.

**Features:** PCTF with solder mask and plugged vias on 96% alumina ceramic.



Sintered thick films to support ion-selective membrane technology for biosensors.

**Features:** high activity electrodes such as Pt and Pt/Ag and broad range, high precision resistors.



Ceramic Packaging Solutions For Optimum Performance

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# METALLIZED CERAMIC SENSORS

## Remtec Offers a Variety of Versatile Metallization Technologies for Sensing Applications

To meet specific customers' requirements Remtec applies a variety of different technologies based on its core thick film metallization often combined with plating techniques as listed in the table below.

### Metallization Technologies

Metallization Technology	High Density Thick Films	Etchable Thick films	Thin films	PLATEABLE TECHNOLOGIES		
				PCTF®: Plated Copper on Thick/Thin Films	AgENIG®: Electroless Ni - Immersion Au over Thick film Ag	Direct Bond Copper: 125 µm thick
Features						
Line/Space, µm	100/100	50/50	50/50	50/50	50/50	250/250
Castellations (wraparounds)	Yes			Yes	Yes	
Metal Plugged Vias (hermetic)	Yes	Yes	Yes	Yes	Yes	Yes
Multilayers, 6 Metal layers	Yes			Yes	Yes	
Finish				Ni, Au, Sn, AuSn	Ni-Au	Ni, Au, Ag, AuSn
Harsh Environment Operation	Yes	Yes	Yes	Yes	Yes	Yes
Operation Temperature	250°C continuous	250°C continuous	250°C continuous	250°C continuous	250°C continuous	Up to 790°C continuous
Leadless SMT capability	Yes	Yes	Yes	Yes	Yes	

Product integrity, reliability and repeatability is a result of using state-of-the-art equipment and processes including automated cassette-to-cassette screen printing and firing, high speed step-and-repeat laser trim, photolithography, modern electrolytic and autocatalytic plating as well as lapping and dicing. High product quality is based on intensive direct labor training program, supplier evaluation, material analysis, wide use of SPC methodology and product/process qualifications, as well as routine process auditing.

Remtec, a RoHS compliant, ISO 9001:2008 registered and ITAR compliant company, operates a manufacturing facility totaling 33,000 sq. ft. in Norwood, MA. Remtec's sales and application engineering staff provides fast response, quick turnaround and comprehensive custom and semi-custom packaging solutions to satisfy the needs of a diverse customer base. Remtec supplies substrates and packages for sensors and detectors, RF/MW products, DC power electronics, optoelectronics and other high density and power circuitry in commercial, industrial and military/aerospace industries. For more information, please visit us at: [www.remtec.com](http://www.remtec.com) or contact us at [sales@remtec.com](mailto:sales@remtec.com).

