

## OUR SPECIALTY

We specialize in the design and manufacture of thick-film hybrid microcircuits and custom packagings.

## OUR SCOPE

We serve the global market, catering to the specific needs of a broad range of industries:

- Automotive Electronics
- Consumer Electronics
- Avionic Electronics
- Instruments
- Microwave Modules
- Sensors
- Power Supplies
- Telecommunication Electronics



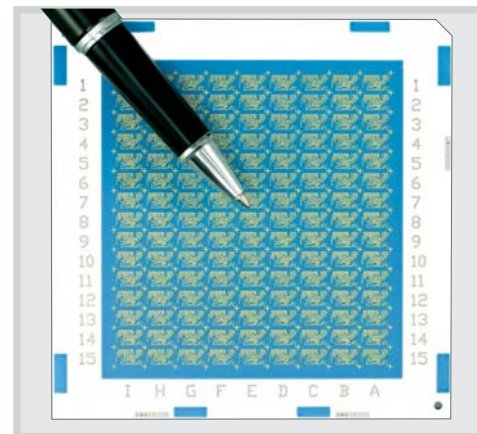
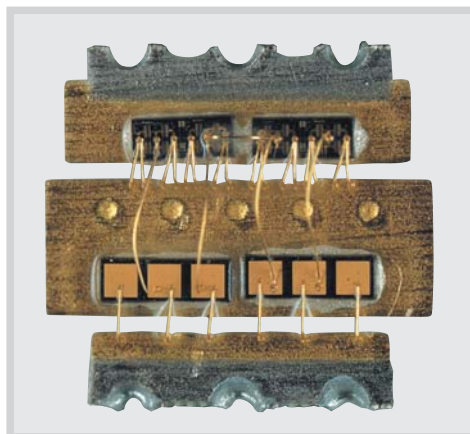
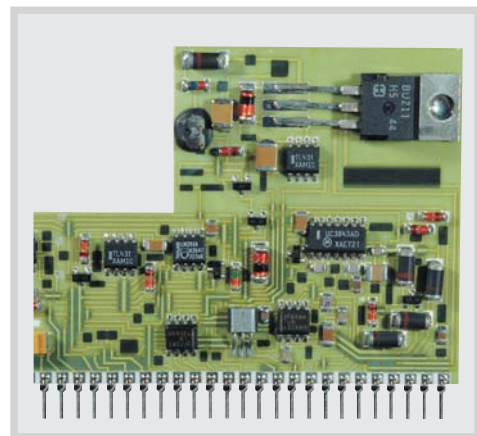


## CUSTOMER ORIENTED

**E**stablished in 1991, Hybrionic Pte Ltd is a customer-oriented company in the design, manufacture and supply of quality hybrid microcircuits. Our cutting-edge products range from thick film, chip & wire, to discrete hybrid microcircuits consisting of active, passive and combination circuitry. Our customers span the world and cover a spectrum of industries, from automotive to telecommunication electronics.

In this dynamic field, we believe that long-term business partnerships are the key to sustained success. To fully serve our customers, we offer excellent design service support to jointly design and hybridise electronic circuits for production, from initial concept to product development and manufacture.

Our facilities include a 10K-class cleanroom, more than 1,500 sqm of manufacturing facility and more than 2,000 sqm of total factory area. To back our commitment to our customers, we have established the engineering expertise, materials management, production facilities and quality system to meet your unique requirements.



## MANUFACTURING EDGE

Most of our technicians, engineers and machine operators have more than 13 years of experience in the company.

All thick-films, chips & wires manufacturing operations are done in a class 10k clean room temperature controlled at  $22 \pm 2^\circ\text{C}$  and humidity between 40-60% RH. All other operations are in 100k controlled facilities.

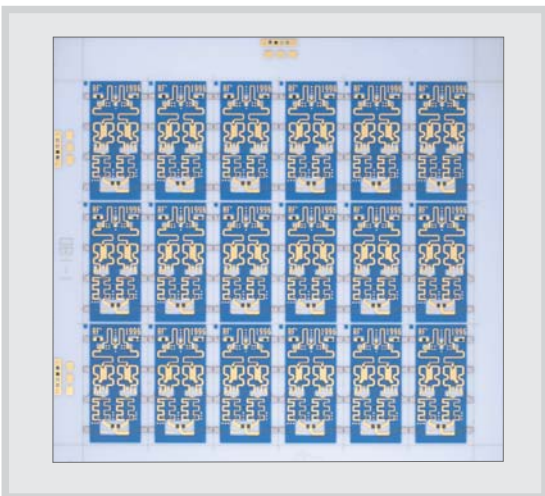
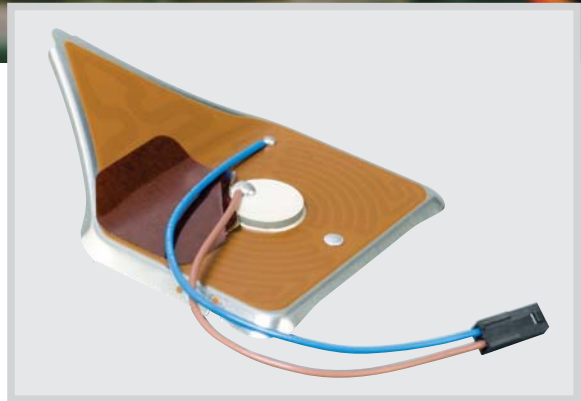
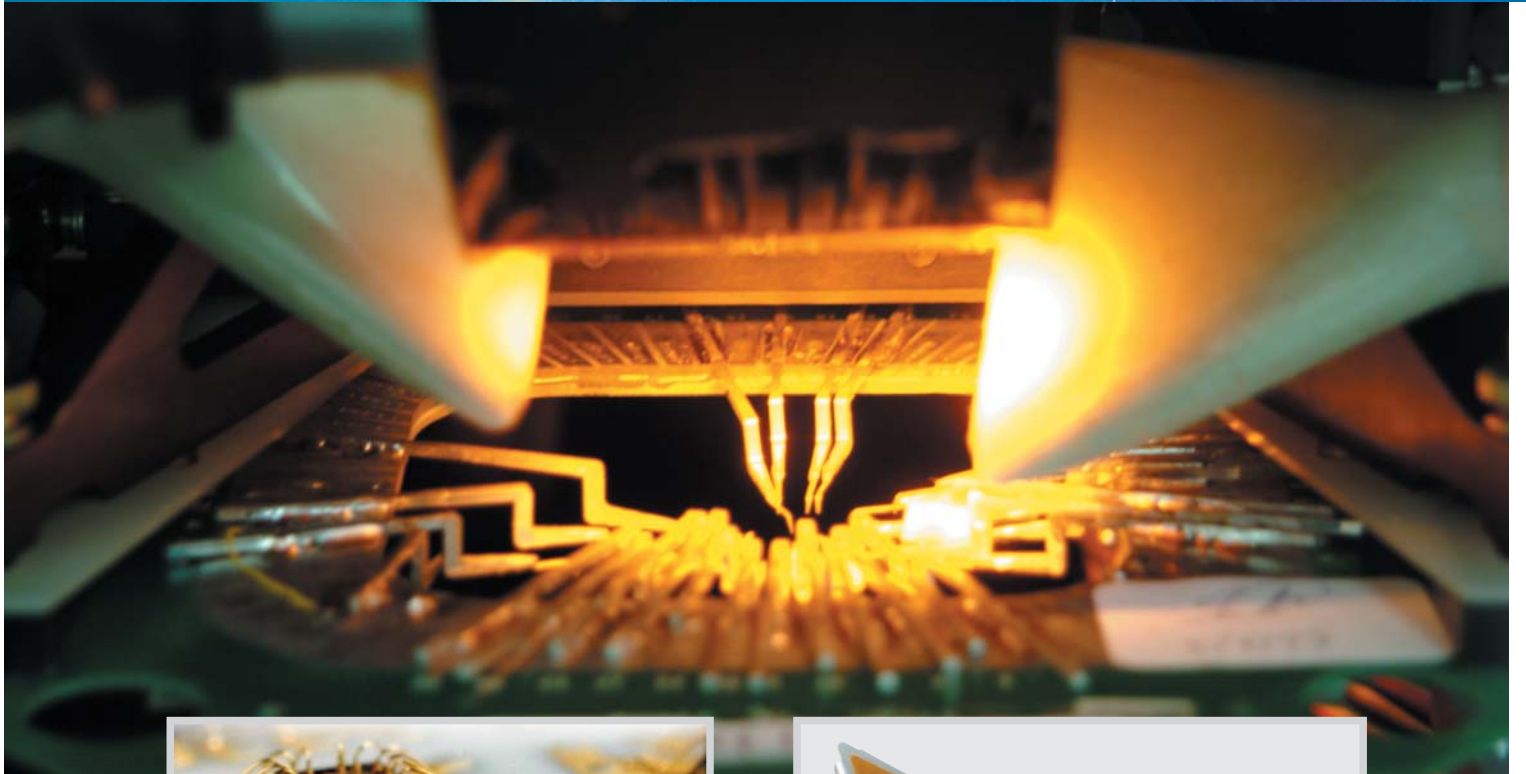




**Facilities include:**

- Auto and semi-auto fine line printers with high resolution and good repeatability capability
- Ceramic sizes ranging from 0.5" x 0.5" x 0.01" up to 10" x 8" x 0.06"
- Multi layers of up to 48 prints
- Non-contact thickness laser analyzer is used to check print thickness
- Quick response furnaces with belt width of 25 inches
- Fodel and diffusion patterning systems are employed to achieve a 2 mils line width and 2 mils spacing circuit geometry. Up to 6 layers of dielectric separations on both sides are the norms
- Laser trimming systems to perform both passive and active trimming
- All systems can handle 0.05 ohm to 1G-ohms with tolerance of 0.02% in typical mid range values. Accuracy of up to 0.1% of reading
- Various types of wafer probers. Most systems are versatile and can be readily programmed to meet customer's wafer testing requirements
- Different types of dicing saw are available to cater to the different needs of customers
- All wafer are inspected with high power scope of up to 1000X
- Fully automated and semi-automated die bonders. All fully automated machines come with a 6.0" x 6.0" X-Y station for the boards and can handle dies from both wafer rings and waffles packs. Capable of handling chip sizes from 0.01" to 0.5" square, including custom sizes
- Wide range of gold and aluminium wire bonders
- Flip-Chip IC dice attachment
- Component placement 0.01" X 0.005"
- High speed bonder has provided Hybrionic with huge capacity to take on high volume productions
- Gold wire from 0.7 mils to 2.0 mils and aluminium from 1 mil to 20 mils
- Three-in-one die shear, ball shear and wire pull tester, that comes with a comprehensive SPC programme
- Plasma Cleaning Oven
- Epoxy Dispensing System
- X-Ray Inspection Machine
- Solder Paste Printing
- Vision Centering Pick & Place Machines
- Hybrionic can fine tune a reflow method and profile that will best fit the customer's requirements
- In-Circuit Tester
- Double Sided Probing Vision System
- VXI Functional Tester
- National Instrument Lab View System





## **ENGINEERING EXPERTISE**

- Qualified engineers in design, project, and process with extensive experience in active, passive, digital and analogue thick film microcircuits
- Work closely with customers to develop new designs, test specifications and manufacturing processes
- Fast response in design and prototype manufacturing
- Problem-solving and trouble-shooting with customers on special applications and requirements



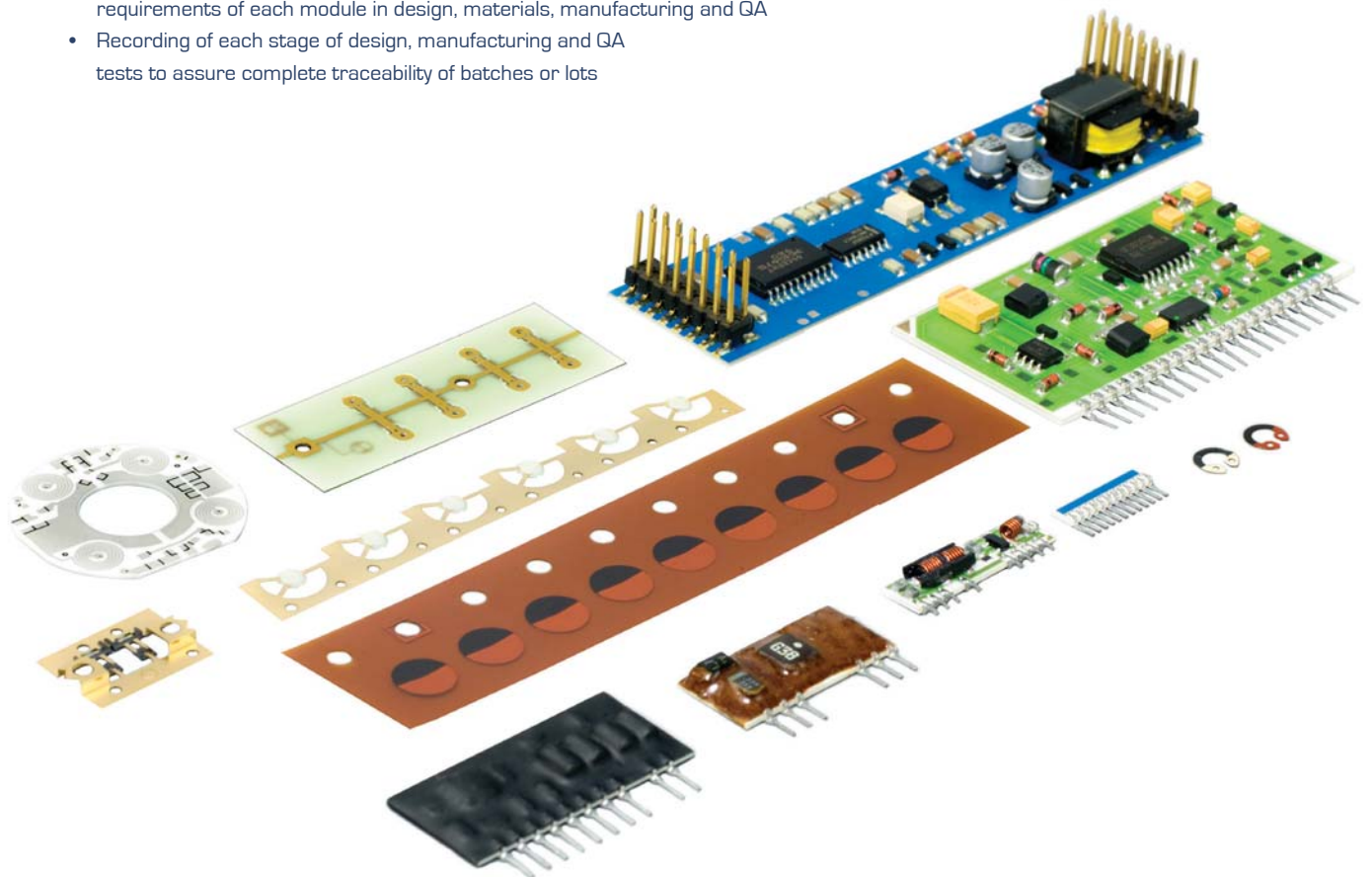
## MATERIALS MANAGEMENT

- MRP system controls production schedules and issuing of materials; from the first stage of production to ensure close material control, production control and traceability of each component
- Just-In-Time operations is achieved by maintaining batch & lot control throughout manufacturing processes
- All materials come from approved sources

## QUALITY FOCUS

Our quality systems are certified to ISO 9001, TS 16949 and Ozone Depleting Substance (ODS) Free Process.

- Achieved Zero PPM quality level for most customers
- Statistical Process Control programme in all manufacturing processes
- Special equipment: vibration, thermal shock, temperature cycling, moisture, resistance, high temperature, pressure cooking, burn-in, X-ray and life test
- Test systems for consistent quality and reliability in manufacturing; recording of process charts, specifications and quality requirements of each module in design, materials, manufacturing and QA
- Recording of each stage of design, manufacturing and QA tests to assure complete traceability of batches or lots



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CERT NO.: 95-2-0460  
ISO 9001:2008



CERT NO.: TS-2004-0019  
ISO/TS 16949:2009



PSB Singapore  
Cert No: 97-0039  
ODS-Free Process