



Welcome to ECRIM

**...Your Best Choice for
Hi-Reliability Metal Packages**



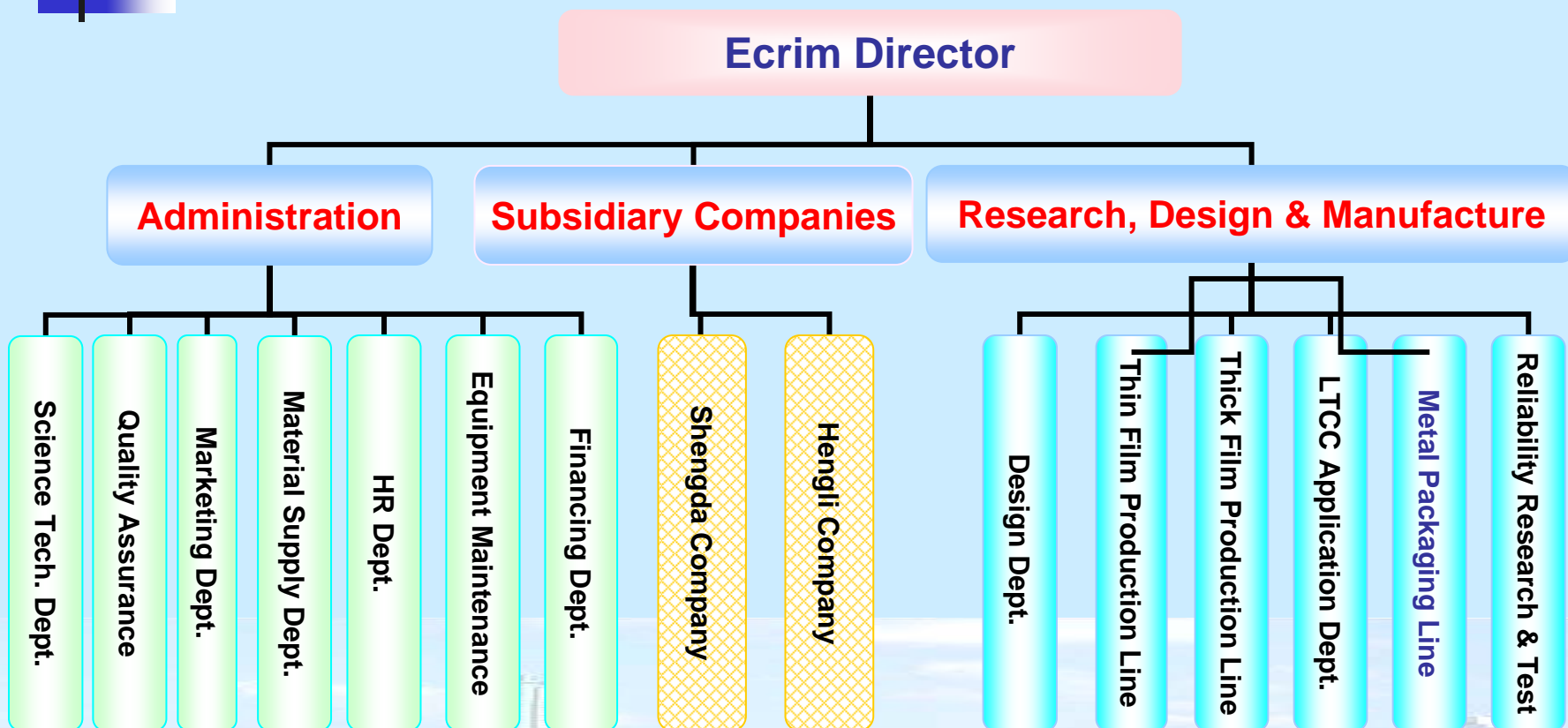


Brief Introduction

- **Company Name: East China Research Institute of Microelectronics**
- **Established in 1968**
- **Fixed Assets: RMB 260,000,000**
- **Sales Revenue 2007: RMB 200,000,000**
- **Total Employees: 826 persons**
- **Land Area: With the area of 160,000 m²**



所况介绍



Main Production Lines

➔ Metal Packages Production Line



➤ Largest high-end metal package supplier in China with advanced quality.

➤ Over 400 package type varieties.

➤ Used in hybrid integrated circuit, integrated semiconductor circuit, fiber optical device, surface acoustic wave device, solid state relay, microwave circuit and pressure sensor, etc.

➤ Annual capability over 500,000 sets.





Package Production Line Introduction

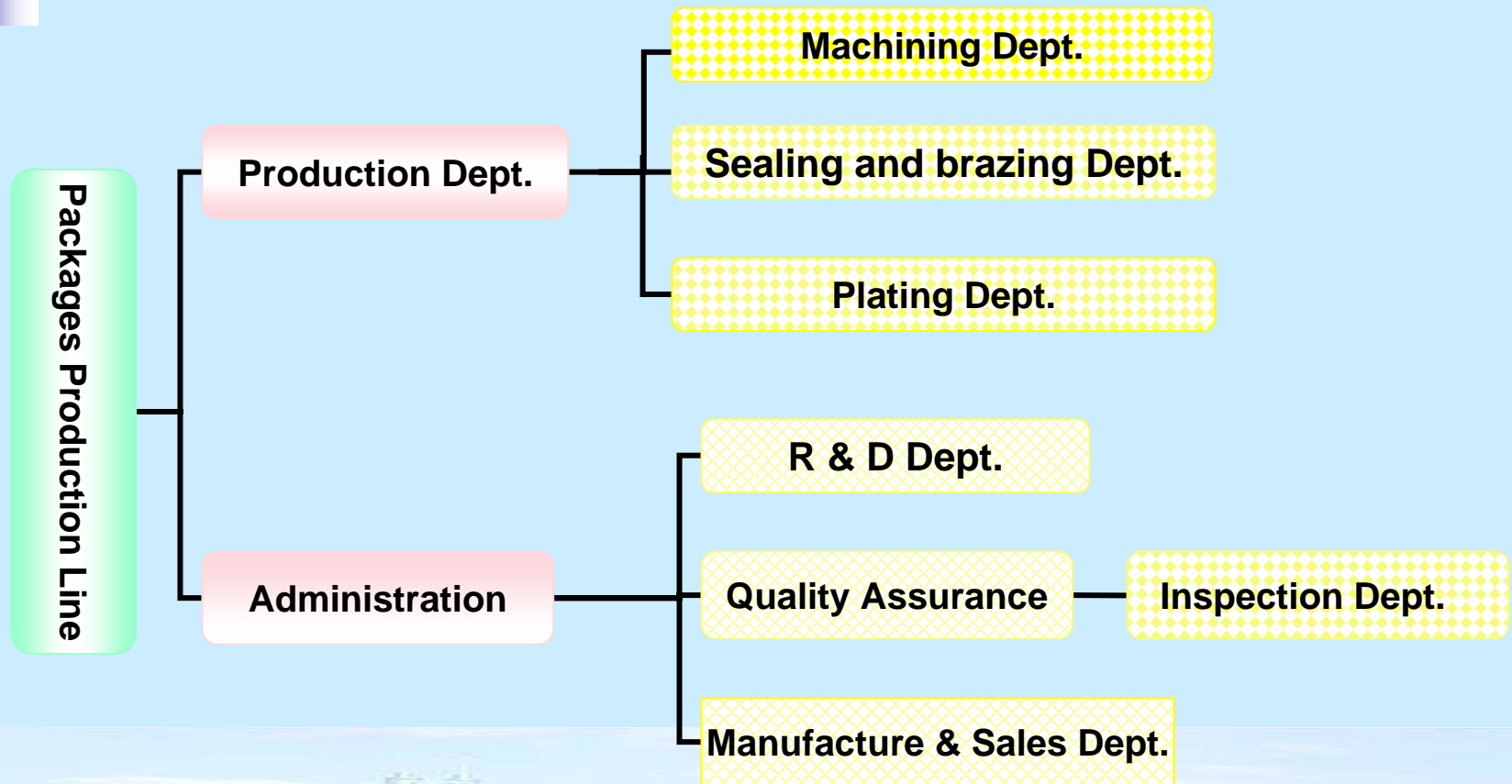


Packages Production Line Overview

- Established in 1988
- Equipments & Instruments worth: RMB 12,000,000
- Employee: 173 persons
- Plant area: 4,600m²



Organization Chart





Packages Production Line Overview

➡ Metal Packages Category

- Uni-body Plug-In Packages
- Uni-body Plug-In Power Packages
- Flat Packages
- Flat Power Packages
- Platform Packages
- Fiber Optic Packages
- Special Style Packages

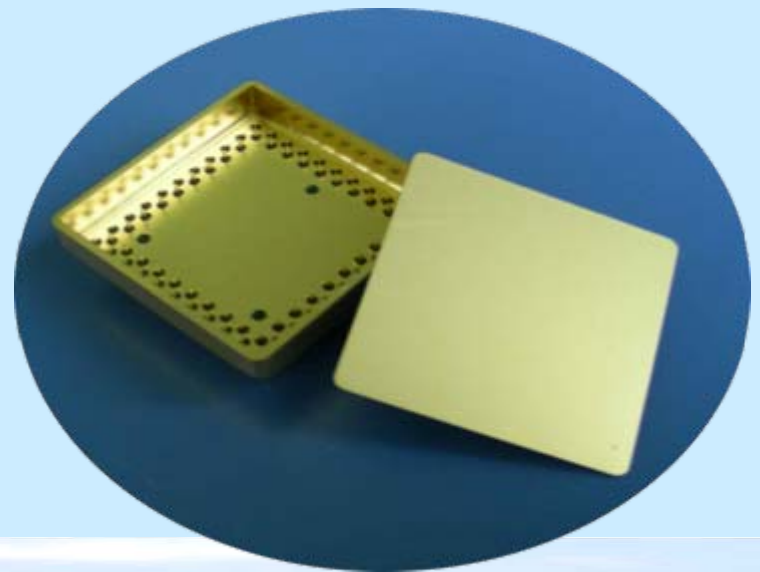
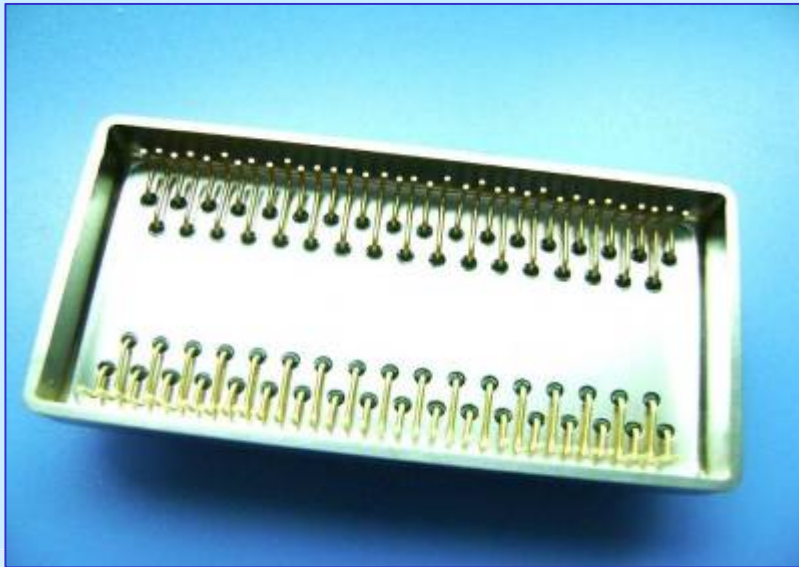
Package Products

➔ Uni-body Plug-In Packages



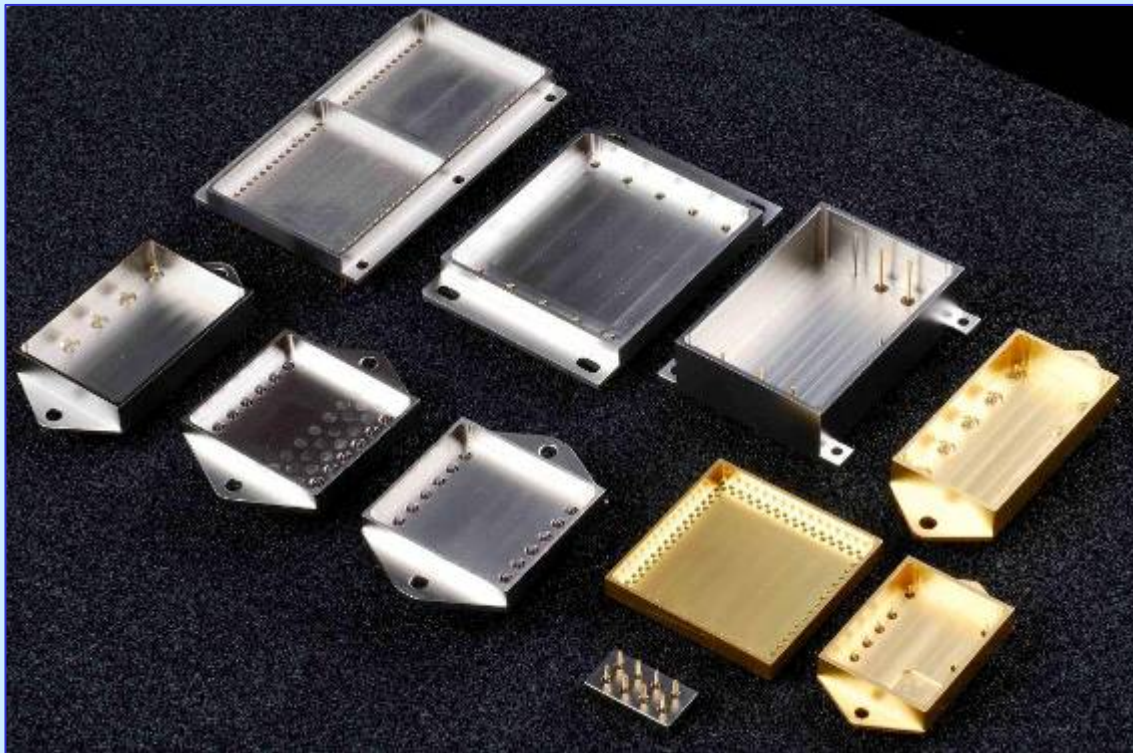
Package Products

➔ Uni-body Plug-In Packages



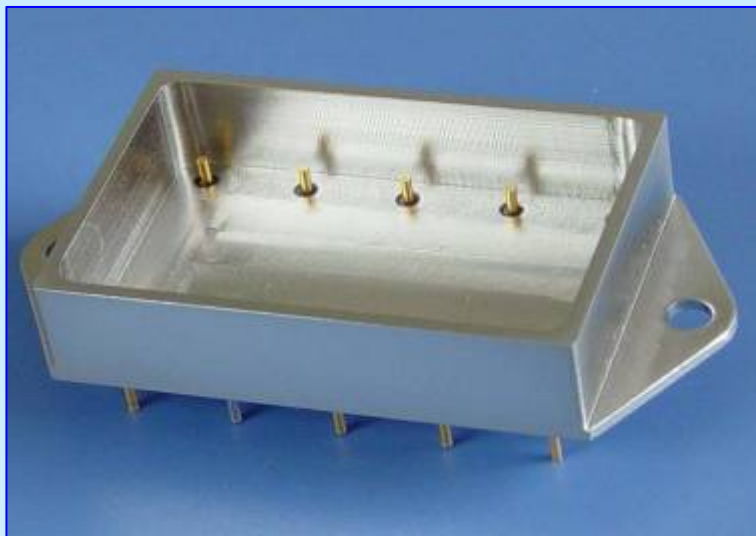
Package Products

➡ Uni-body Plug-In Power Packages



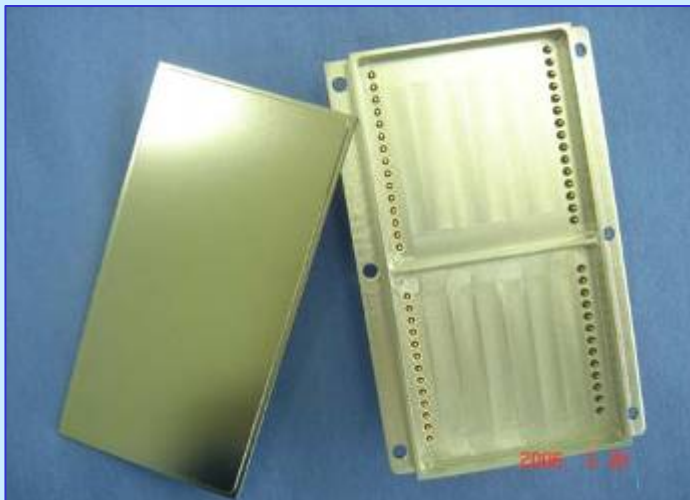
Package Products

► Uni-body Plug-In Power Packages



Package Products

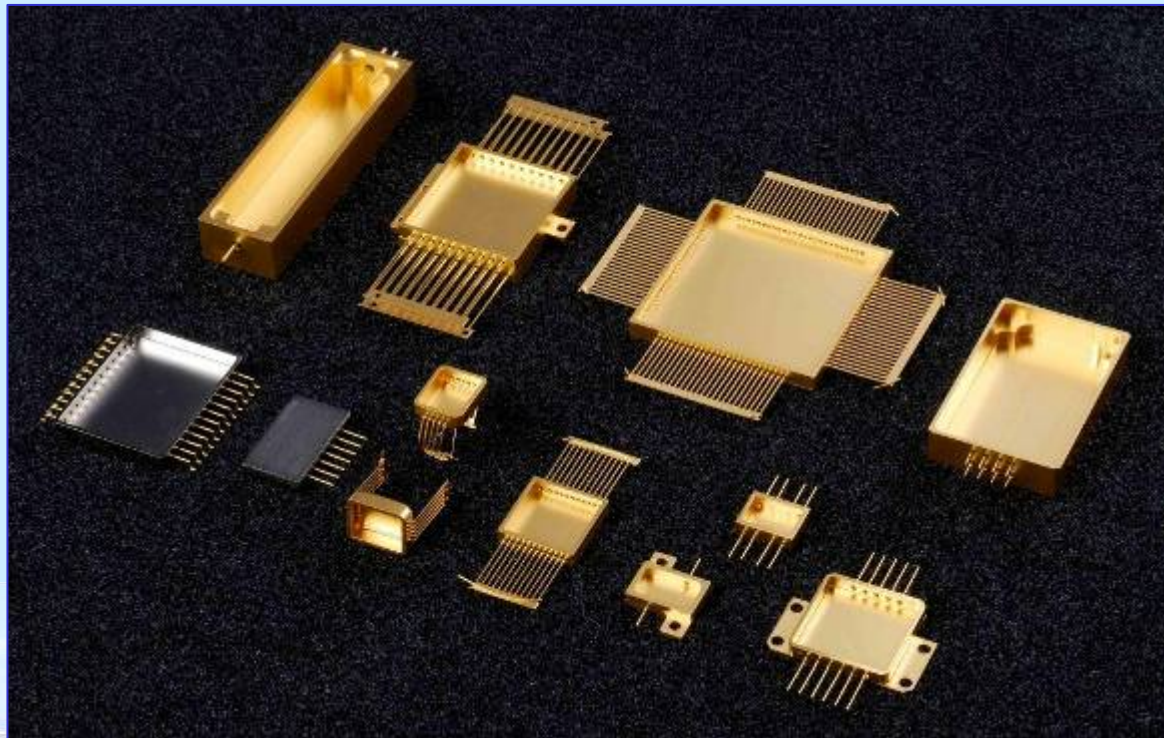
➡ Uni-body Plug-In Power Packages





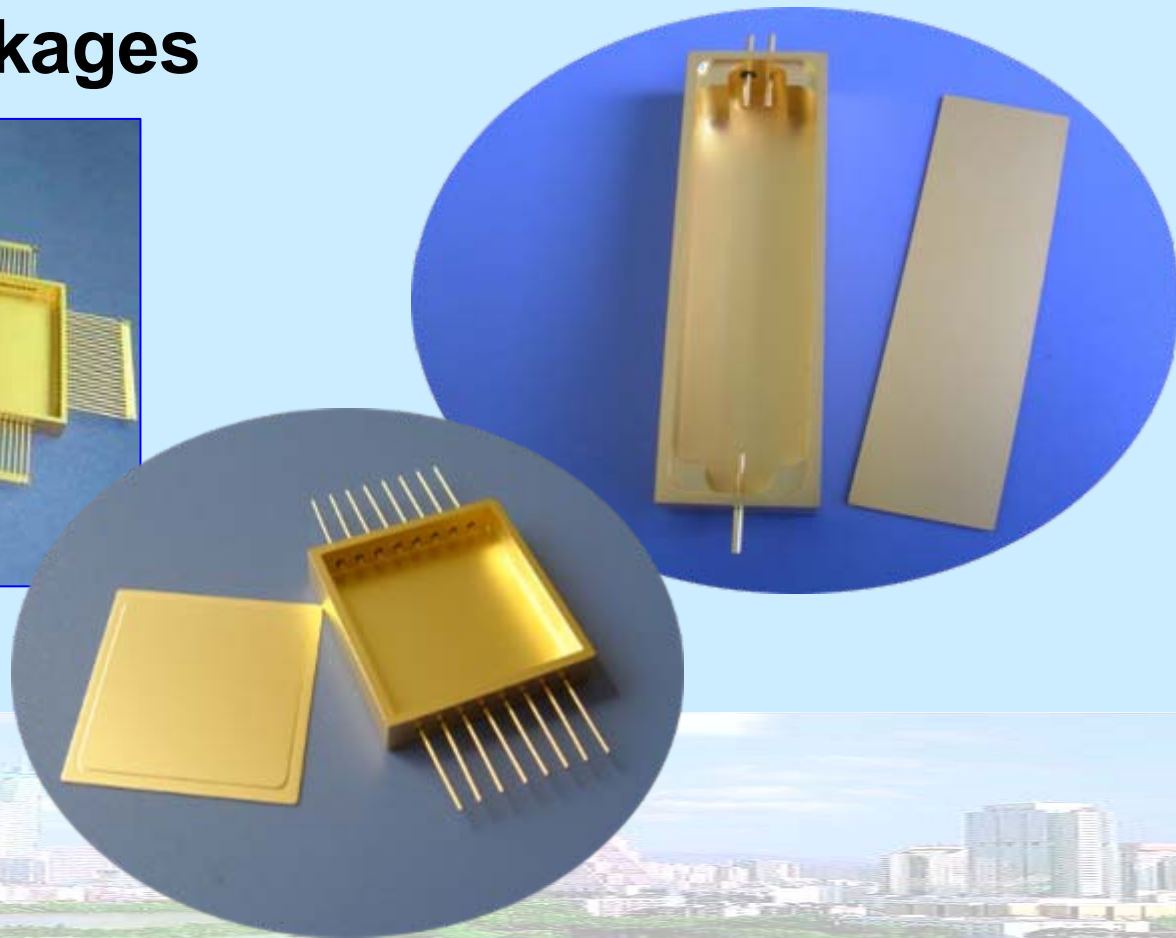
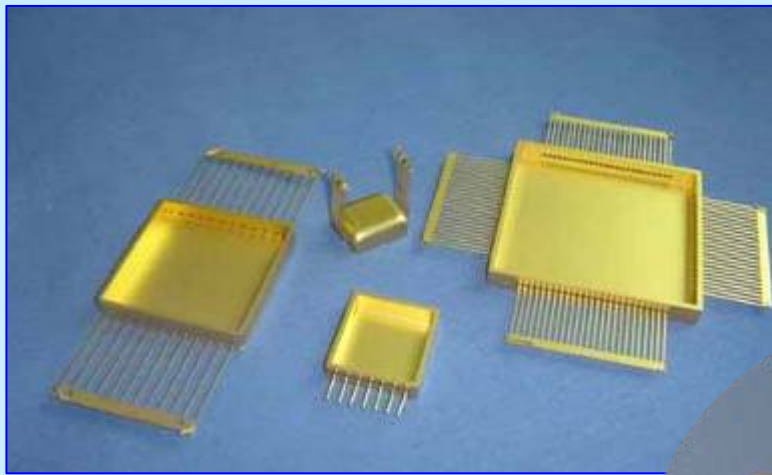
Package Products

➡ Flat Packages



Package Products

Flat Packages



Package Products

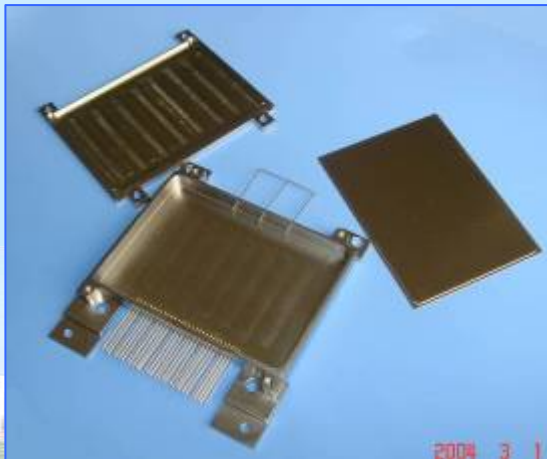
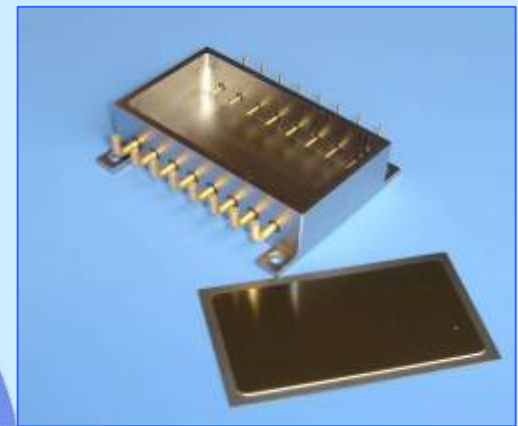
➡ Flat Power Packages





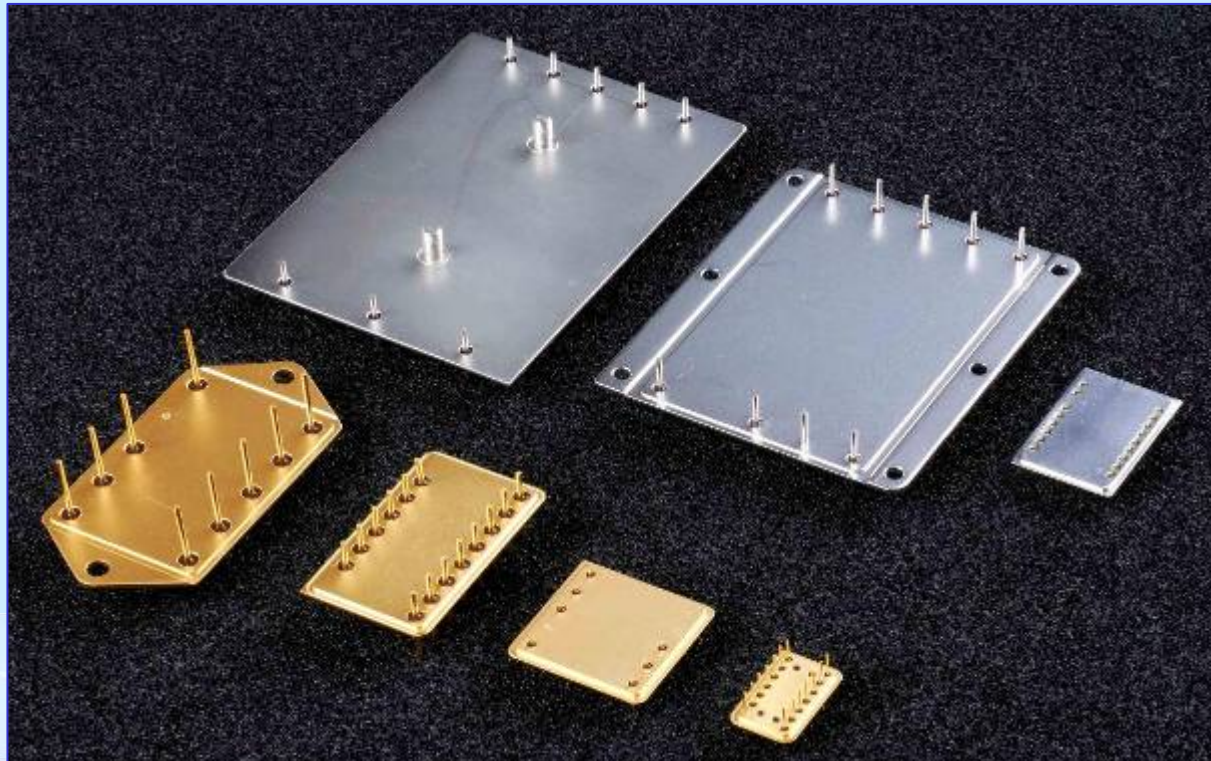
Package Products

➡ Flat Power Packages



Package Products

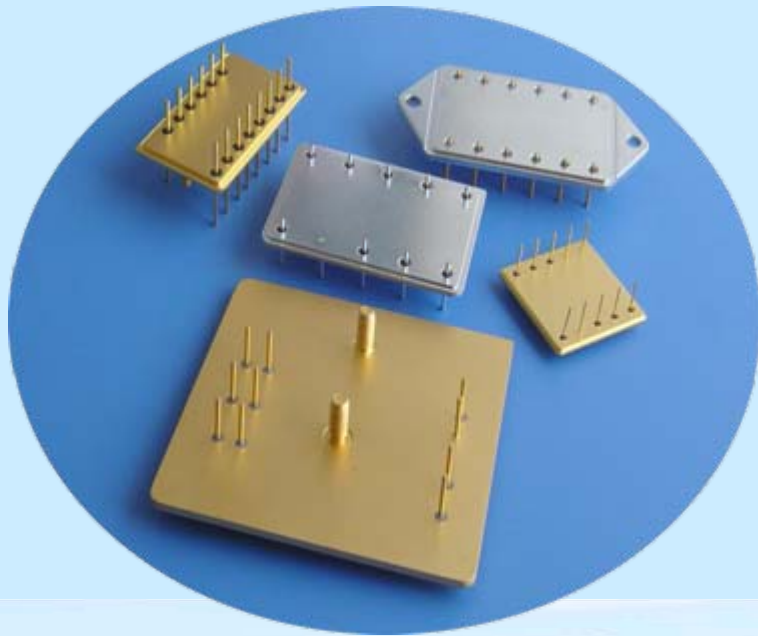
➡ Platform Packages





Package Products

➡ Platform Packages



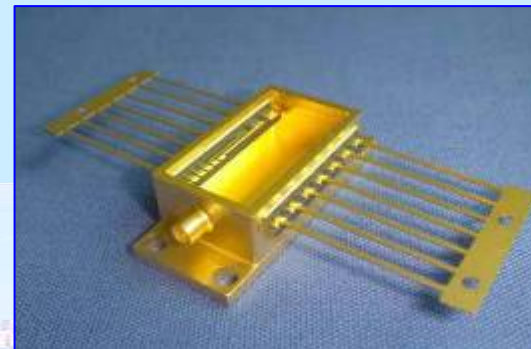
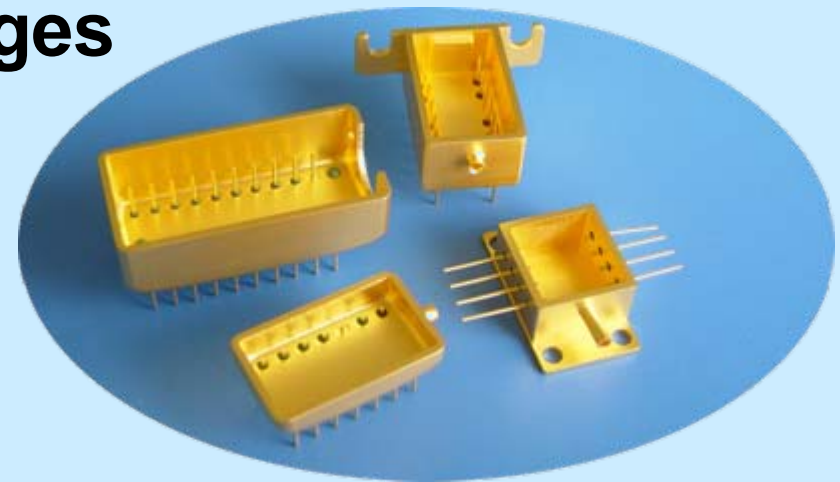
Package Products

➔ Fiber Optic Packages



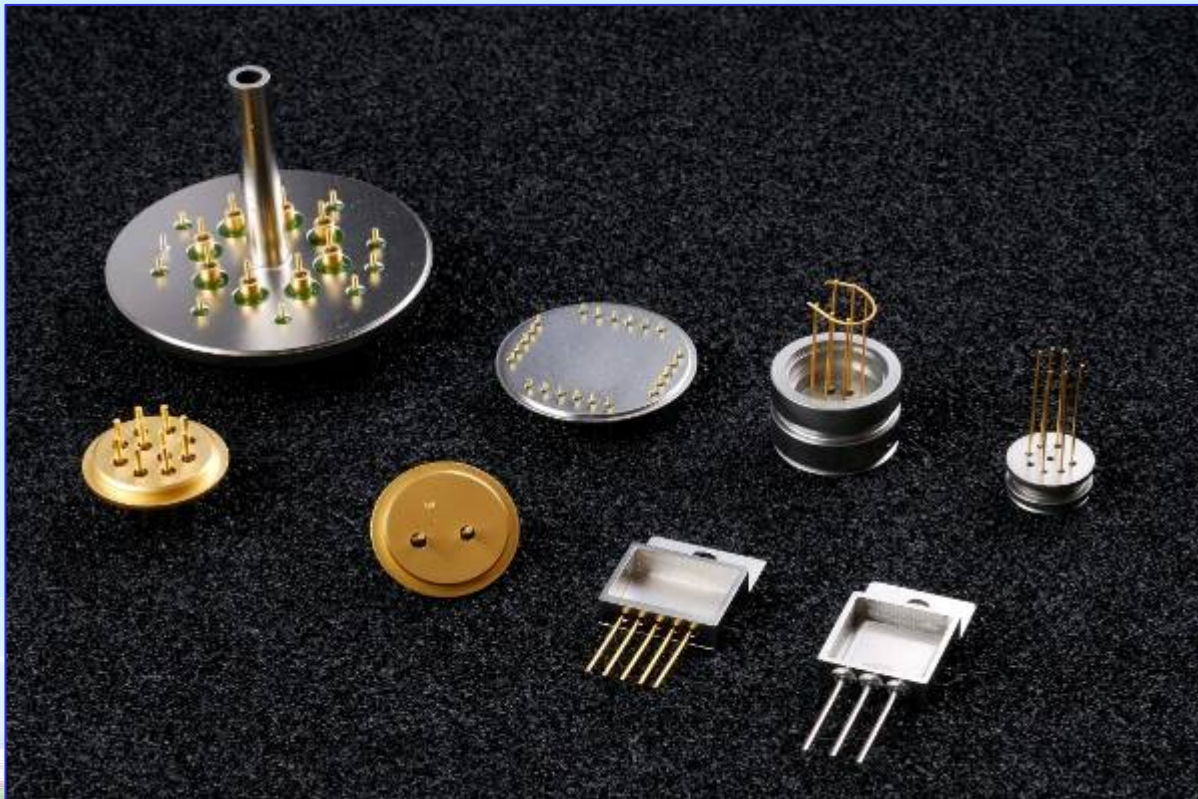
Package Products

➔ Fiber Optic Packages



Package Products

➔ Special Style Packages



Package Products

➔ Special Style Packages



TO254



54PIN



Pressure Sensor PKG

Package Products

➔ Special Style Packages



**Surface Acoustic Wave
Device PKG**

Package Products

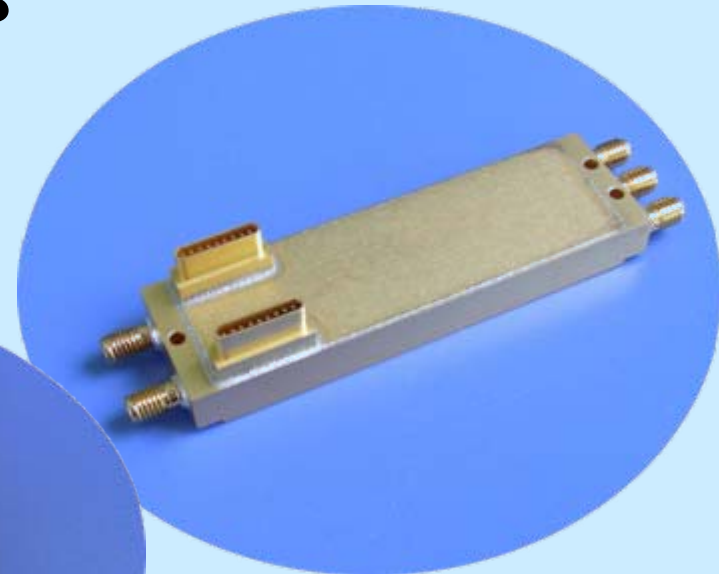
➔ Special Style Packages



**Steel base Copper
built-in Package**



Optical window sealing and coating



**Al-SiC Substrate
Package**



Package Manufacture Process

- ▶ **Machining process**
- ▶ **Sealing and brazing process**
- ▶ **Plating process**
- ▶ **Lids & caps manufacture process**
- ▶ **Glass preforms manufacture process**



Package Manufacture Process

➔ Machining Process

- All tools designed and built in-house
- Have the ability of stamping, milling, turning, grinding and EDM.
- 5 CNC milling machines, 1 NC milling machine and 2 wire electrical discharge machine
- Various shape and dimension of parts can be machined according to customers' requirements.



Package Manufacture Process

➔ Sealing and Brazing Process

- Matched glass sealing for Kovar
- Compressed glass sealing for CRS or OFHC or SS304L
- Hermetically brazing between metal parts
- Leakage rate less than 10^{-8} atm·cm³/s
- Four atmosphere furnaces



Package Manufacture Process

▶ Plating Process

- Electrolytic and electroless nickel plating
- Electrolytic gold plating
- Electrolytic tin plating
- Analysis methods for plating solution
- Products are able to pass salt atmosphere test for 24h



Package Manufacture Process

➔ Lids and Caps Manufacture Process

- Design and manufacture etched lids applied to parallel seam sealing.
- Design and manufacture deep cavity caps applied to soldering, laser welding and project welding.



Package manufacture process

➔ Glass Preforms Manufacture Process

- Various dimension , high accuracy glass preforms are manufactured in-house.
- The dewaxing and calcining technics of glass insulators.



Package Final Inspection

➔ Screening

- Visual inspection
- Insulation resistance
- Leakage rate

➔ QCI

- Package evaluation as per
MIL-PRF-38534 or customers' standards





QA for Packages

- **Operator and inspector training**
 - Pre-post training and regular training
- **Regular check for test equipments and instruments**
- **Quality control of suppliers and incoming materials**
 - Selection and regular evaluation of acceptable suppliers
 - Inspection of incoming materials
- **In process quality control**
 - Self, mutual and professional inspection by operators & inspectors



QA for Packages

➔ **Key processes control**

- Regular evaluation of glass-to-metal sealing quality
- Regular evaluation of plating quality
- Regular analysis and maintenance for plating solution

➔ **Final inspection**

- Screening
- QCI



Quality Assurance System

➔ Test Equipments



Salt Atmosphere Test Chamber



Internal Vapor Analyzer System



Quality Assurance System

➔ Test Equipments



Temperature Cycling Chamber



Humidity & Temperature Tester

Quality Assurance System

➔ Test Equipment



PIND Tester



Burn-in and Test System



Quality Assurance System

➔ Test Equipment



Scan Electron Microscope



X-Ray System



Adopted Standards

➤ **Packages design, performance and reliability conformed with following international standards:**

- **Visual inspection:** JEDEC 9 – A
- **Design, performance & reliability:** MIL – PRF – 38534
- **Gold plating quality:** MIL – G – 45204
- **Nickel plating quality:** QQ – N – 290



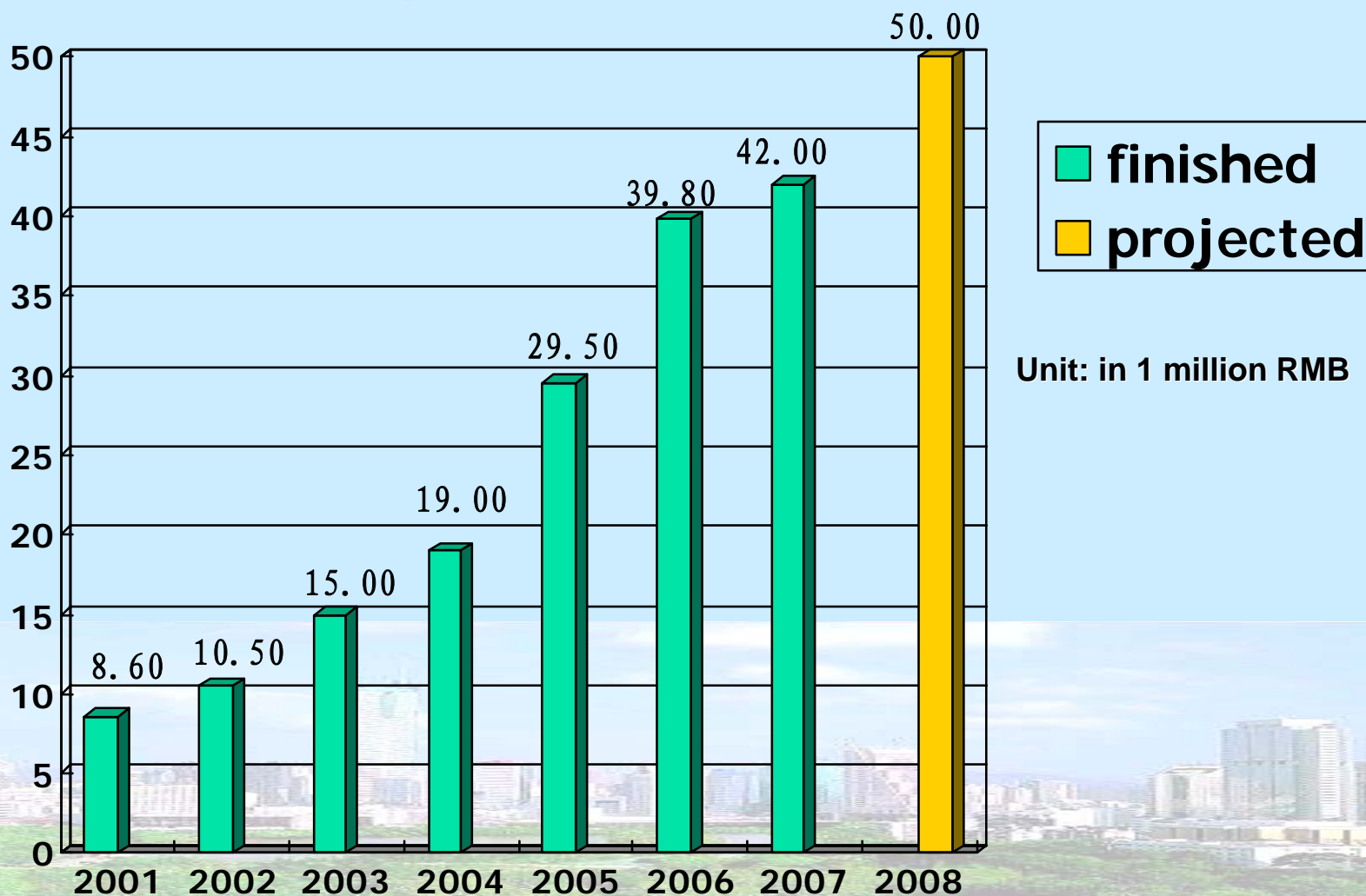


Packages Materials

- ➡ **Header material:** Kovar, CRS, OFHC, W-Cu, CIC, 304L
- ➡ **Lead material:** Kovar, Alloy52, Copper core alloy 52
- ➡ **Sealing glass:** 7052, 9013, 7070
- ➡ **Braze material:** Ag-Cu, Ag, Au-Sn

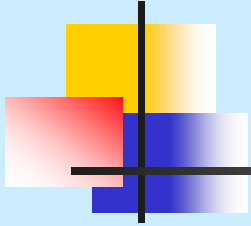


Annual Output Value Chart



Whole Company Plan





Thanks!

