Stock code：003031

Professional Ceramic Package Manufacturer

HE BEI SINOPACK ELECTRONIC TECH CO.,LTD.

www.sinopack.com.cn

Contents

01 • About Sinopack

02 • Main Product

03 • Ability

04 • Quality

Sinopack

- The leader of ceramic packaging technology of China
- Established in Aug.2009 with registered capital 149 million RMB
- Committed to alumina ceramics, aluminum nitride ceramics and other materials, process research and development.
- Sinopack has a comprehensive grasp of manufacturing technology about multi-layer ceramic packages and substrates, and build several automatic production lines.
- It is equipped with advanced design instrumentalities such as high frequency, stress and thermal simulation, also established a complete testing technology platform for packages and substrates.
- Sinopack can provide professional solution for ceramic packaging which can meets the international standard.

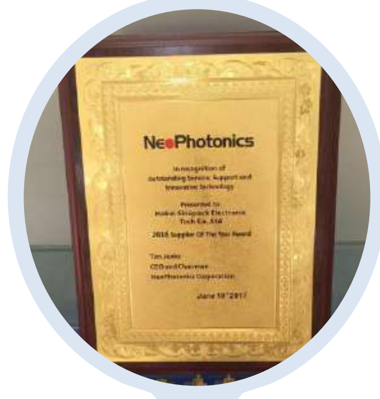
★Located in Shijiazhuang City, 300km south of Beijing

★Workshop building : around 25000m² ， including 6700m² clean room

★The new plant is under construction wihch is 100 meters away from the current one

ABOUT SINOPACK

Rewards



Neophotonics
2016
Supplier of the Year Reward

Lumentum
2017
Excellence in value innovation Supplier

Oplink
2018
Business partner Award

Raycus
2019
Best support Award

XGIGA
2019
Excellent quality Award

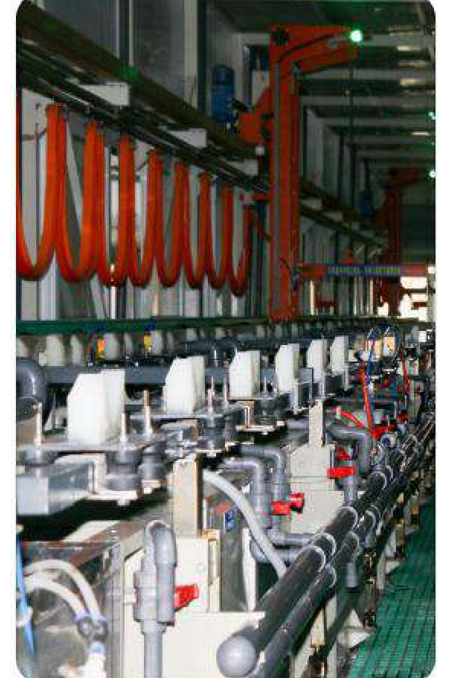
Accelink
2020
Delivery Support Award

ABOUT SINOPACK

Certificates

53 patents, including 10 invention patents and 43 utility model patent

ABOUT SINOPACK



PRODUCTION LINE OVERVIEW

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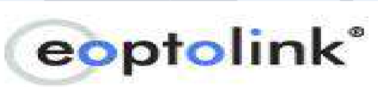
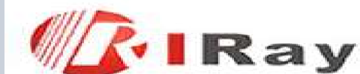
ABOUT SINOPACK

Main Customers

Category	Customers			
Optic-Electronic Communication Device PKG				
				
Wireless Communication Device PKG				
High Power Laser PKG				
Consumer Electronic Ceramic products				

Main Products

End-Markets

◆ Wireless Comm.Network

- ✓ Base Station
- ✓ **Satellite Comm.**

◆ Opt.Comm. Network

- ✓ DATA CENTER
- ✓ **局域网(LAN)**
- ✓ **城域通信(Metro)**
- ✓ **接入网(FTTX)**
- ✓ **都市间长距离通信 (Long Haul)**

◆Consumer Electronics

- ✓ 手机 cellphone
- ✓ 笔记本notebook
- ✓ 平板电脑tablet PC

Satellite Comm.

Long Haul

Base Station

Metro

DATA Center

Wireless LAN

LAN （Local Area Netowork）

Consumer electronics

FTTH （Flber the Homen）

◆ High Power Laser Package

◆ Automotive Electronics

Main Products

通信器件用电子陶瓷外壳及基板
ELECTRONIC CERAMIC PACKAGES AND SUBSTRATES FOR COMMUNICATION DEVICES

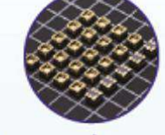
无线功率器件外壳
Packages for Wireless Power Devices

红外探测器外壳
Packages for Infrared Detectors

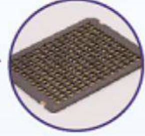
光通信器件外壳
Packages for Optical Communication Devices

氮化铝单层/多层薄膜基板
Aluminum Single/multi-Layer-Thin Film Submount

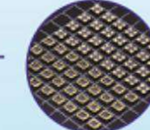
消费电子陶瓷外壳及基板
CONSUMER ELECTRONICS CERAMIC PACKAGE AND SUBSTRATE



声表外壳及基板
Packages and Substrates for SAW Filter



3D传感器外壳
Packages for 3D Sensor



晶振外壳
Packages for Crystal and Oscillator

汽车电子陶瓷产品
PRODUCTS FOR AUTOMOTIVE ELECTRONICS

集成式加热器
Integrated Heaters

车用检测模块
Vehicle Inspection Modules

陶瓷元件
Ceramic Components

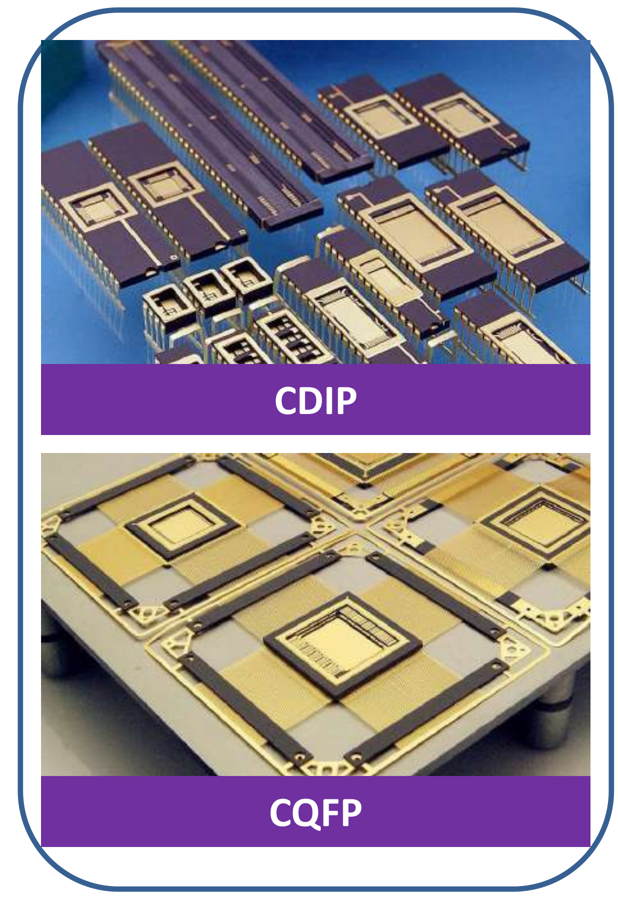
工业激光器用电子陶瓷外壳及基板
ELECTRONIC CERAMIC PACKAGES AND SUBSTRATES FOR INDUSTRIAL LASERS

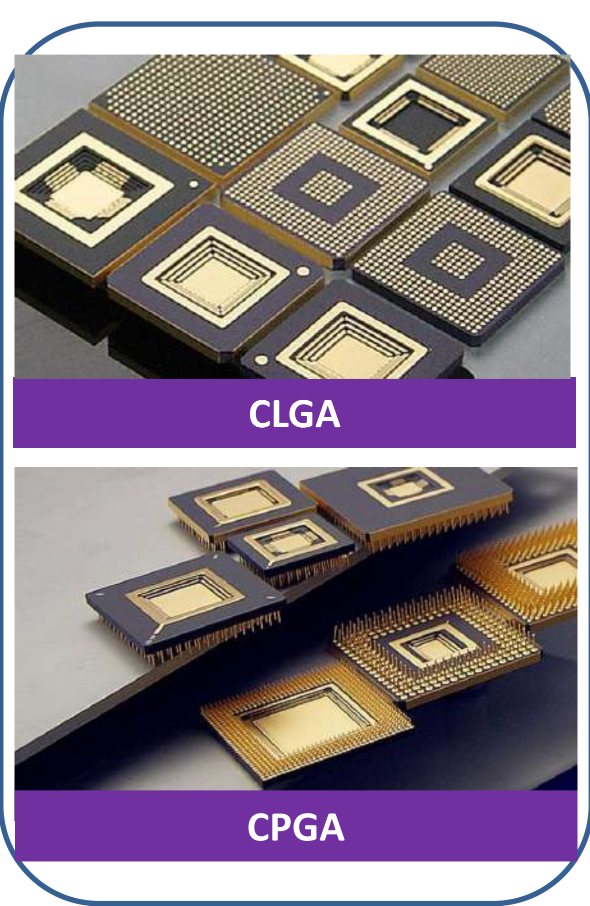
氮化铝厚铜金属化基板
Thick Copper Plated Substrates for High-power Laser Diode

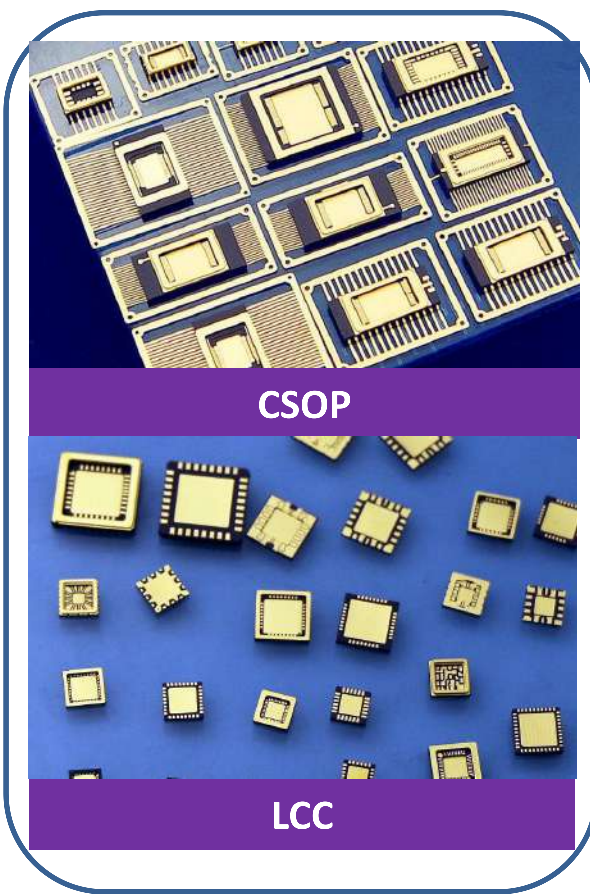
大功率激光器外壳
Packages for High-power Laser Diode

Product introduction

Integrated circuit Device package







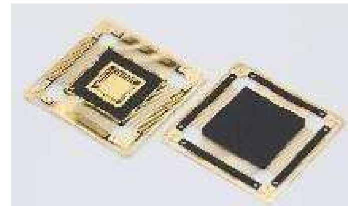
Product introduction

Integrated circuit Device package

CPGA

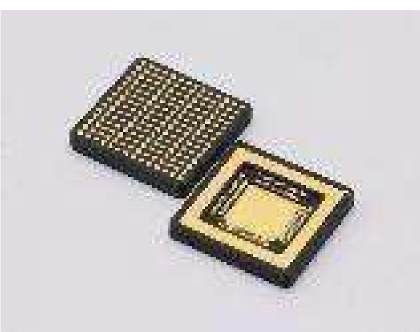
- Applied to digital Signal Processing
- Pluggable
- Pin: φ0.46，φ0.25
- Pitch: 2.54mm&1.27mm
- Frequency ：DC~6GHz
- Sealing method ：parallel seam sealing/Brazing
- Heat sink type :WCu/MoCu

CQFP



- Applied to digital Signal Processing
- Lead width: 0.20mm
- Pitch: 0.50mm
- Sealing method ：parallel seam sealing/Brazing
- Heat sink type :WCu/MoCu

CLGA

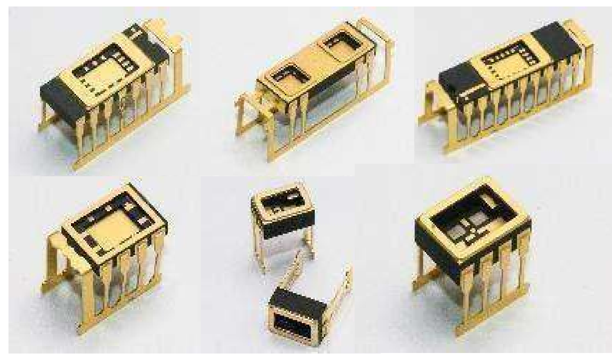


- Applied to digital Signal Processing
- Pad: φ1.80mm，φ0.80mm，φ0.65mm
- Pitch: 2.54mm, 1.27mm, 0.80mm
- Frequency ：DC~6GHz
- Sealing method ：parallel seam sealing/Brazing

Product introduction

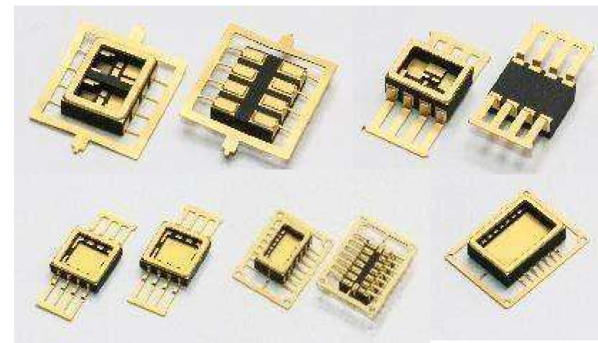
Integrated circuit Device package

CDIP



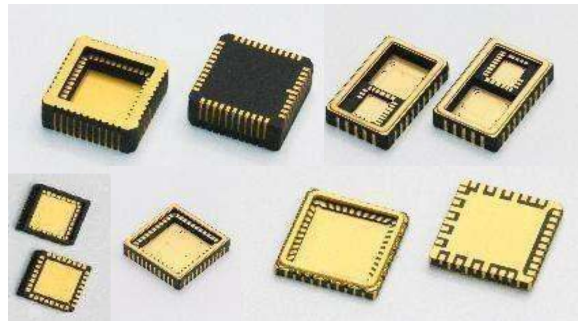
- Applied to Universal IC Package
  Solid state relay,Digital isolator, ect;
- Ceramic:Al2O3 90%(黑);
- Lead&Seal Ring：Kovar;
- Pitch: 2.54mm;
- Electrical properties：
- On-resistance：≤1.0 Ω；
- Insulation resistance：≥1x10^10^Ω,DC 500V;
- Sealing method ：parallel seam sealing/Brazing；

CSOP



- Applied to Universal IC Package
  Solid state relay，Ldo，DC-DC, ect;
- Ceramic:Al2O3 90%(黑)
- Lead&Seal Ring： Kovar
- Pitch: 2.54mm
- Electrical properties：
- On-resistance：≤1.0 Ω；
- Insulation resistance：≥1x10^10^Ω,DC 500V
- Sealing method ：parallel seam sealing/Brazing

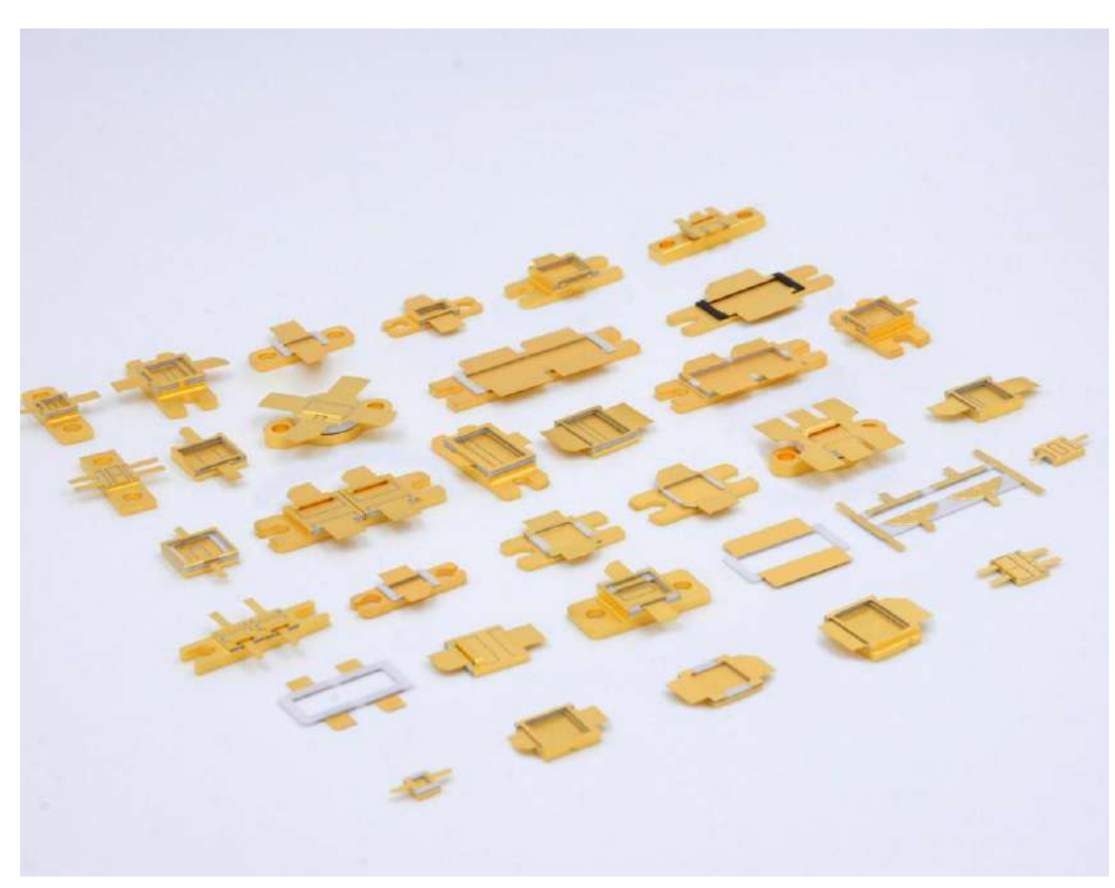
LCC

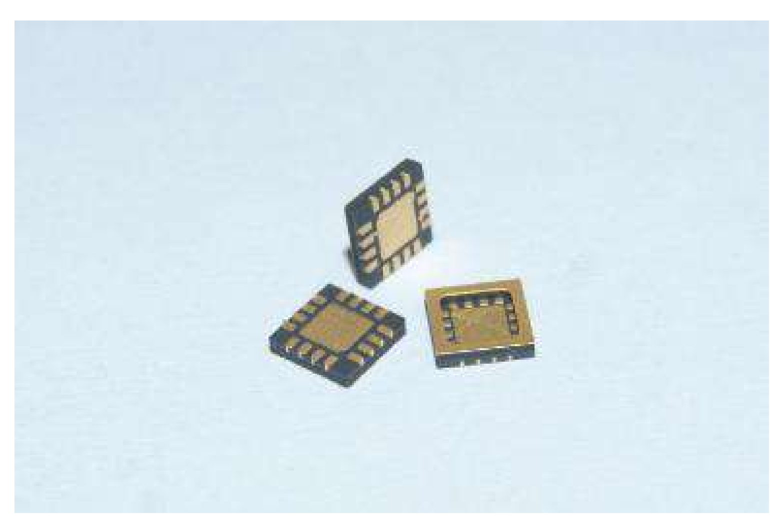


- Applied to Universal IC Package
- Ceramic:Al2O3 90%(黑)
- Seal Ring：Kovar
- Pitch: 1.27mm,0.80mm，0.65mm
- Electrical properties：
  On-resistance：≤0.5 Ω；
  Insulation resistance：≥1x10^10^Ω,DC 500V
- Sealing method:parallel seam sealing/Brazing

Main Products

Wireless Power Device Packages





Product introduction

Package for Microwave module

Package for MMIC

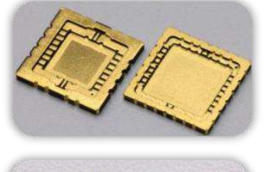
Ceramic feedthrough power package

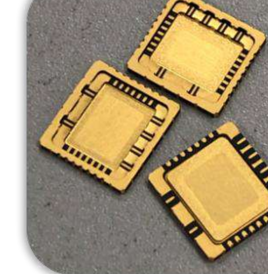
- 50 Ω port impedance
- Internal matching power device
- Frequency ：DC~18GHz
- Sealing method ：
- parallel seam sealing/Brazing /胶封gum
- Heat sink type ：Cu/WCu/MoCu/CPC/CMC

Ceramic wall power package

- Non-**50 Ω port impedance** （about 10Ω）
- External/Pre-Matched Power Devices
- Frequency ：DC~6GHz（依赖外匹配）
- Sealing method ： parallel seam sealing/
  Brazing / /胶封gum
- Heat sink type ： Cu/WCu/MoCu/CPC/CMC

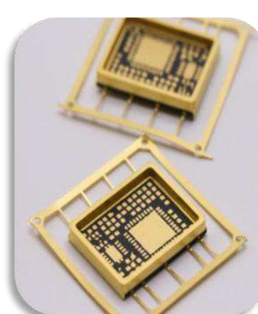
Ceramic Quad Flat No-lead Package





- 50 Ω port impedance
- For Power MMIC Package
- Frequency ：DC~60GHz
- Sealing method ：
  parallel seam sealing/Brazing /胶封gum
- Heat sink type ： Al2O3/Cu/WCu/MoCu/CPC/CMC

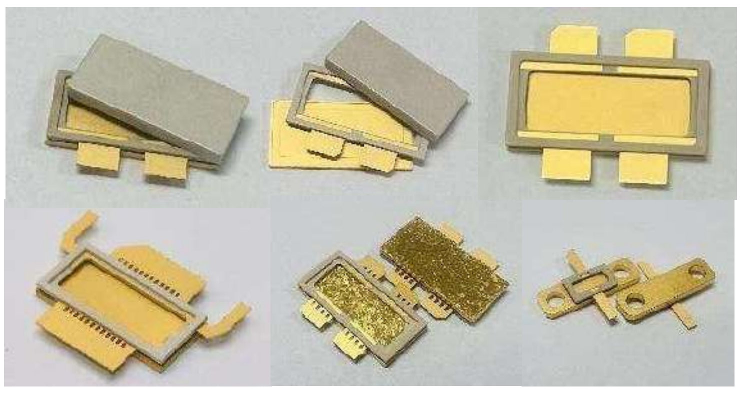
Metal wall type power package



- 50 Ω port impedance
- For MMIC or HIC Package
- Frequency ：DC~32.5GHz
- Sealing method ：
  parallel seam sealing/Brazing /胶封gum
- Heat sink type ：Al2O3/Kovar

Product introduction

Adhesive, Plastic package



Material：
Frame - LCP；
Heat sink -Cu、CPC ect;
Lead - Cu ect；
Glue -Epoxy glue，
Curing condition：180℃、one hour；
Airtightness：≤1×10-8Pa.m3/s；

Silicon Bipolar Transistor Package

Material：
Heat sink- BeO；
Base -WCu;
Lead - 4J34；
Frequency ：P、L、S，
Power：200Wmax
Airtightness：Air tight ≤1×10-9Pa.m3/s ，non air tight；

Product introduction

Consumer Electronics Ceramic Package and Substrate

Packages for Crystal and Oscilator

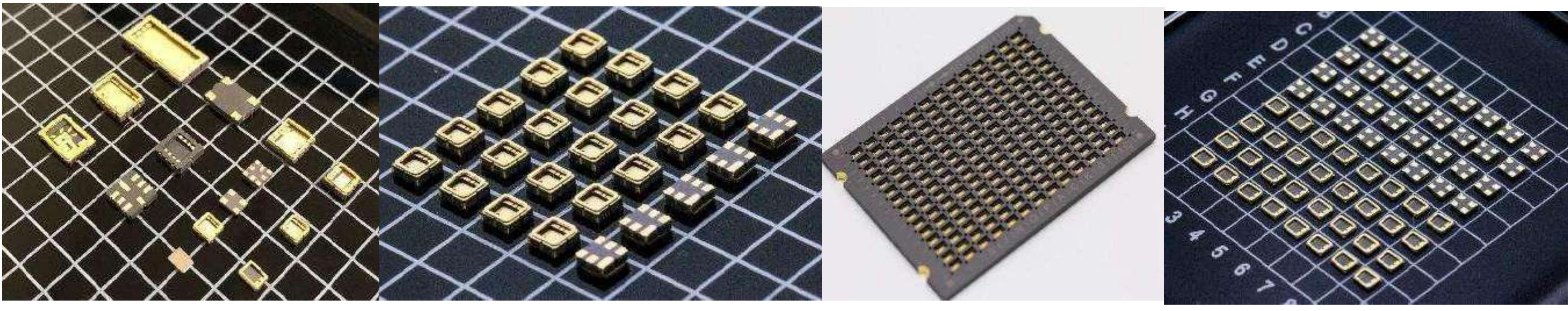
Crystal Units
Crystal Oscillators

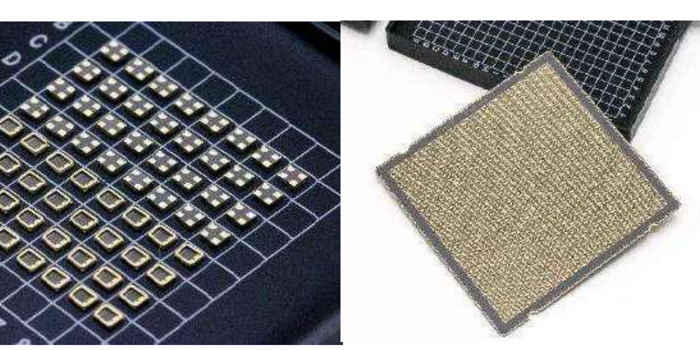
Packages and SUBSubstrates for SAW Filter

IFFilter/Resonator
RF Filter/Duplexers

3D Sensor&CMOS

Mobile camera module/
Smart City/Machine Vision/Security





Customized&Miniatu rization

1. 热敏晶体TSX
2. 温补振荡器TCXO
3. 音叉晶体TF

High Accuracy & Wide Temperature Range

Multi-layer Ceramic Structure
Temperature range(-40 to +125)

High strength

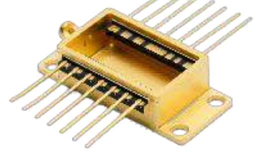
620MPa Ceramic
Bending Strength 650mpa

Product introduction

Optical Communication Devices Packages

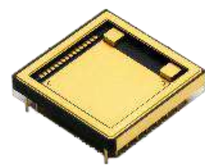
*TOSA/ROSA (2.5G/10G/4*25G/4*50G)*

Butterfly/mini pin/Glass Package



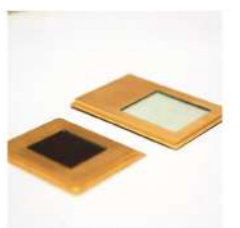
ICR-Intergrated coherent transceiver

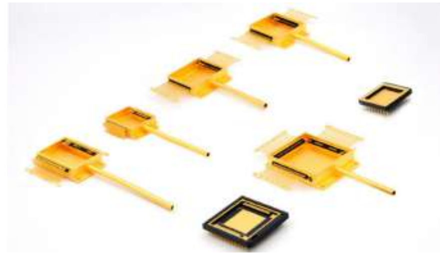
WSS-Wavelength selective switch



Product introduction

Infrared Detectors Package





Hermetic: ≤1*10-9Pa·m3/S;

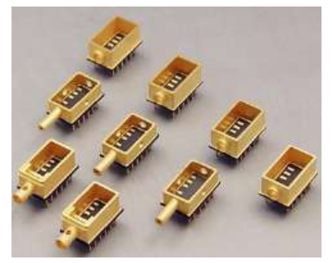
Lead Acount: 32, 36, 40, customized;

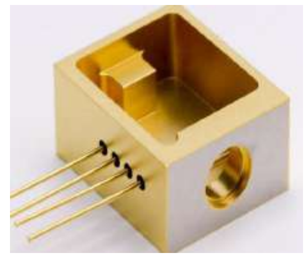
Base Material: WCu, Kovar, Al_2O_3 Ceramic;

Plating: Nickle plating, Gold plating;

Window: Sapphire, germanium, AR coating;

Butterfly and Glass Package





Hermetic: ≤1*10-9Pa·m3/S;

Lead Acount: 8，10，14， customized;

Base Material: WCu, Kovar, Al_2O_3 Ceramic，Glass;

Plating: Nickle plating, Gold plating;

Window: Sapphire,Glass;

Product introduction

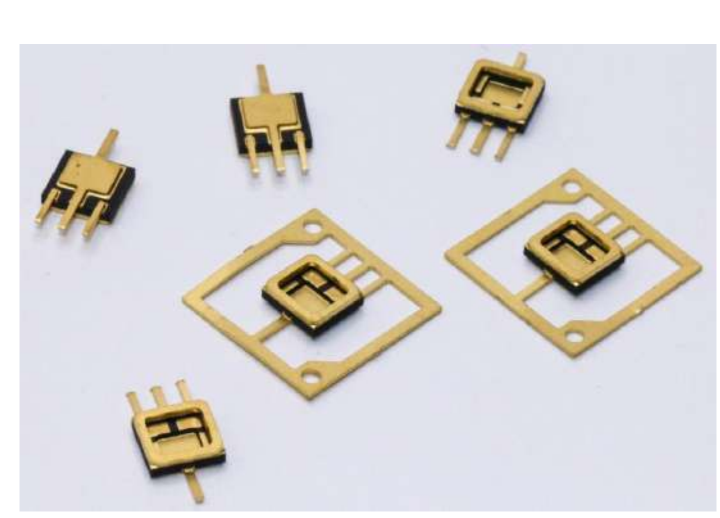
Other PKG -SMD and TO

Type: SMD-2，1, 0.5, 0.2, 0.1

Material: Electrode-TU1;

Heat sink: WCu, MoCu, CMC, CPCetc;

Ceramic: Al_2O_3 ;



Material:

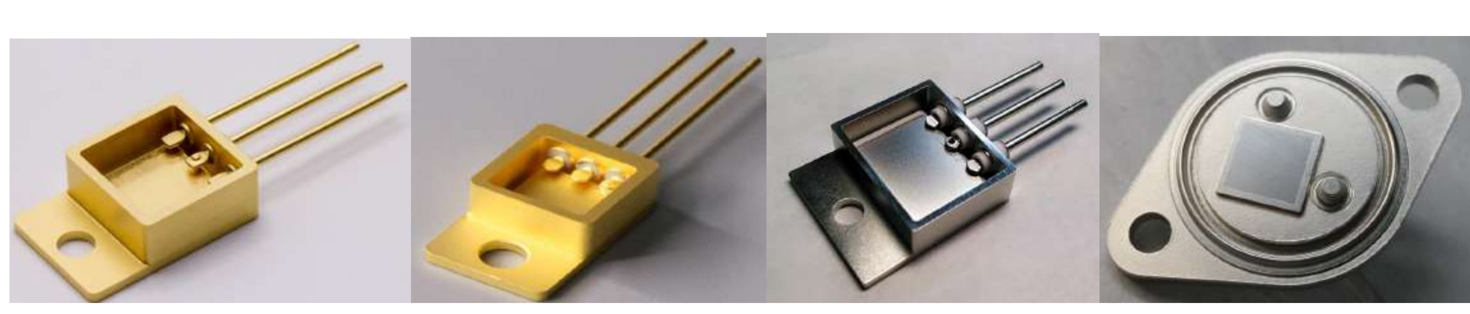
Frame-- 4J42、4J34;

Ceramic--Al_2O_3 ;

Lead: 4J34 ;

Product introduction

TO



Type: TO-3、TO254、TO257、

TO258 etc;

Material:

Base-:***WCu, MoCu,*** TU1;

Heat sink: BeO*;*

Ceramic:Al_2O_3 *;*

Lead: 4J34, Kovar/Cu/Kovar;

Process capacity

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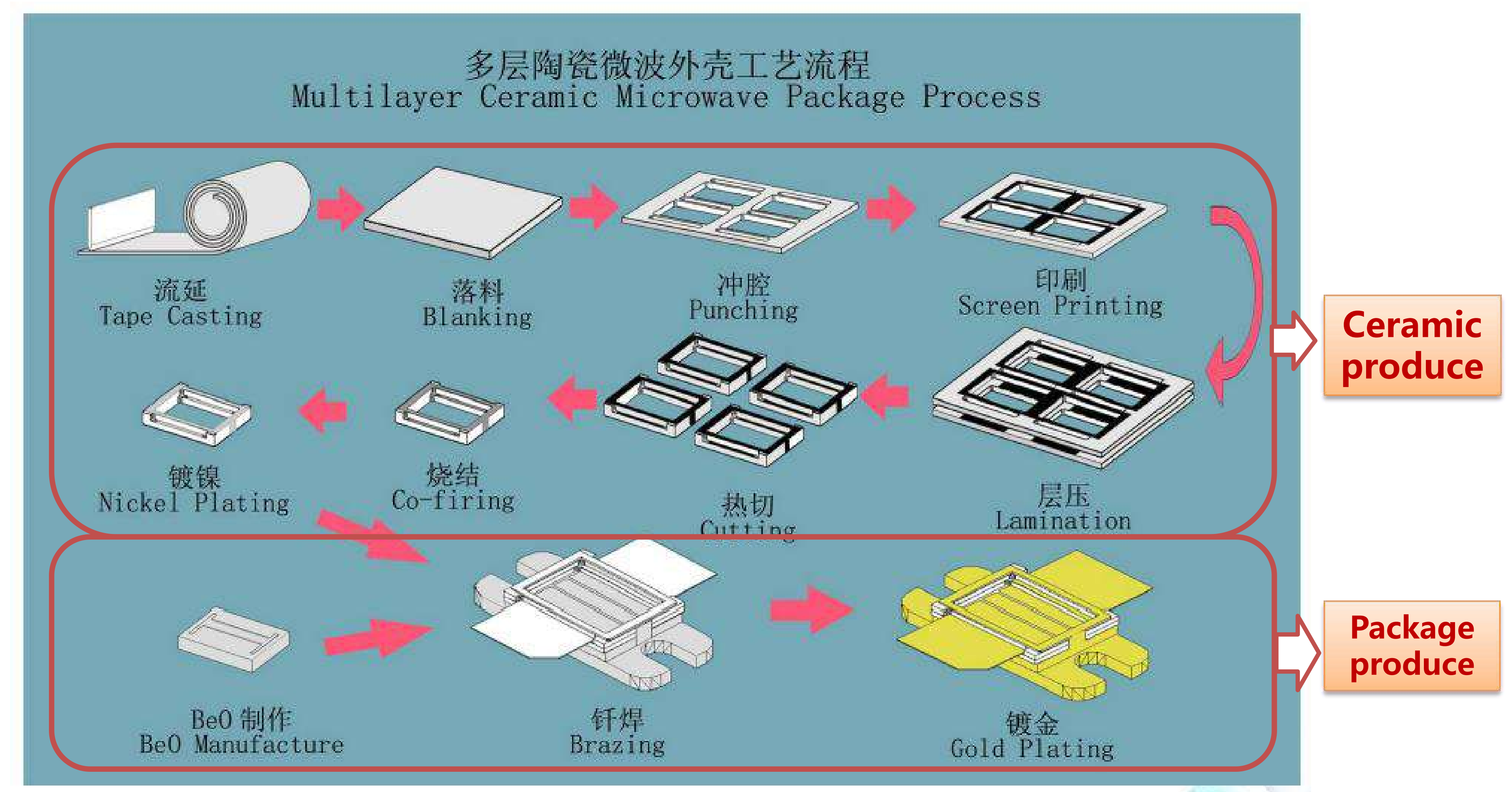
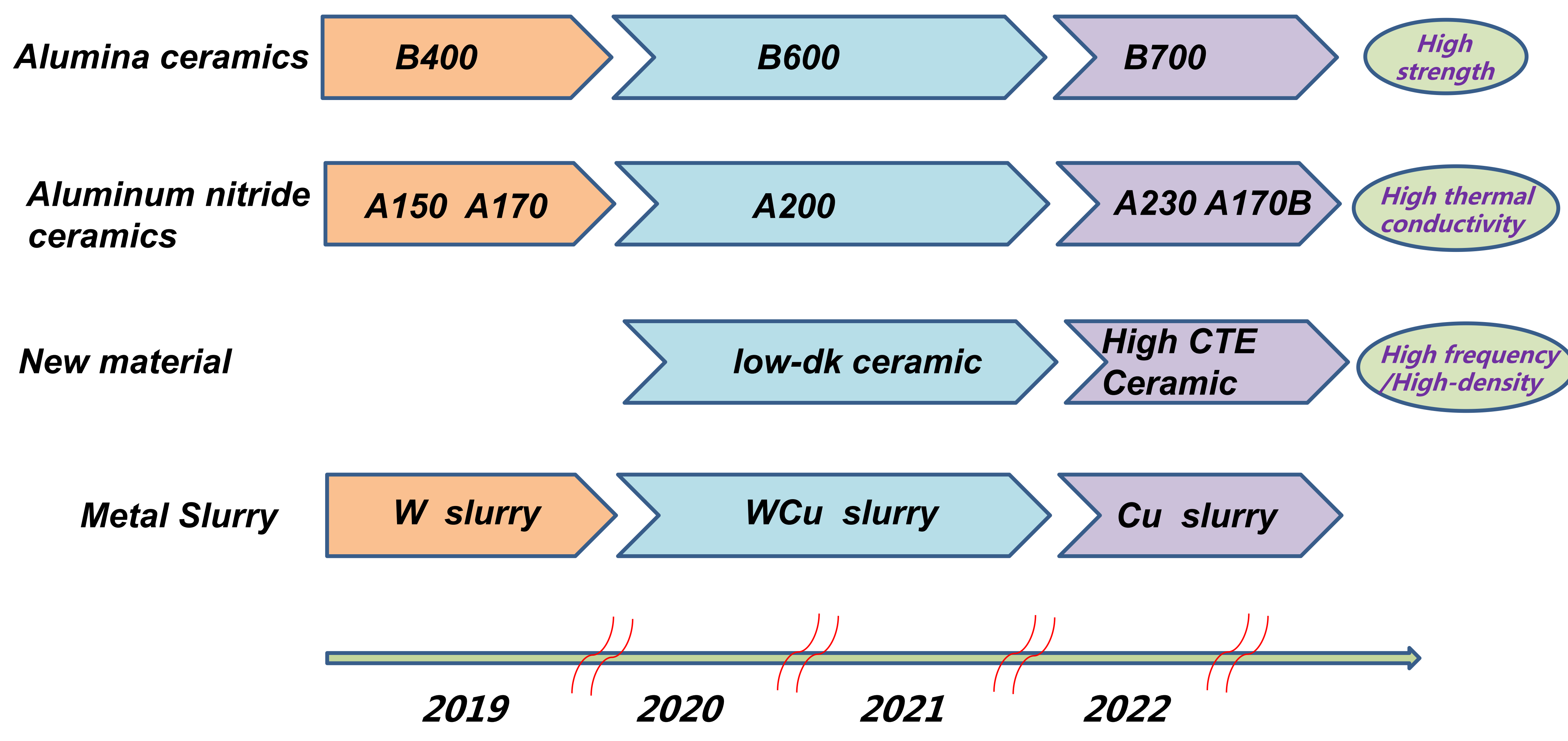
PROCESS	Process Flow Chart
Material characteristics	Ceramic Material Metal Material
DESIGN	Designing for Construction Reliability *Thermal simulation *Stress simulation Structure&wiring Design *Structure design *RF&DC design ☑ RF Simulation and measurement
Quality	System Test

Process capacity

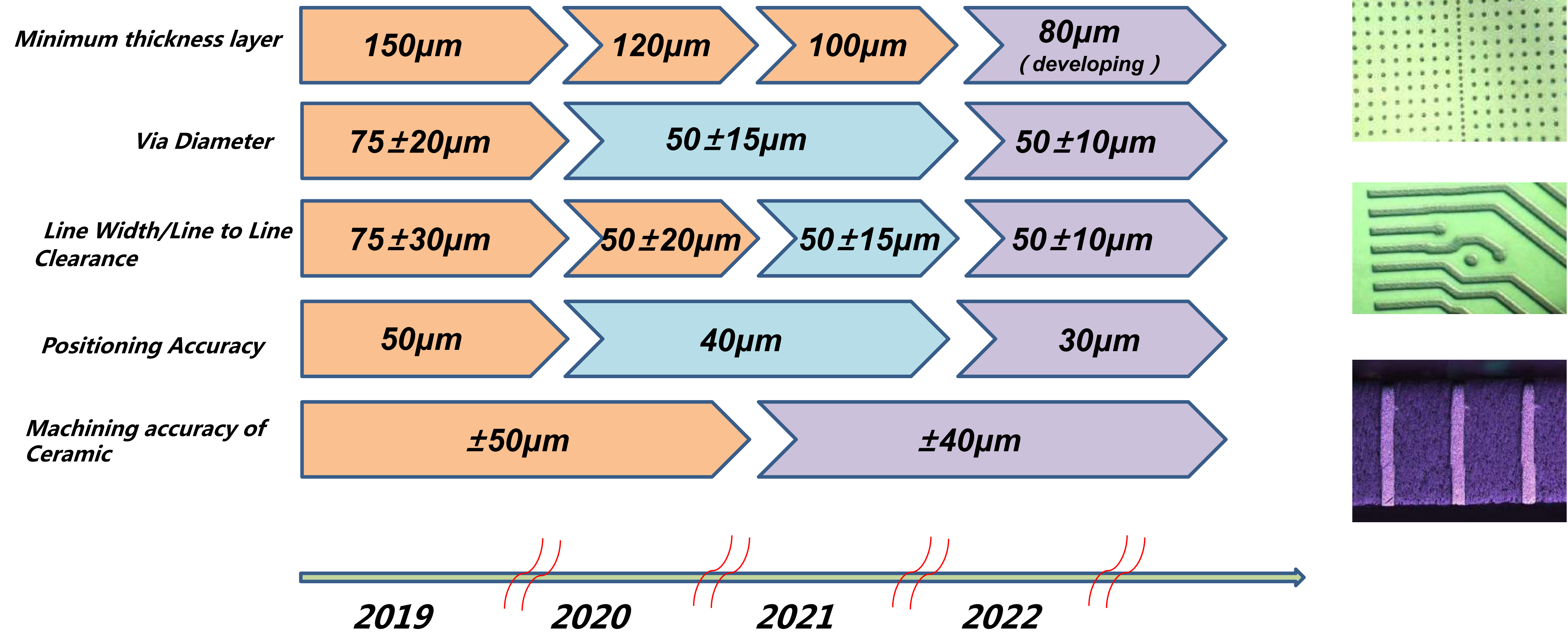
Process flow chart



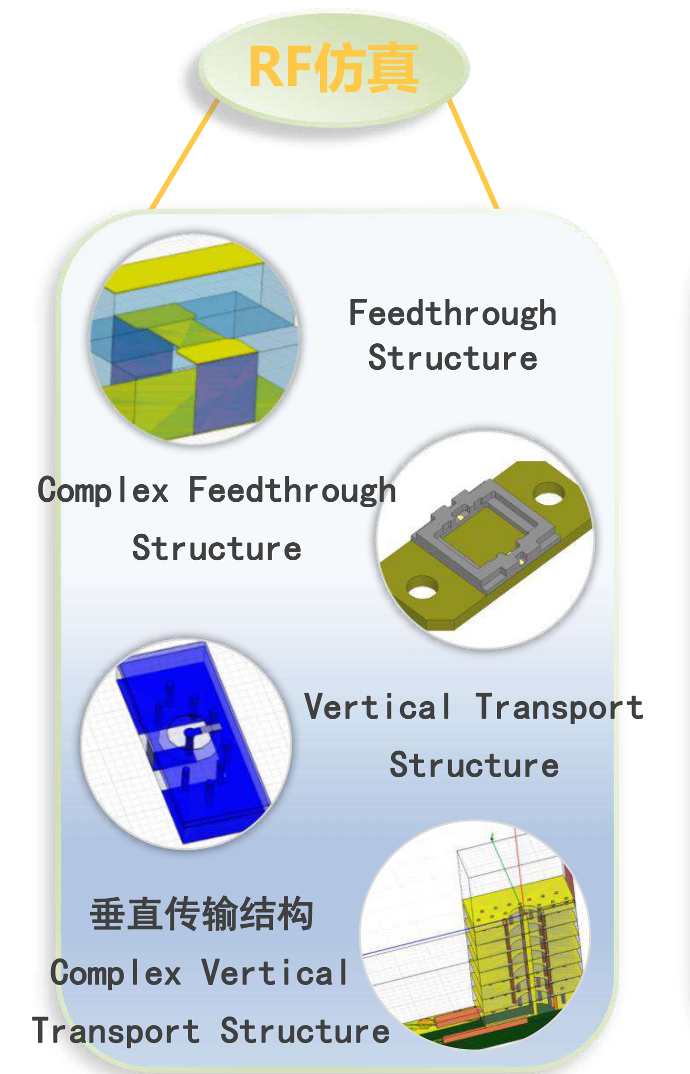
2 Material parameter -Self-developed ceramic material

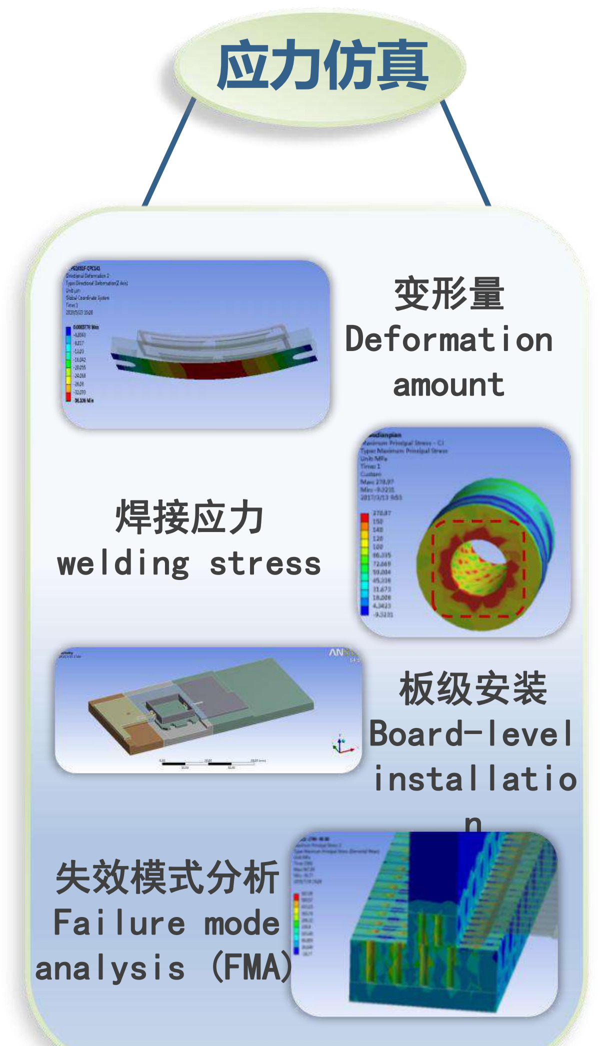


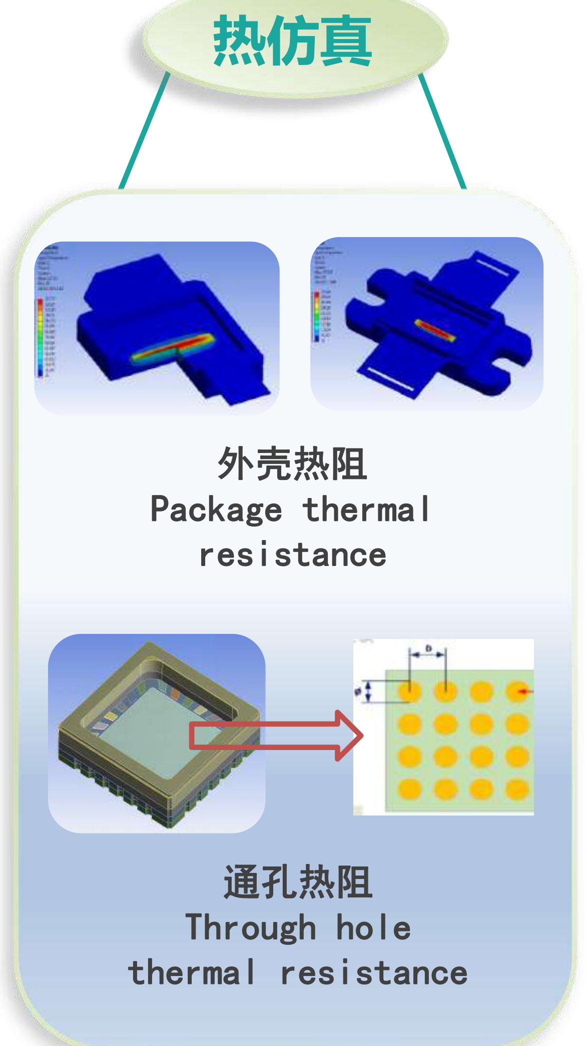
2 Process capacity -Manufacturing ability of ceramic



Simulation capability

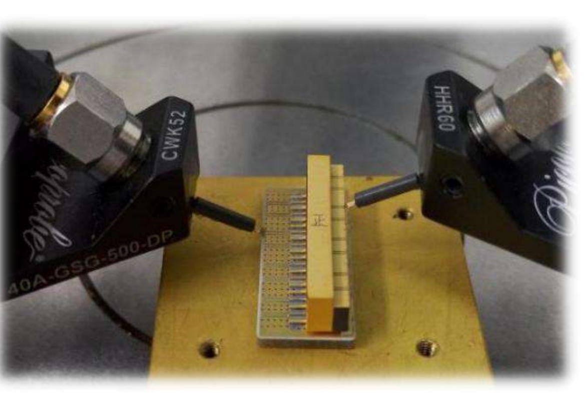


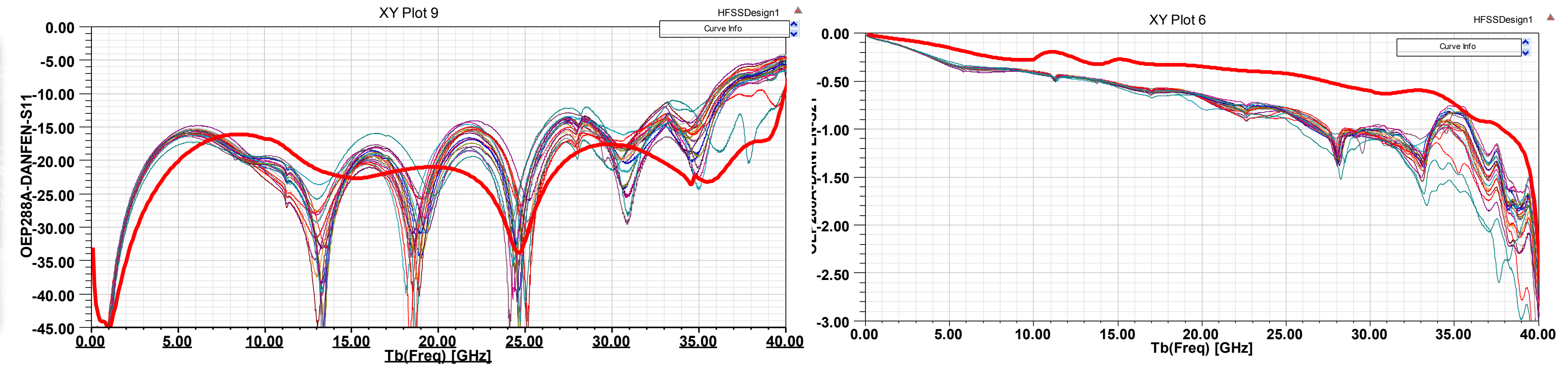




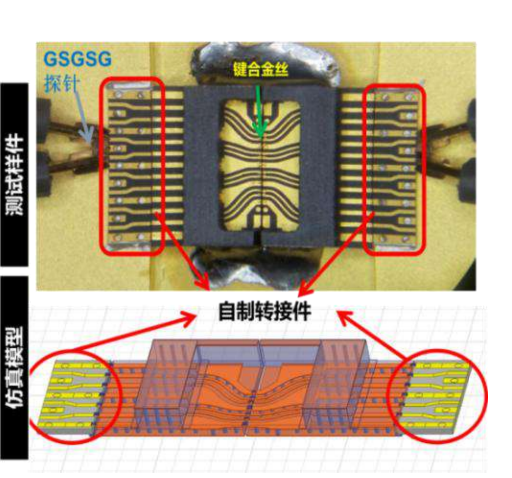
Simulation capability

sample 1

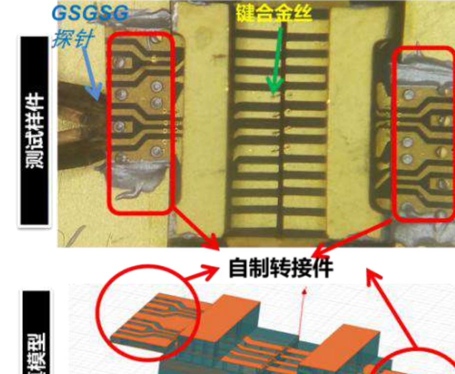




Sample 2

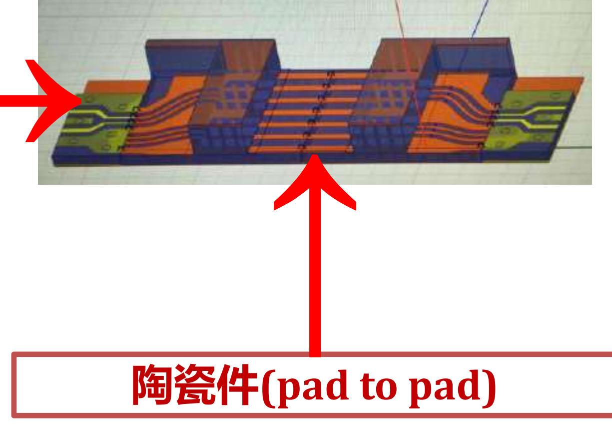


Sample 3



薄膜测试板替代PCB板

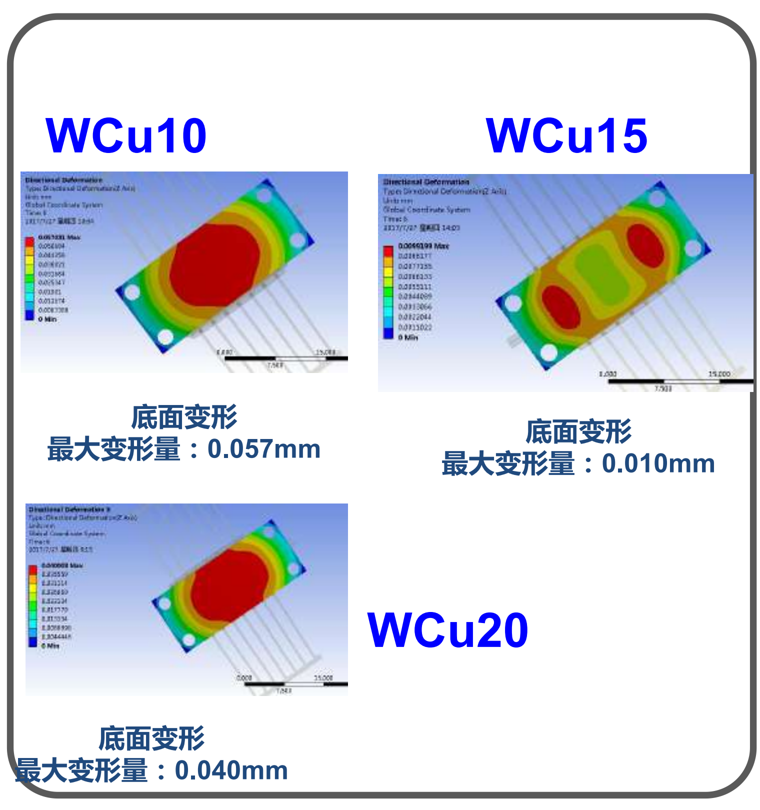
薄膜测试板

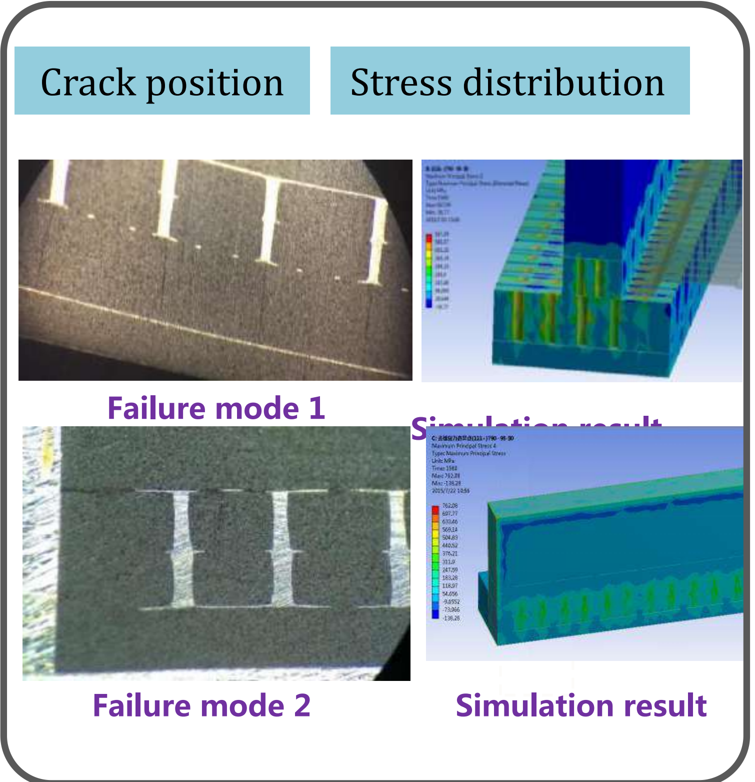


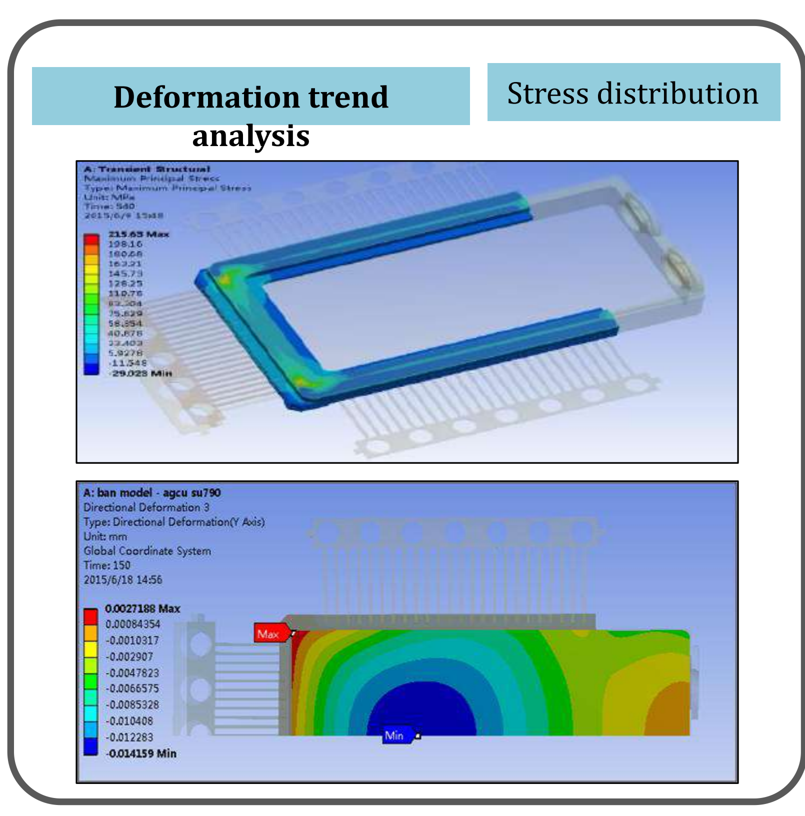
陶瓷件(pad to pad)

Simulation capability

FMEA(Failure Model Effectiveness Analysis)—瓷裂/变形





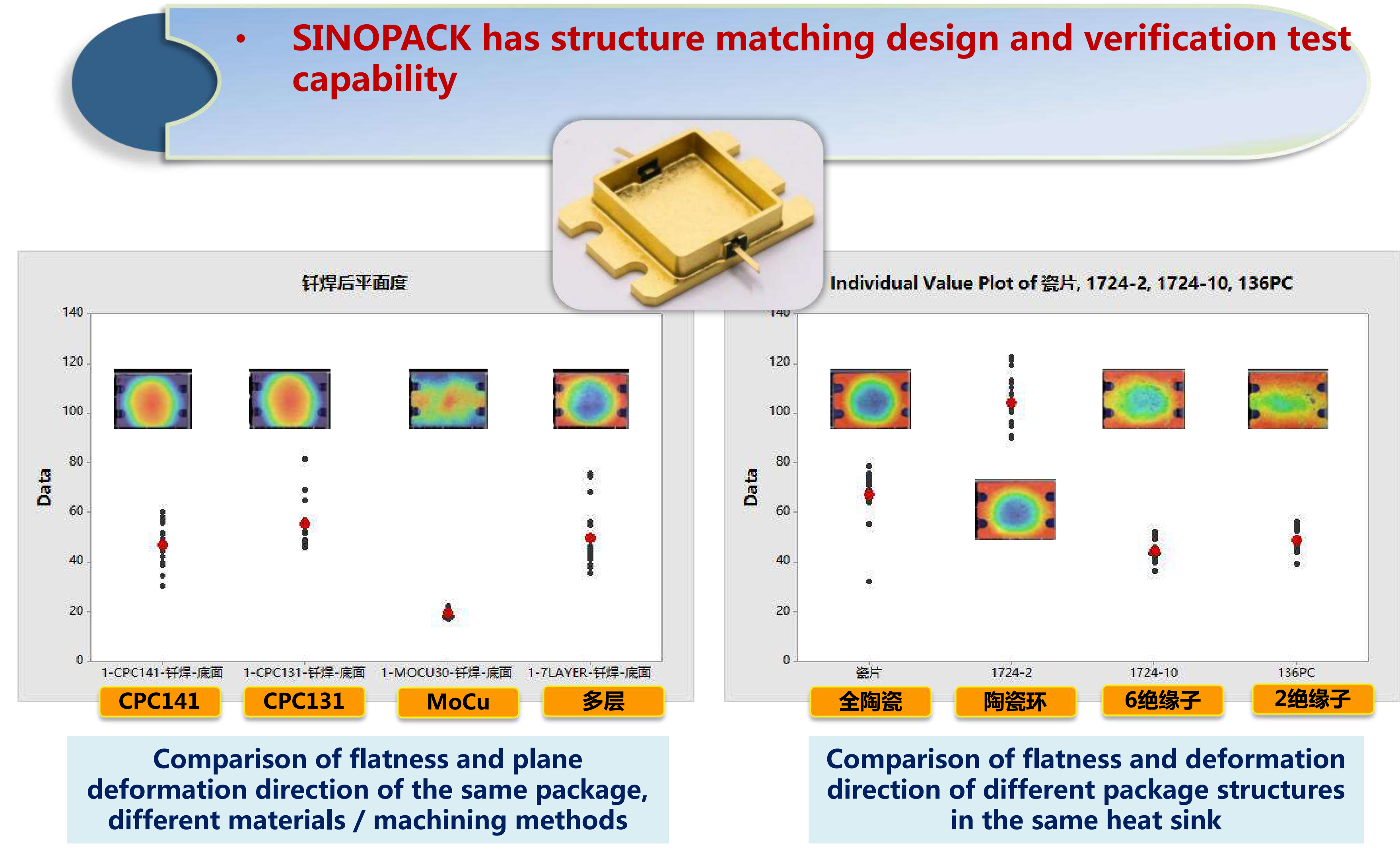


·weak position

Process capacity

Flatness control

- SINOPACK has structure matching design and verification test capability

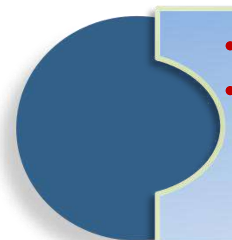


Comparison of flatness and plane deformation direction of the same package, different materials / machining methods

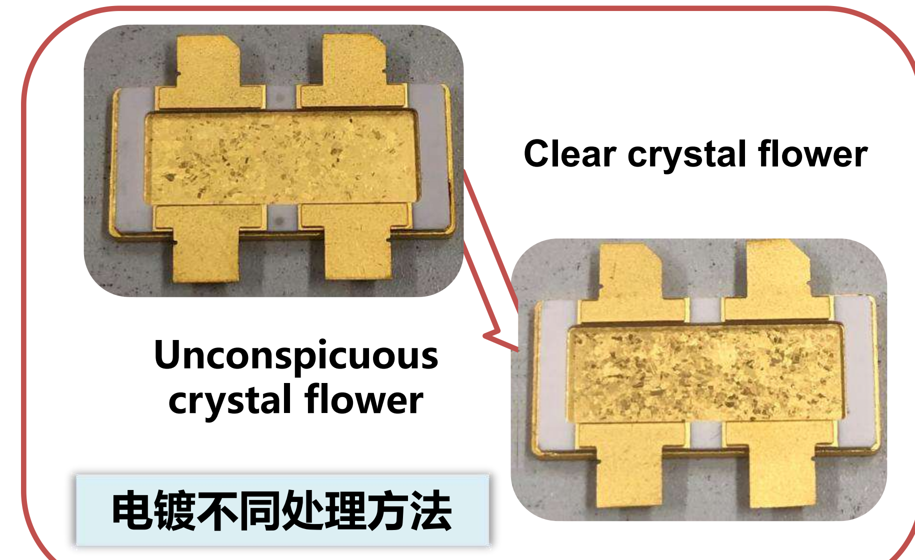
Comparison of flatness and deformation direction of different package structures in the same heat sink

Process capacity

Plating

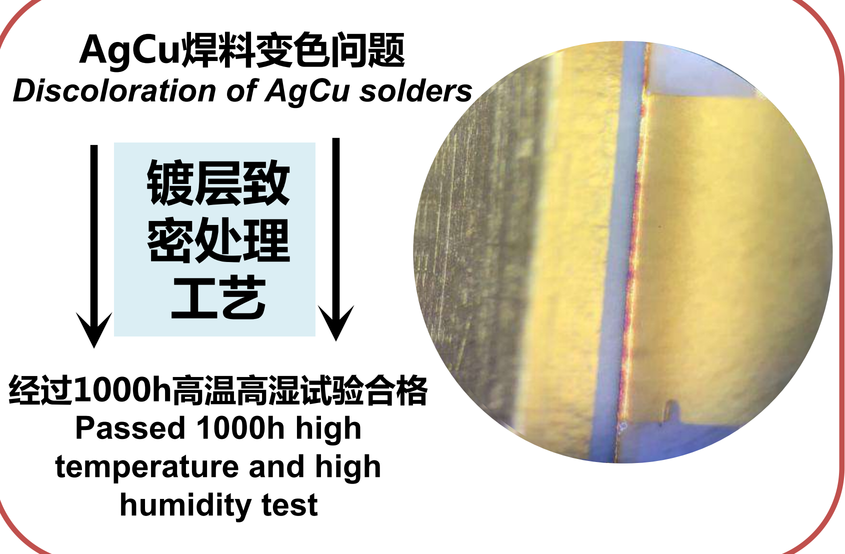


- Plating type ：Ni-Au、Ni-Co-Au、Ni-Pd-Au。
- The plating meets the protection of different environment, has the processing ability of crystal flower, and meets the requirement of solderability of different plating.



芯区粗糙度对比(μm)		1	2	3	4	5	Avg.
	晶花明显	0.47	0.48	0.52	0.42	0.51	0.48
	晶花不明显	0.50	0.51	0.53	0.50	0.48	0.50

Plating protection



质量-体系

Certificate of Registration

nqa

兹证明

河北中瓷电子科技股份有限公司

河北省石家庄市鹿泉区经济开发区昌盛大街 21 号 C2 厂房

的质量管理体系适用于

加热器、传感器、线束、电子封装外壳及基板的生产

已经 NQA 根据标准

IATF 16949 : 2016

（删减产品设计）

审核和注册

本注册要求组织必须按照上述标准保持其质量管理体系，并由 NQA 进行监督。

若有任何争议，以英文证书为准

Managing Director

NQA Certificate No: T81960
IATF Certificate No: 0344223
Date: 26 November 2018
Valid Until: 25 November 2021
Version: 2

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Revision Date: Feb 2017 Page 1 of 1 Issue 5

CEPREI

质量管理体系认证证书

（正本）

兹证明

河北中瓷电子科技有限公司

统一社会信用代码：91130185693456472R

注册地址：石家庄市鹿泉经济开发区昌盛大街 21 号

已按照

GB/T 19001-2016 idt ISO 9001:2015

标准要求建立并实施了质量管理体系。

该管理体系适用于

电子封装外壳及基板、陶瓷元件、车用加热器的研发、生产和服务

涉及的场所及相关活动：

场所地址	场所邮编	场所主要活动
河北省石家庄市鹿泉经济开发区昌盛大街 21 号 C2 厂房	050200	电子封装外壳及基板、陶瓷元件、车用加热器的研发、生产和服务

注 册 号：01216Q30824R2M

颁证日期：2016.11.04

有效期至：2019.10.15

换证日期：2018.09.21

总经理：

CEPREI

环境管理体系认证证书

（正本）

兹证明

河北中瓷电子科技有限公司

统一社会信用代码：91130185693456472R

注册地址：石家庄市鹿泉经济开发区昌盛大街 21 号

已按照

GB/T24001-2016 idt ISO 14001:2015

标准要求建立并实施了环境管理体系。

该管理体系适用于

电子封装外壳及基板、陶瓷元件、车用加热器的研发、生产和服务

涉及的场所及相关活动：

场所地址	场所邮编	场所主要活动
河北省石家庄市鹿泉经济开发区昌盛大街 21 号（总部）	050200	电子封装外壳及基板、陶瓷元件、车用加热器的研发、生产和服务
河北省石家庄市合作路 113 号	050051	电子封装外壳的生产和服务

注 册 号：01216E20741R2M

颁证日期：2016.10.13

有效期至：2019.10.12

换证日期：2017.09.19

总经理：

职业健康安全管理体系认证证书

（正本）

兹证明

河北中瓷电子科技有限公司

组织机构代码：69345647-2

注册地址：石家庄市鹿泉经济开发区昌盛大街 21 号

已按照

GB/T 28001-2011 (OHSAS 18001:2007, IDT)

标准要求建立并实施了职业健康安全管理体系。

该管理体系适用于

电子封装外壳及基板、陶瓷元件、车用加热器的研发、生产和服务

涉及的场所及相关活动：

场所地址	场所邮编	场所主要活动
河北省石家庄市鹿泉经济开发区昌盛大街 21 号（总部）	050200	电子封装外壳及基板、陶瓷元件、车用加热器的研发、生产和服务
河北省石家庄市合作路 113 号	050051	电子封装外壳的生产和服务

注 册 号：01216S20704R2M

颁证日期：2016.09.29

有效期至：2019.09.28

总经理：

IATF16949	ISO9001	ISO14001	OHSAS18001

Quality / Reliability Test Items

序号	可靠性测试项目
1	visual inspection 外观检验
2	Electrical property 电性能
3	Hermeticity 气密性
4	Dimension 尺寸
5	Plating thickness 镀层厚度
6	Quality of Gold Plating 镀层质量
7	Lead integrity 引线牢固性

序号	可靠性测试项目
8	Bond Strength 键合拉力
9	Die Shear Strength 芯片剪切力
10	Temperature cycling 温度循环
11	Thermal Shock 热冲击
12	Mechanical Shock 机械冲击
13	Vibration 扫频振动

** 1~7 is applicable to all products inspection*

** 1~13 is suitable for internal control inspection of newly developed products*

** 8~13 are periodic inspection of mass production, semi-annually*

All experimental methods were based on MIL883

Quality

温度循环

三维测量仪器

检漏

拉力测试

飞针试验台

X 射线透视

X 射线测厚仪

键合强度试验

T H A N K S