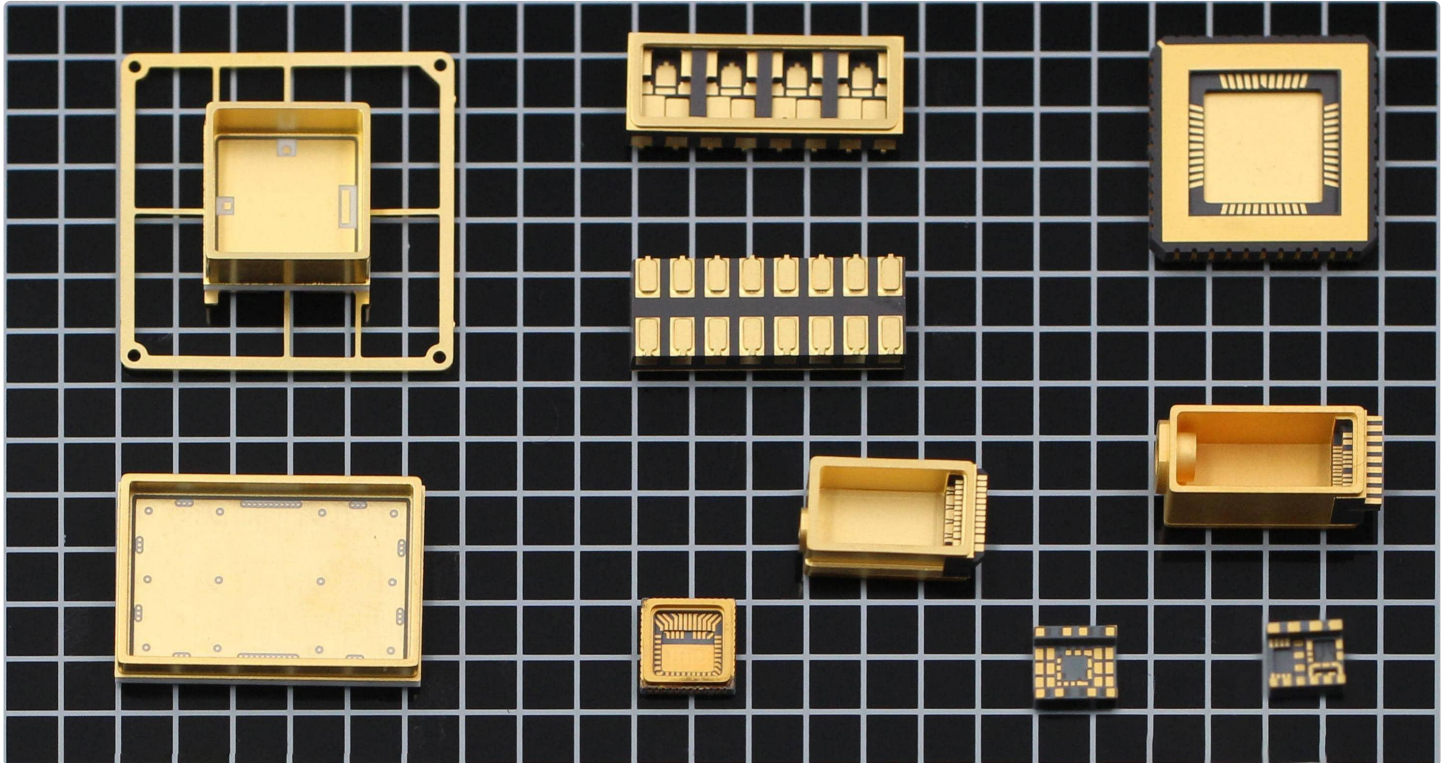


Ceramic Packages

■ Introduction

Ceramic packaging is the "case" that uses ceramic materials (like alumina, aluminum nitride, or beryllium oxide) as the housing or substrate for integrated circuits. It's a protective enclosure or base which prevents the semiconductor chip from environmental damage and provides electrical connections to the outside world.



■ Material Properties

Property		Value	92F	93D
Color	-	-	Black	White
Al ₂ O ₃ Content	-	%	92	93
Density	25°C	g/cm ³	3.7	3.65
Thermal Conductivity	25°C	W/(m·K)	20	18
Coefficient of Linear Thermal Expansion	40°C~400°C	x10 ⁻⁶ /°C	6.7	7
	40°C~800°C		6.9	7.2
Volume Resistance	20°C	Ω·cm	10 ¹⁴	10 ¹⁴
	300°C		10 ¹⁰	10 ¹⁰
	500°C		10 ⁸	10 ⁹
Dielectric Constant	1MHZ	-	10	9
Dielectric Loss	1MHZ	x10 ⁻⁴	4	4
Flexural Strength	0.5mm/min	MPa	400	400

Laser SMD Package

Features

1. High thermal conductivity, superior crystal protection
2. Stable performance and driving power
3. Compact surface-mount device 7mm combined with built-in safety
4. Enables ultra-long projection distances, narrow beam angles and compact optical sizes



Applications

- Portable Search and Rescue Lighting
- Automotive and Construction Lighting
- Outdoor and entertainment Lighting

ROSA/TOSA Package

Features

1. High airtightness and reliability
2. Meets speed requirements from 10 GHz to 400 GHz in various applications
3. Customizable development available



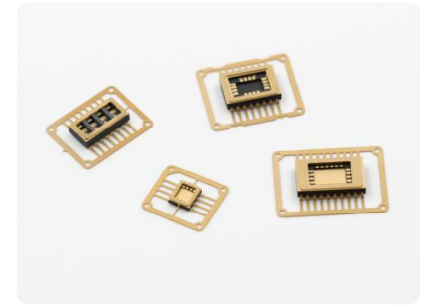
Applications

- Fiber optic communications
- Optoelectronic transmitters and receivers
- Optical switches and modules, High-power lasers

Ceramic Small Outline Package (CSOP)

Features

1. Compact size, wing-shaped leads, low stress
2. Excellent resistance to mechanical shock
3. Multiple lead pitches: 1.27mm, 1.00mm, 0.80mm, etc.



Applications

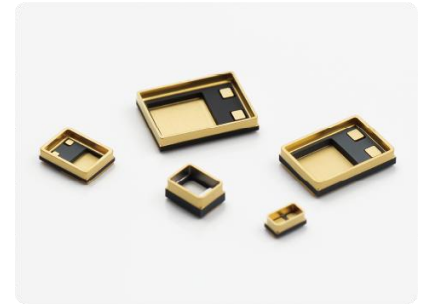
- IC packaging
- High-reliability component packaging for space, radiation or military/defense applications

Model	Terminal Count	Terminal Pitch (mm)	Cavity Size (mm)	Body Size (mm)	Seal Type
CSOP04-01	4	2.54	2.60*2.30	5.40*4.00	Seam Seal
CSOP08-02	8	1.27	2.74*3.00	5.00*4.40	
CSOP14-03	14	1.27	4.50*2.40	9.00*6.00	
CSOP16-02	16	1.27	1.60*2.20	10.50*5.40	
CSOP16D	16	1.27	5.00*3.00	10.50*7.50	
CSOP20-01	20	1.27	6.00*4.00	12.70*7.50	
CSOP20-02	20	0.65	2.80*2.80	6.60*5.50	
CSOP24-03H	24	0.65	4.60*2.00	8.60*6.30	
CSOP32-02	32	1.27	12.00*9.70	20.47*12.70	
CSOP56-01	56	0.8	10.80*10.30	27.30*13.30	

Surface-Mount Device Package (SMD)

Features

1. High electrical conductivity and current-carrying capacity
2. Large-area heat sink for the chip bonding zone
3. Reliable performance and excellent thermal dissipation



Applications

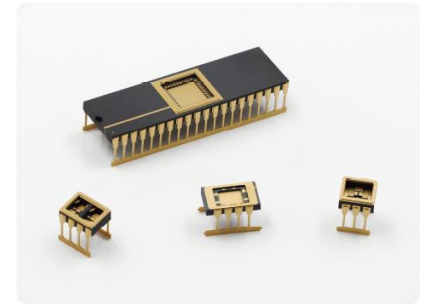
- Microwave device housing
- Crystal oscillator housing

Model	Terminal Count	Cavity Size (mm)	Body Size (mm)	Seal Type	Heat Sink
SMD-0.1	2	2.60x2.60	6.00x3.50	Seam Seal	YES
SMD-0.2	3	3.00x3.20	7.95x5.50		
SMD-0.3	2	4.50x4.50	8.00x6.00		
SMD-0.5	3	4.05x5.4	10.20x7.50		
SMD-1	3	8.60x8.60	15.90x11.38		
SMD-2	3	10.00x9.60	17.52x13.23		
SMD-2H	3	8.10x9.80	17.60x13.40		

Ceramic Dual in-line Package (CDIP)

Features

1. Dual in-line package
2. Wide range of pin counts
3. EMI/RFI Protection



Applications

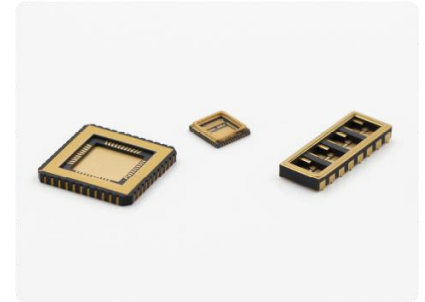
- Programmable Logic Device, LSI
- Optocouplers, MEMS devices, etc.

Model	Terminal Count	Terminal Pitch (mm)	Cavity Size (mm)	Body Size (mm)	Seal Type
DIP04D	4	2.54	5.40x3.20	7.40x5.20	Seam Seal
DIP06J	6	2.54	6.60x5.40	8.40x7.40	Seam Seal
DIP08	8	1.27	5.60x4.20	13.20x7.40	Seam Seal / Eutectic Seal (AuSn)
DIP08CA	8	2.54	7.70x5.40	9.70x7.70	Seam Seal
DIP08HA	8	2.54	3.35x5.40	9.70x7.70	Seam Seal
DIP16	16	2.54	5.60x4.32	20.33x7.37	Seam Seal
DIP20	20	2.54	5.60x3.80	25.14x7.34	Seam Seal
DIP32	32	2.54	10.00x6.20	40.64x9.91	Eutectic Seal (AuSn)
DIP40	40	0.8	10.20x10.20	50.80x15.00	Seam Seal / Eutectic Seal (AuSn)

Ceramic Leadless Chip Carrier/Ceramic Quad Flat Non-leaded Package (CLCC/CQFN)

Features

1. Low parasitic parameters and compact size
2. Excellent heat dissipation and high reliability
3. Available in dual-sided and quad-sided lead configurations
4. Multiple lead pitches: 1.27mm, 1.00mm, 0.50mm, etc.



Applications

- Suitable for high-density surface mounting
- VLSI, ASIC and ECL circuits

Model	Terminal Count	Terminal Pitch (mm)	Cavity Size (mm)	Body Size (mm)	Seal Type
CLCC04E	4	1	2.80x1.60	4.00x3.00	Seam Seal
CLCC04J	4	-	8.25x7.90	20.00x10.26	Seam Seal
CLCC08F	8	2.54	7.70x5.40	9.70x7.40	Seam Seal
CLCC16B	16	2.54	3.60x5.40	20.00x7.74	Seam Seal
CLCC16BC	16	2.54	3.60x5.40	20.00x7.74	Seam Seal
CLCC20	20	1.27	4.60x4.60	9.00x9.00	Seam Seal
CLCC24	24	1.27	4.70x4.70	8.54x8.54	Seam Seal
CQFN48B	48	0.5	4.88x4.88	7.00x7.00	Eutectic Seal (AuSn)
CQFN48C	48	0.5	4.88x4.88	7.00x7.00	Eutectic Seal (AuSn)



0086 592 558 9730



sales@innovacera.com



www.innovacera.com

XIAMEN INNOVACERA ADVANCED MATERIALS CO.,LTD

Block A, 6/F, No.588 Jiahe Road, Torch High-tech Industrial District,
Xiamen, China



View Catalogue



Shop Now