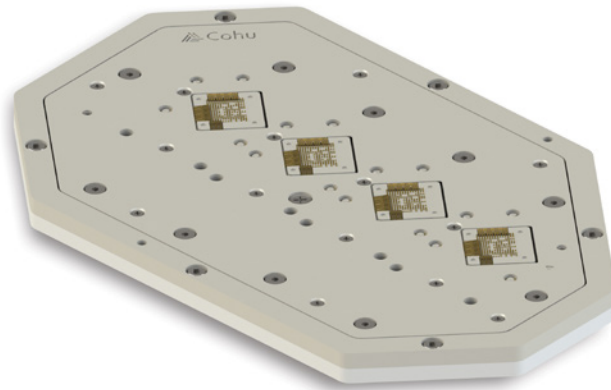


# cBoa Contactor/Probe Head

For RF and High-Speed Digital High-Volume Production Test



Automotive / Power



Mobility



Precision Analog / Sensors



High End Digital



RF

## Benefits

- Excellent resistance stability and prolonged usable life
- Optimal contact for all package types
- High signal integrity and power delivery for RF devices
- Suitable for singulated packages, strip or wafer-level test
- Optimal DUT alignment
- Accommodating package planarity tolerances
- Excellent contact choice for all device types

## Key Features

- Variety of contact materials available to optimize performance
- WLCSP, BGA, LGA, QFN, QFP
- Low loop inductance and high bandwidth
- Pitches down to 300  $\mu\text{m}$
- Optional floating alignment plate
- Large compliance window to accommodate stack height tolerances for improved yields
- Excellent current carrying capacity

- Temperature range  $-55^{\circ}\text{C}$  to  $+155^{\circ}\text{C}$
- Bandwidth up to 35 GHz @ -1dB

- Current carrying capacity up to 3.1 A continuous
- 1M cycles for WLCSP Test

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For RF and High-Speed Digital High-Volume Production Test

## Specifications

### Packages and Applications

- Grid Array packages: BGA, LGA, WLCSP, others – 300  $\mu\text{m}$  pitch and up
- Leaded packages: QFP, SO, others – 300  $\mu\text{m}$  pitch and up
- Leadless packages: QFN, others – 300  $\mu\text{m}$  pitch and up
- Singulated packages, strip test and wafer-level test

### Environmental

- Temperature Range:  $-55^{\circ}\text{C}$  to  $+155^{\circ}\text{C}$

### Reliability\*

- 500k cycles for packaged device
- 1M cycles for WLCSP Test
- Probe cleaning 50k to 100k

### Electrical

- Bandwidth @ -1 dB
  - BOA030: 7.56 – 30 GHz
  - BOA040: 24 GHz
  - BOA050: 12 GHz
  - BOA080: 18 GHz
- Loop Inductance
  - BOA030: 1.07 – 1.65 nH
  - BOA040: 0.63 nH
  - BOA050: 1.94 nH
  - BOA080: 0.92 – 1.2 nH
- Contact Resistance
  - BOA030: 100 – 140 m $\Omega$
  - BOA040: 65 m $\Omega$
  - BOA050: 75 m $\Omega$
  - BOA080: 30 m $\Omega$
- Current Carrying Capacity\*\*  
20 $^{\circ}\text{C}$  Temperature Rise
  - BOA030: 1.2 – 1.3 A
  - BOA040: 1.6 A
  - BOA050: 1.8 – 3.1 A
  - BOA080: 2.0 A
- Maximum @ 1% Duty Cycle
  - BOA030: > 5.6 – 10 A
  - BOA040: > 11 A
  - BOA050: > 13 – 27 A
  - BOA080: > 34 A

### Mechanical

Contact Pitches Supported: 0.3  $\mu\text{m}$  and up

- Contact Force at Test Height
  - BOA030: 0.1 – 0.19 N (9.8 – 19 gf)
  - BOA040: 0.18 N (18 gf)
  - BOA050: 0.34 N (35 gf)
  - BOA080: 0.32 N (33 gf)
- Test Height
  - BOA030: 330 – 450  $\mu\text{m}$
  - BOA040: 275 – 647  $\mu\text{m}$
  - BOA050: 280 – 696  $\mu\text{m}$
  - BOA080: 384 – 792  $\mu\text{m}$
- DUT Side Compliance
  - BOA030: 150 – 300  $\mu\text{m}$
  - BOA040: 270 – 500  $\mu\text{m}$
  - BOA050: 250 – 450  $\mu\text{m}$
  - BOA080: 390 – 550  $\mu\text{m}$
- DUT Tip Style
  - BOA030: B (single point), L (four-point crown)
  - BOA040: B, L, U (reduced three-point crown)
  - BOA050: B, L, U
  - BOA080: B, L, U
- PCB Tip Style: J (radius)

### Materials

Housing Material

- Vespel SP-1, Plavis – N, MDS-100, and ceramic
- Other materials available upon request
- Spring Probe DUT Tip Plating
  - Homogenous alloy
  - N01
  - Gold
- Spring Material
  - Stainless steel

### Configurations / Interface Options

- Automated Test Handler specific design / configuration
- Optional manual actuator
- E-beam probe support
- Custom configurations

\* Actual values are dependent on the application (DUT materials, handler kit, maintenance, etc.)

\*\* Typical resistance is measured between Au plated sheets

All specifications are subject to change without notification and are for reference only. Use contactor drawing to design interface hardware. For detailed performance specifications, please contact Cohu.