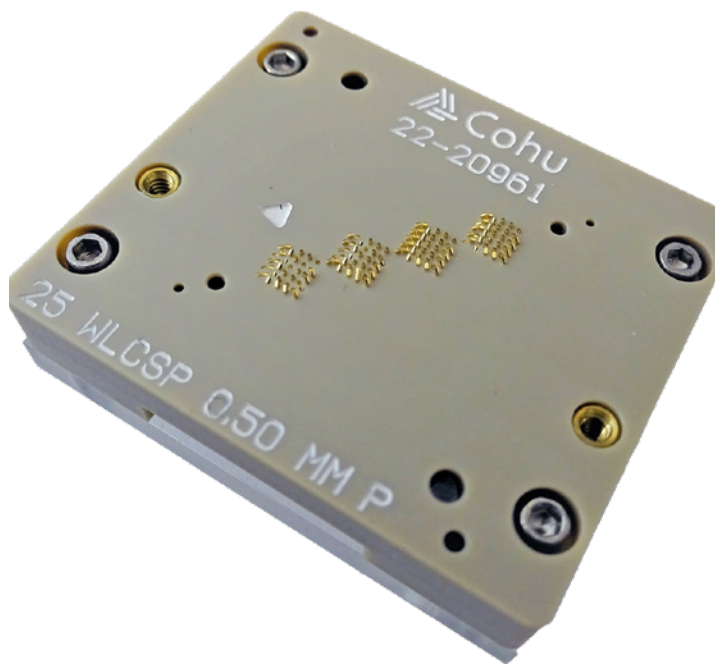# cPython Contactor/Probe Head

High Performance Kelvin Contact for High Volume Production Test

Automotive / Power

Mobility

Precision Analog / Sensors

High End Digital

RF

Benefits

- Excellent power delivery and signal integrity on Kelvin contacts

- Kelvin measurements at wafer-level test

- Kelvin contact on small targets

- Excellent resistance stability and prolonged usable life

- True Kelvin contact at fine pitches, both in-line and in arrays

Key Features

- Low loop inductance and high bandwidth

- Device pitch down to 0.2 mm in-line, 0.3 mm in arrays

- Tip to tip spacing as low as 70 µm

- Variety of contact materials to optimize performance

- Electrically isolated, mechanically independent force and sense paths

- **True Kelvin to eliminate contact resistance**

- **26 GHz for high speed high resolution converters and low voltage amplifiers**

- **High temperature performance -55˚C to 200˚C**

- **Available with homogeneous tips to optimize performance**

cPython Contactor/Probe Head

High Performance Kelvin Contact for High Volume Production Test

Specifications

Packages and Applications
- Grid array packages: BGA, LGA, WLCSP, others – 0.3 mm pitch and up
- Leaded packages: QFP, SO, others – 0.2 mm pitch and up
- Leadless packages: QFN, others – 0.2 mm pitch and up
- Singulated packages, strip test, wafer probe and wafer-level test

Environmental
- Temperature range: -55˚C to 200˚C

Reliability*
- 500,000 cycles for packaged device
- 1M cycles for WLCSP Test
- Probe cleaning 20,000 to 50,000

Electrical
- Bandwidth @ -1 dB**
  - PYT020: TBD***
  - PYT030: TBD***
  - PYT040: 19 - 33 GHz
  - PYT050: 16 GHz
- Loop Inductance
  - PYT020: TBD***
  - PYT030: TBD***
  - PYT040: 0.7 - 1.2 nH
  - PYT050: 1.48 nH
- Contact Resistance ****
  - PYT020: 90 mΩ
  - PYT030: TBD***
  - PYT040: 40 - 65 mΩ
  - PYT050: 30 mΩ
- Current Carrying Capacity 20º Celsius Temperature Rise
  - PYT020: 0.9 A
  - PYT030: TBD***
  - PYT040: 2.1 - 2.4 A
  - PYT050: 2.8 A
- Maximum @ 1% Duty Cycle
  - PYT020: > 4 A
  - PYT030: TBD***
  - PYT040: > 19 - > 22 A
  - PYT050: > 24 A

* Cleaning frequency and life specifications are estimates based on customer feedback. Actual values are dependent on the application (DUT materials, handler kit, maintenance, etc.).
** Bandwidth and inductance shown are for a single probe at minimum pitch, GSG configuration in Vespel SP-1.
*** Data will be released at a later date.
**** Typical resistance is measured between Au plated sheets

Mechanical
Contact Pitches Supported
  - 0.2 mm and up (in-line)
  - 0.3 mm and up (full array)
- Contact Force at Test Height
  - PYT020: 0.06 N (6gf)
  - PYT030: TBD***
  - PYT040: 0.19 - 0.3 N (19 - 31 gf)
  - PYT050: 0.26 N (26 gf)
- Test Height
  - PYT020: 3.9 mm
  - PYT030: TBD***
  - PYT040: 3.22 - 5.56 mm
  - PYT050: 5.05 mm
- DUT Side Compliance
  - PYT020: 200 µm
  - PYT030: TBD***
  - PYT040: 150 - 300 µm
  - PYT050: 308 µm
- DUT Tip Style
  - Single offset point for flat pads or leads
- DUT Tip Spacing (at Nominal Probe Spacing)
  - PYT020: 50 µm
  - PYT030: TBD***
  - PYT040: 60 - 90 µm
  - PYT050: 120 µm
- PCB Tip Style: Radius
- Board Side Tip Spacing (Nominal)
  - PYT020: 0.2 mm
  - PYT030: 0.3 mm
  - PYT040: 0.4 mm
  - PYT050: 0.5 mm

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

Configurations / Interface Options
- Automated test
  Handler specific design / configuration
- Optional manual actuator

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.