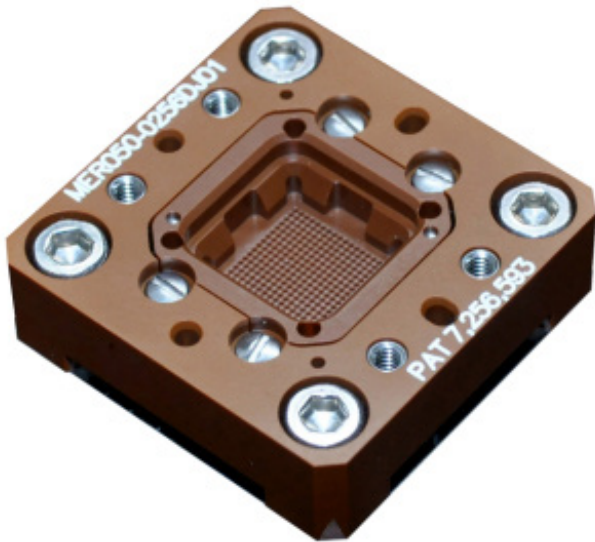


Mercury Contactor/Probe Head

For Cost-Efficient and High Performance Test



Automotive / Power



Mobility



Precision Analog / Sensors



High End Digital



RF

Benefits

- Excellent resistance stability and longer usable life
- Superior reliability based on materials and design
- Suitable for WLCSP, BGA, LGA, QFN, Matrix
- Suitable for high-frequency requirements
- Suitable for Pb-free applications

Key Features

- Revolutionary architecture features barrel less probe design with dual-fork redundant bias
- Low loop inductance and high bandwidth
- Pitches down to 0.3 mm
- Large compliance window to accommodate stack height tolerances for improved yields

- Temperature range -55°C to $+155^{\circ}\text{C}$
- Revolutionary architecture

- Singulated, strip or wafer level test
- Engineering evaluation and high-volume production test

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Specifications

Packages and Applications

- Grid array packages: BGA, LGA, WLP and others – 0.3 mm pitch and up
- Allows use of floating alignment plate (FAP)
- Leaded packages: QFP, TSOP, others – 0.5 mm pitch and up
- Leadless packages: QFN, MLF, others – 0.3 mm pitch and up
- Singulated packages, strip test, in-carrier and wafer-level test

Environmental

- Temperature range: -55°C to +155°C

Reliability*

- Typical probe life: 500,000 cycles

• Electrical

- Bandwidth @ -1dB Insertion Loss
 - MER030 @ 0.3 mm pitch: 25 GHz
 - MER040 @ 0.4 mm pitch: 18 GHz
 - MER050 @ 0.5 mm pitch: 20 GHz
 - MER080 @ 0.8 mm pitch: 18 GHz
 - MER080 @ 1.0 mm pitch: 18 GHz
- Loop Inductance
 - MER030 @ 0.3 mm pitch: 1.40 nH
 - MER040 @ 0.4 mm pitch: 1.13 nH
 - MER050 @ 0.5 mm pitch: 1.16 nH
 - MER080 @ 0.8 mm pitch: 1.43 nH
 - MER080 @ 1.0 mm pitch: 1.69 nH
- Contact Resistance**
 - MER030: 160 mΩ
 - MER040: 70 mΩ
 - MER050: 40 mΩ
 - MER080: 40 mΩ
- Current Carrying Capacity
20° Celsius Temperature Rise
 - MER030: 1 A continuous
 - MER040: 1.8 A continuous
 - MER050: 2.5 A continuous
 - MER080: 3.1 A continuous
- Maximum Current @ 1% Duty Cycle
 - MER030: > 3.5 A
 - MER040: > 9 A
 - MER050: > 16 A
 - MER080: > 20 A

Mechanical

- Contact Pitches Supported
 - 0.3 mm and up
- Contact Force at Test Height
 - MER030: 0.14 N (14 gf)
 - MER040: 0.25 N (25 gf)
 - MER050: 0.32 N (32 gf)
 - MER080: 0.33 N (33 gf)
- Test Height
 - MER030: 3.46 mm
 - MER040: 3.33 mm
 - MER050: 3.29 mm
 - MER080: 3.84 mm
- DUT Side Travel
 - MER030: 170 μm
 - MER040: 257 μm
 - MER050: 309 μm
 - MER080: 393 μm
- DUT Tip Style
 - MER030: dual edge, 44 μm apart
 - MER040: single edge; dual edge, 80 μm apart; triple edge
 - MER050: single edge; dual edge, 130 μm apart; triple edge
 - MER080: single edge; dual edge, 130 μm apart
- PCB Tip Style
 - Radius

Materials

- Housing Material
 - Vespel® SP-1
 - MDS 100
 - Photoveel ceramic
 - Other materials available
- Spring Probe Material
 - Hard, proprietary alloy
- Spring Material
 - Stainless steel
- Plating Material
 - Hard gold

Configurations / Interface Options

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

* Cleaning frequency and life specifications are estimates based on customer feedback. Actual values are dependent on the application (DUT materials, handler kit, maintenance, etc.)

** Typical resistance 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.