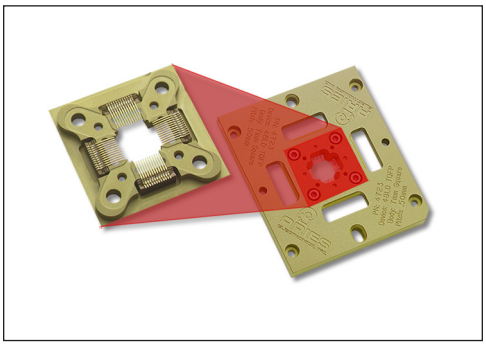
RF Test Socket w/Replaceable Contact Strips

FEATURES

- User replaceable patented Microstrip™ contacts which lie flat on the DUT board, and become part of the transmission line decreasing down-time.
- Same high-frequency performance of our standard Microstrip™ contacts.
- Available in Pb pitches from 0.4mm to 5.0mm.
- Easy to use removal and insertion tool shipped with every order.
- Replaceable contact strips available in just 1 week.
- Socket alignment pins provide accurate socket location to test board.
- Frequency response data available up to 19GHz.



GENERAL SPECIFICATIONS

- SOCKET BODY MATERIAL: either PEEK or Torlon® PAI
- HARDWARE: Stainless Steel
- CONTACT RESISTANCE: <70 mΩ
- CONTACT INDUCTANCE: 0.01nH
- ESTIMATED CONTACT LIFE: 500,000 cycles
- CONTACT FORCE: Consult Factory
- INSERTION LOSS: <1dB to 16.7GHz (at 0.50mm pitch).

CUSTOMIZATION: In addition to the standard products shown on this page, Aries specializes in custom design and production. Special materials, platings, sizes, and configurations can be furnished, depending on the quantity. **NOTE**: Aries reserves the right to change product general specifications without notice.

MOUNTING CONSIDERATIONS

- SUGGESTED MOUNTING HOLE SIZE: 0.120 [3.05] 4 places for #4-40 Screws
- SUGGESTED LOCATING PIN HOLE SIZE: 0.063 [1.6] 4 places
- SUGGESTED TEST BOARD PLATING: 30µ min. hard Au over 50µ min. Ni

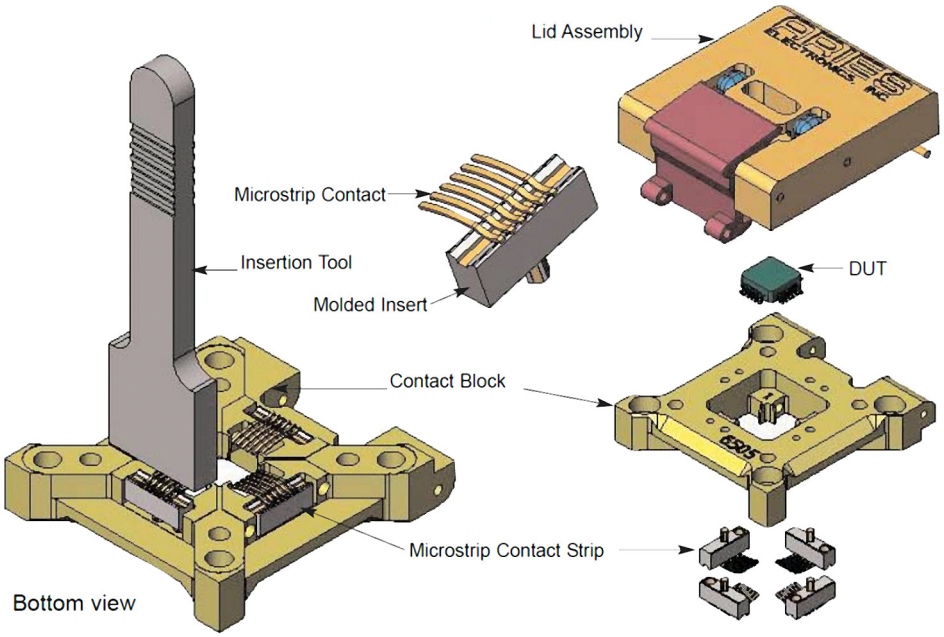
ORDERING INFORMATION

Consult Facotry for P/N

ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED

CONSULT FACTORY FOR OTHER SIZES AND CONFIGURATIONS



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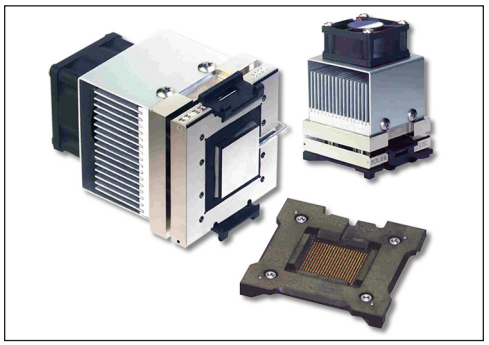
RoHS Compliant

Thermoelectric-cooled RF Test Socket

FEATURES

- Peltier Technology incorporated into test socket lid assembly.
- Thermoelectric Cooler (TEC) provides fast and accurate temp control.
- Built-in epoxy-encapsulated thermistor with Teflon sheathing for highly accurate temperature sensing of ±0.02°C.
- Customized spring-loaded Cu pressue pad provides constant normal force on device under test.
- Brushless DC fan is used to draw max. heat away from finned heatsink.
- Available for all Aries High-Frequency Test Sockets.



GENERAL SPECIFICATIONS

- SOCKET BODY MATERIAL: Torlon® PAI
- HARDWARE: Stainless Steel
- MAXIMUM PACKAGE SIZE: 27mm x 27mm
- TEC TEMPERATURE DIFFERENTIAL: 65°C
- MAXIMUM CURRENT INPUT: 8.5 amps
- MAXIMUM VOLTAGE: 8.5 volts
- QMAX: 38.50 watts

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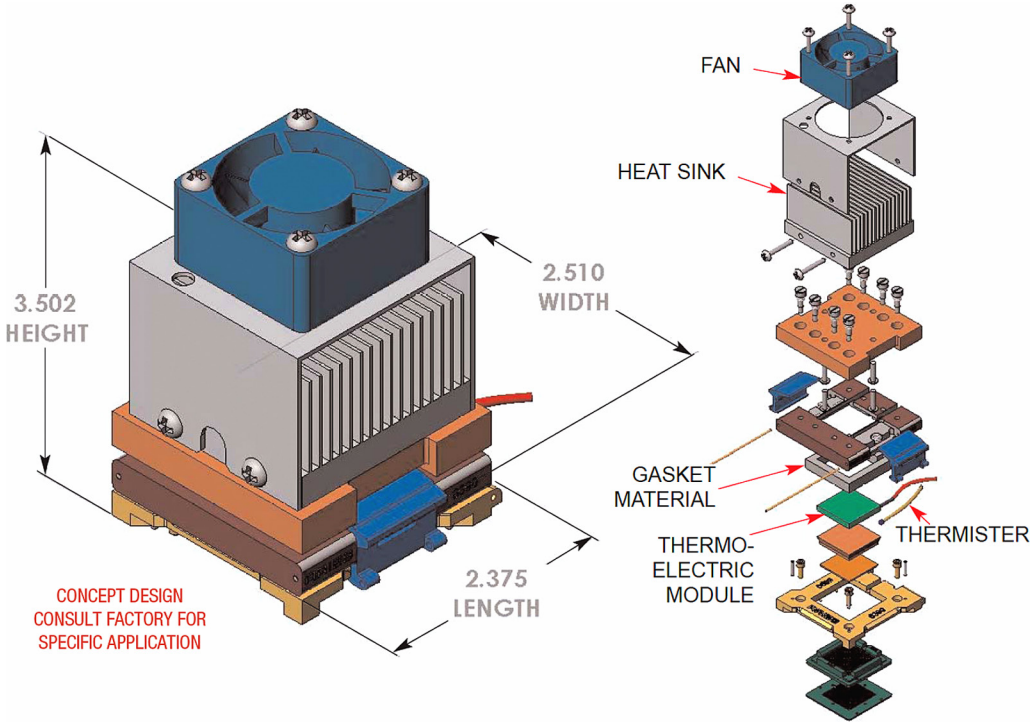
ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED

CONSULT FACTORY FOR OTHER SIZES AND CONFIGURATIONS

ORDERING INFORMATION

Consult Facotry for P/N



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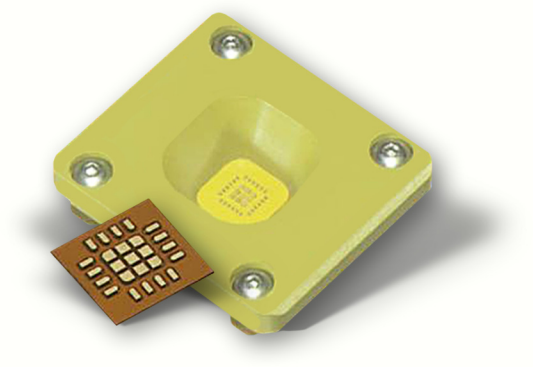
High-Frequency Interposer Socket

FEATURES

- Pressure-mount plunge to board interposer
- Multiple configurations: MLF, QFN, CSP, BGA, MSOP, QSOP, QFP, and more
- Very low inductance per contact site
- High cycle life with easy maintenance
- Manual or Automated Handler applications



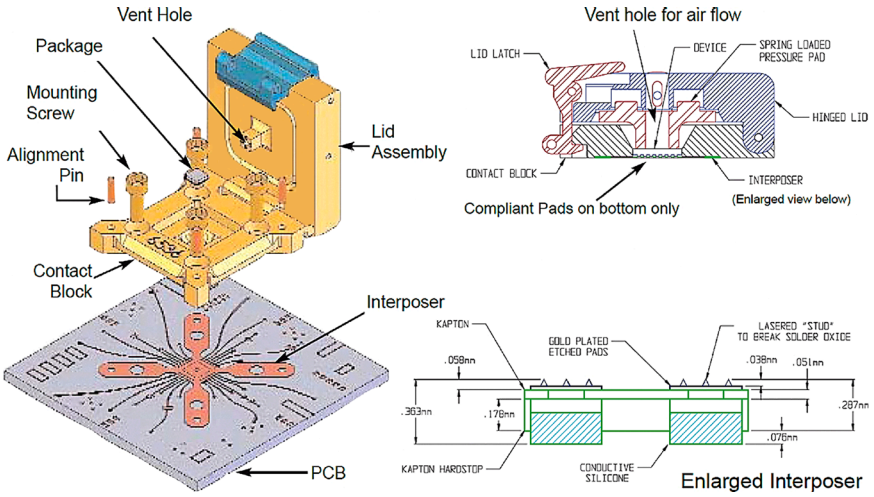
GENERAL SPECIFICATIONS

- **INSERTION LOSS**: less than -1dB to 40GHz
- **SOCKET BODY MATERIAL**: specified at time of quotation
- **INTERPOSER**: etched Kapton with Au-plated Pads and Compliant Pads on bottom side
- **AVAILABLE PITCHES**: down to 0.32mm
- **CONTACT SELF-INDUCTANCE**: 0.11nH (0.50mm pitch CSP).
- **VSWR**: <2:1 to 40GHz
- **CONTACT RESISTANCE**: <20mΩ
- **CONTACT FORCE**: 15-25 grams
- **CURRENT CAPACITY**: 2 amps (continuous) 4 amps (peak)
- **CONTACT LIFE**: 50,000-100,000
- **SIGNAL PATH LENGTH**: 0.011 (with compliant pads)
- **MUTUAL CAPACITANCE**: 0.015pF
- **TEMPERATURE OPERATING RANGE**: -40°C to 150°C

MOUNTING CONSIDERATIONS

- **SUGGESTED PCB PADS**: Au-plated
- **MOUNTING FORCE**: 5-oz inches [0.035Nm]

Suggested Care & Feeding



ORDERING INFORMATION

Consult Factory for P/N

TEST REPORTS

- 20-pin SSOPT Test Socket
- 20-pin SSOPT Return Loss v Frequency Graph
- 64-pin QFP Test Socket
- 64-pin QFP Test Socket Return Loss v Frequency Graph
- CSP Microstrip Socket Cycling Test – DC Results
- CSP Microstrip Socket Cycling Test – RF Results
- CSP Microstrip Socket – DC Results
- Kapton CSP Socket
- QFP Microstrip Socket Cycling Test - DC Results
- QFP Microstrip Socket Cycling Test - RF Results
- QFP Microstrip Socket Cycling Test - RF Results
- QFP Microstrip Socket - DC Results
- QFP Microstrip Socket - RF Results

ALL DIMENSIONS: INCHES [MILLIMETERS]
ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED
CONSULT FACTORY FOR OTHER SIZES AND CONFIGURATIONS

CUSTOMIZATION: ARIES SPECIALIZES IN CUSTOM DESIGN AND PRODUCTION. SPECIAL MATERIALS, PLATINGS, SIZES, AND CONFIGURATIONS CAN BE FURNISHED, DEPENDING ON QUANTITY.

ARIES RESERVES THE RIGHT TO CHANGE PRODUCT GENERAL SPECIFICATIONS WITHOUT NOTICE

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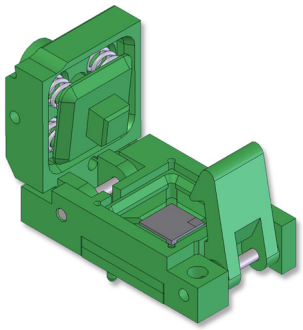
RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 6.5mm Square



FEATURES

- Aries unique universal socketing system allows the socket to be easily configured for any package, on any pitch (or multiple pitch) from 0.2mm or greater, in any configuration, with little or no tooling charge or extra lead-time.
- For Test & Burn-In of CSP, µBGA, Bump-Array, QFN, QFP, MLF, DFN, SSOP, TSSOP, TSOP, SOP, SOIC, LGA, LCC, PLCC, TO and any SMT package style made. Also can be compatible with PGA packaged devices.
- Quick and easy **Probe Replacement System**: the complete set of probes can be removed and a new set (interposer) can be inserted quickly and easily. The old set can be returned to the factory for repair and sent back within one day.
- The Au over Ni-plated compression Spring-Probes leave very small witness marks on the bottom surface of the device solder balls.
- Standard molded socket format can accommodate any device package of 6.5mm or smaller, by using machined (for small quantities) or custom molded (for large quantities) pressure pads and interposers.
- Pressure pad compression spring provides proper force against device and allows for height variations in device thickness.
- 4-point crown insures scrub on solder balls, and raised tip probe provides scrub on pads.
- Signal path during test only 0.077 [1.96].

GENERAL SPECIFICATIONS

- 1dB BANDWIDTH: at 18.5GHz, <3dB to 39.7GHz (0.50mm pitch)
- PIN INDUCTANCE: 0.59nH (@ 0.50mm pitch)
- MUTUAL CAPACITANCE: 0.12pF
- VSWR: <2:1 to 38GHz
- CONTACT RESISTANCE: <40 mΩ
- COMPRESSION SPRING PROBES: heat-treated BeCu
- COMPRESSION SPRING PROBE PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SAE AMS-QQ-N-290
- ESTIMATED CONTACT LIFE: 500,000 cycles min.
- CONTACT FORCE : 6g per contact on 0.20-0.29mm pitch
  : 15g per contact on 0.30-0.35mm pitch
  : 16g per contact on 0.40-0.45mm pitch
  : 25g per contact on 0.50-0.75mm pitch
  : 25g per contact on 0.80mm pitch or larger
- OPERATING TEMPERATURE: -55°C [-67°F] min. to 150°C [302°C] max.
- MOLDED SOCKET COMPONENTS: UL 94V-0 Ultem

MOUNTING CONSIDERATIONS

- See “PCB FOOTPRINT TOP VIEW” for requirements
- REQUIRES: two #0-80 screws (supplied) and PEM nuts for mounting (not supplied). Mounting holes size shown may differ depending on PEM nut selected
- NOTE: Sockets must be handled with care when mounting or removing sockets to/from PCB to avoid damaging spring contacts.
- TEST PCB MINIMUM DIAMETER “G” : 0.025 [0.64] (large probe 0.80mm pitch and larger)
  : 0.015 [0.38] (small probe 0.50-0.75mm pitch)
  : 0.012 [0.31] (small probe 0.40-0.45mm pitch)
  : 0.009 [0.23] (small probe 0.30-0.35mm pitch)
  : 0.004 [0.10] (small probe 0.20-0.20mm pitch)
- TEST PCB DIAMETER SPRING PROBE PAD PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SEA AMS-QQ-N-290. Pad must be the same height as top surface of PCB. Please refer to the Custom Socket Drawing supplied by Aries after receipt of your order for your specific application.

ORDERING INFORMATION

Consult Facotry

A detailed device drawing must be sent to Aries to quote and design a socket.

See Data Sheet for...

CSP Sockets

23016 Hybrid Socket
23021 µBGA up to 6.5mm
23017 µBGA up to 13mm
23018 µBGA up to 27mm
23018-APP w/Adj Pressure Pad
23019 µBGA up to 40mm
23020 µBGA up to 55mm
23023 Optical Failure Analysis

RF Sockets

24008 RF up to 13mm
24009 RF up to 27mm
24009-APP w/Adj Pressure Pad
24011 RF up to 40mm
24012 RF up to 55mm
24010 RF Machined Socket
23022 Kelvin Test Socket

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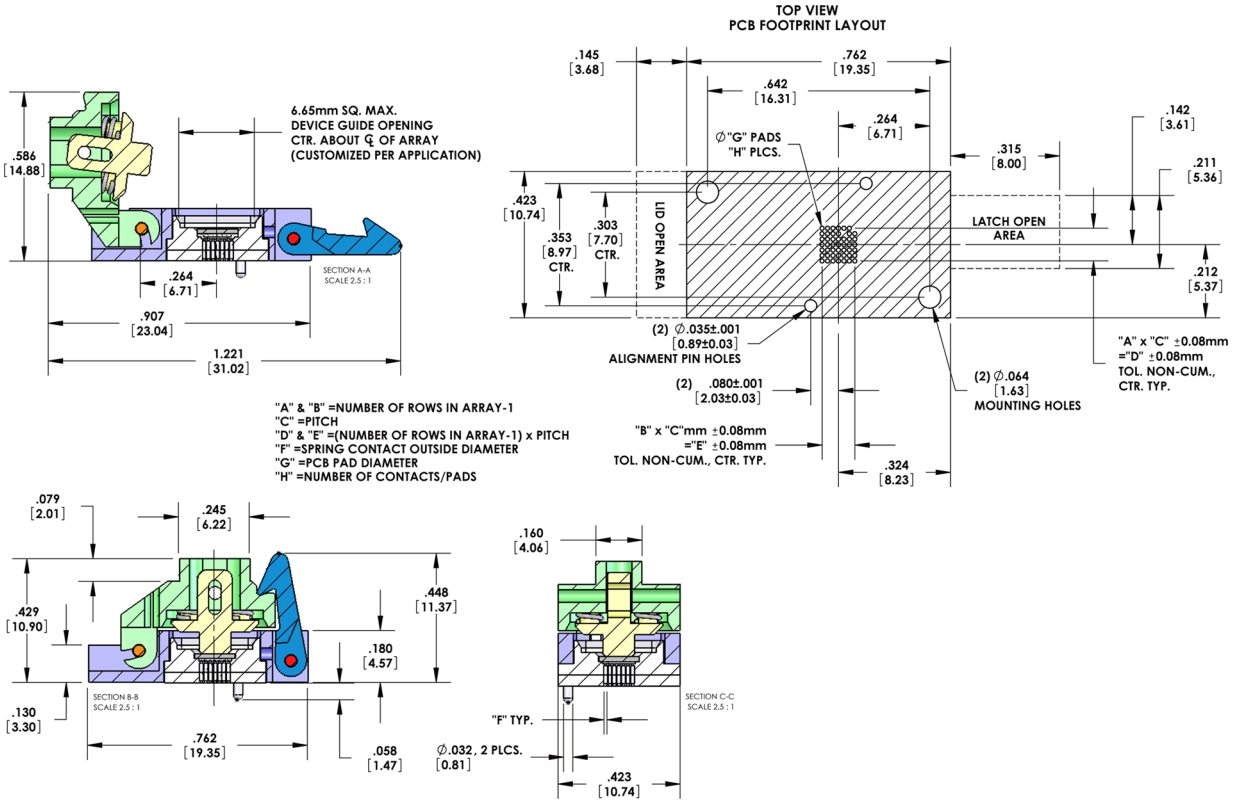
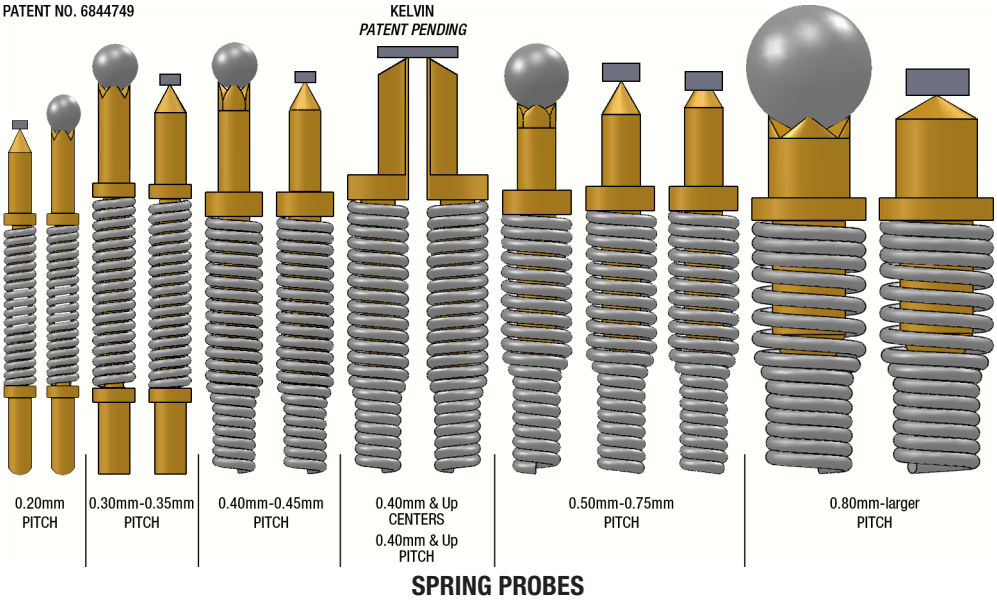
RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 6.5mm Square





SPRING PROBES

ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED

CUSTOMIZATION: In addition to the standard products shown on this page, Aries specializes in custom design and production. Special materials, platings, sizes, and configurations can be furnished, depending on the quantity. NOTE: Aries reserves the right to change product general specifications without notice.

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RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 13mm Square

FEATURES

- Aries unique universal socketing system allows the socket to be easily configured for any package, on any pitch (or multiple pitch) from 0.2mm or greater, in any configuration, with little or no tooling charge or extra lead-time.
- For Test & Burn-In of CSP, µBGA, Bump-Array, QFN, QFP, MLF, DFN, SSOP, TSSOP, TSOP, SOP, SOIC, LGA, LCC, PLCC, TO and any SMT package style made. Also can be compatible with PGA packaged devices.
- Quick and easy **Probe Replacement System**: the complete set of probes can be removed and a new set (interposer) can be inserted quickly and easily. The old set can be returned to the factory for repair and sent back within one day.
- Socket is easily mounted and removed to & from the PCB due to solderless pressure mount compression Spring-Probes which are accurately located by two molded plastic alignment pins and mounted with four stainless steel screws.
- The Au over Ni-plated compression Spring-Probes leave very small witness marks on the bottom surface of the device solder balls.
- Standard molded socket format can accommodate any device package of 13mm or smaller, by using machined (for small quantities) or custom molded (for large quantities) pressure pads and interposers.
- Pressure pad compression spring provides proper force against device and allows for height variations in device thickness.
- 4-point crown insures scrub on solder balls, and raised tip probe provides scrub on pads.
- Signal path during test only 0.077 [1.96].

ORDERING INFORMATION

Consult Factory

GENERAL SPECIFICATIONS

- 1dB BANDWIDTH: 18.5 GHz, <3dB to 39.7 GHz (0.50mm pitch)
- PIN INDUCTANCE: 0.59nH (0.50mm pitch)
- MUTUAL CAPACITANCE: 0.12pF
- VSWR: <2:1 to 38Ghz
- CONTACT RESISTANCE: <40 mΩ
- COMPRESSION SPRING PROBES: heat-treated BeCu
- COMPRESSION SPRING PROBE PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SAE AMS-QQ-N-290
- ESTIMATED CONTACT LIFE: 500,000 cycles minimum
- CONTACT FORCE : 6g per contact on 0.20-0.29mm pitch
  : 15g per contact on 0.30-0.35mm pitch
  : 16g per contact on 0.40-0.45mm pitch
  : 25g per contact on 0.50-0.75mm pitch
  : 25g per contact on 0.80mm pitch or larger
- OPERATING TEMPERATURE: -55°C [-67°F] min. to 150°C [302°C] max.
- MOLDED SOCKET COMPONENTS: UL 94V-0 Ultem

MOUNTING CONSIDERATIONS

- See "PCB FOOTPRINT TOP VIEW" for requirements
- REQUIRES: four #2-56 Screws and PEM nuts for mounting (not supplied) Mounting holes size shown may differ depending on PEM nut selected
- NOTE: Sockets must be handled with care when mounting or removing sockets to/from PCB to avoid damaging spring contacts
- TEST PCB MINIMUM DIAMETER "G" : 0.025 [0.64] (large probe 0.80mm pitch and larger)
  : 0.015 [0.38] (small probe 0.50-0.75mm pitch)
  : 0.012 [0.31] (small probe 0.40-0.45mm pitch)
  : 0.009 [0.23] (small probe 0.30-0.35mm pitch)
  : 0.004 [0.10] (small probe 0.20-0.20mm pitch)

A detailed device drawing must be sent to Aries to quote and design a socket.

See Data Sheet for...

CSP Sockets

23016 Hybrid Socket
23021 µBGA up to 6.5mm
23017 µBGA up to 13mm
23018 µBGA up to 27mm
23018-APP w/Adj Pressure Pad
23019 µBGA up to 40mm
23020 µBGA up to 55mm
23023 Optical Failure Analysis

RF Sockets

24013 RF up to 6.5mm
24009 RF up to 27mm
24009-APP w/Adj Pressure Pad
24011 RF up to 40mm
24012 RF up to 55mm
24010 RF Machined Socket
23022 Kelvin Test Socket

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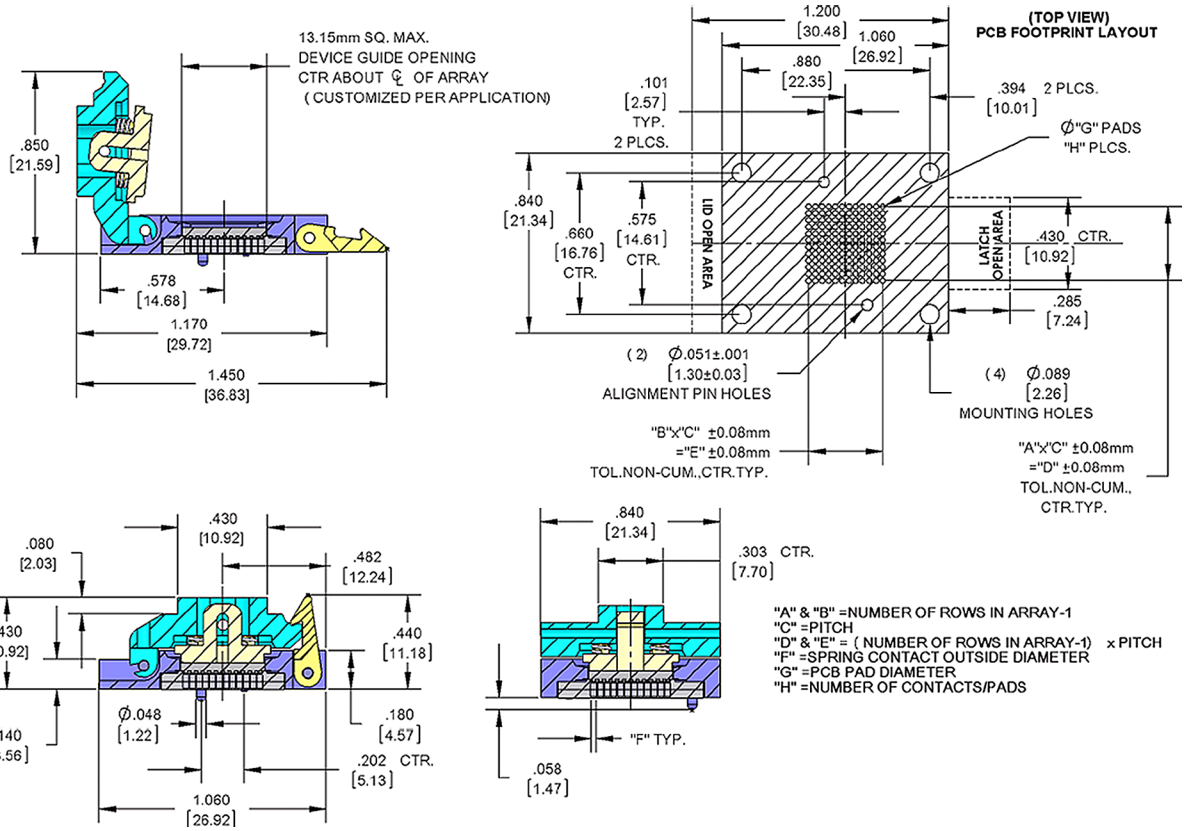
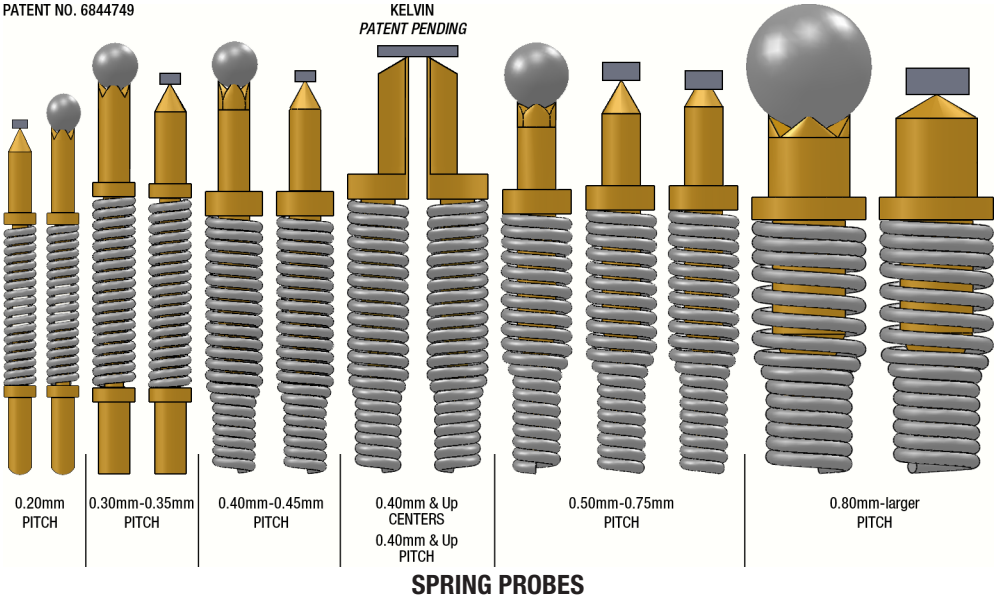
RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 13mm Square

- TEST PCB DIAMETER SPRING PROBE PAD PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SEA AMS-QQ-N-290. Pad must be the same height as top surface of PCB. Please refer to the Custom Socket Drawing supplied by Aries after receipt of your order for your specific application.





SPRING PROBES

ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED

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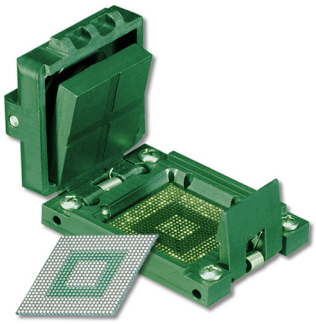
RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 27mm Square

FEATURES

- Aries unique universal socketing system allows the socket to be easily configured for any package, on any pitch (or multiple pitch) from 0.2mm or greater, in any configuration, with little or no tooling charge or extra lead-time.
- For Test & Burn-In of CSP, µBGA, Bump-Array, QFN, QFP, MLF, DFN, SSOP, TSSOP, TSOP, SOP, SOIC, LGA, LCC, PLCC, TO and any SMT package style made. Also can be compatible with PGA packaged devices.
- Quick and easy **Probe Replacement System**: the complete set of probes can be removed and a new set (interposer) can be inserted quickly and easily. The old set can be returned to the factory for repair and sent back within one day.
- Pressure mounting, no soldering required.
- 4-point crown insures "scrub" on solder balls, raised tip provides "scrub" on pads.
- Signal path during test only 0.077 [1.96].
- Accommodates any package up to 27mm square.
- Small overall socket size/profile allows max. number of sockets per BIB and BIBs per oven, while being operator-friendly.



ORDERING INFORMATION

Consult Factory

GENERAL SPECIFICATIONS

- MOLDED SOCKET COMPONENTS: UL94V-0 PEEK and/or Ultem
- PIN INDUCTANCE: 0.51nH (large probe)
- CONTACT RESISTANCE: <40 mΩ
- 1dB BANDWIDTH to 10.1GHz (0.80mm pitch) (large probe)
- ESTIMATED CONTACT LIFE: 500,000 cycles
- COMPRESSION SPRING PROBES: heat-treated BeCu with 30µ [0.75µ] min. Au per Mil-G-45204 over 30µ [0.75µ] min.] Ni per SAE-AMS-QQ-N-290
- CONTACT FORCE : 6g per contact on 0.20-0.29mm pitch
  : 15g per contact on 0.30-0.35mm pitch
  : 16g per contact on 0.40-0.45mm pitch
  : 25g per contact on 0.50-0.75mm pitch
  : 25g per contact on 0.80mm pitch or larger
- OPERATING TEMPERATURE: -55°C [-67°F] min. to 150°C [302°F] max.
- ALL HARDWARE: Stainless Steel

MOUNTING CONSIDERATIONS

- SOCKET: mounted with four #4-40 screws (to be removed at time of socket mounted to PCB) or a tapped, insulated backing plate to be used on underside of PCB for high pin count applications
- NOTE: Sockets must be handled with care when mounting or removing sockets to/from PCB
- TEST PCB MINIMUM DIAMETER "G" : 0.025 [0.64] (large probe 0.80mm pitch and larger)
  : 0.015 [0.38] (small probe 0.50-0.75mm pitch)
  : 0.012 [0.31] (small probe 0.40-0.45mm pitch)
  : 0.009 [0.23] (small probe 0.30-0.35mm pitch)
  : 0.004 [0.10] (small probe 0.20-0.20mm pitch)
- TEST PCB DIAMETER SPRING PROBE PAD PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SEA-AMS-QQ-N-290. Pad must be the same height as top surface of PCB. Please refer to the Custom Socket Drawing supplied by Aries after receipt of your order for your specific application.
- Some applications may require a Backup Plate. See drawing for more information.

A detailed device drawing must be sent to Aries to quote and design a socket.

See Data Sheet for...

CSP Sockets

23016 Hybrid Socket
23021 µBGA up to 6.5mm
23017 µBGA up to 13mm
23018 µBGA up to 27mm
23018-APP w/Adj Pressure Pad
23019 µBGA up to 40mm
23020 µBGA up to 55mm
23023 Optical Failure Analysis

RF Sockets

24013 RF up to 6.5mm
24008 RF up to 13mm
24009-APP w/Adj Pressure Pad
24011 RF up to 40mm
24012 RF up to 55mm
24010 RF Machined Socket
23022 Kelvin Test Socket

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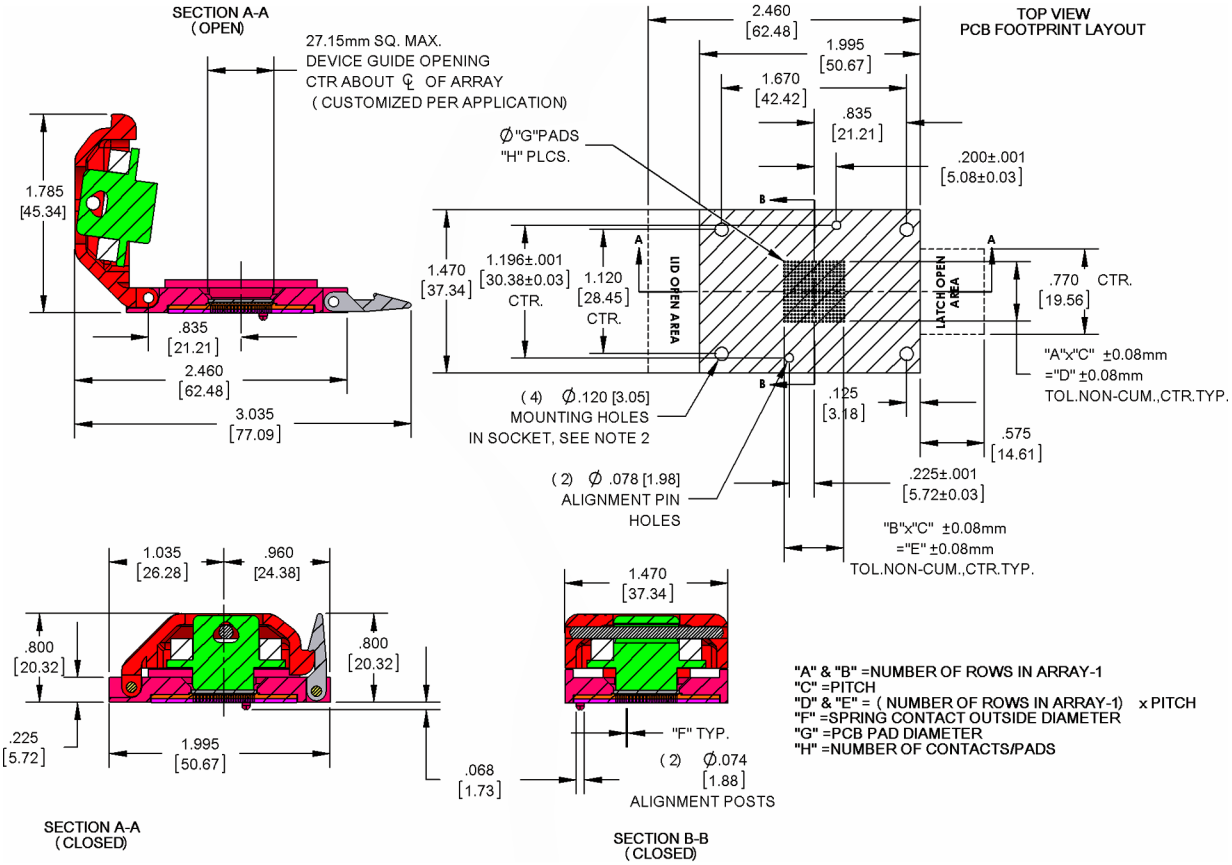
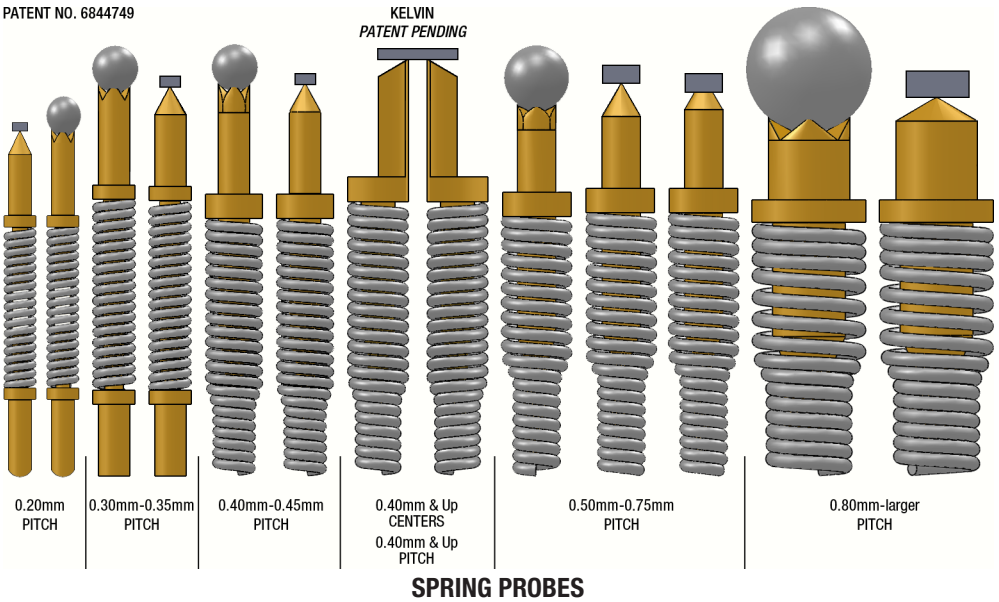
RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 27mm Square





SPRING PROBES

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RoHS Compliant

High-Frequency Center Probe Test Socket with Adj. Pressure Pad for Devices up to 27mm Sq

FEATURES

- Aries unique universal socketing system allows the socket to be easily configured for any package, on any pitch (or multiple pitch) from 0.2mm or greater, in any configuration, with little or no tooling charge or extra lead-time.
- For Test & Burn-In of CSP, µBGA, Bump-Array, QFN, QFP, MLF, DFN, SSOP, TSSOP, TSOP, SOP, SOIC, LGA, LCC, PLCC, TO and any SMT package style made. Also can be compatible with PGA packaged devices.
- Quick and easy **Probe Replacement System**: the complete set of probes can be removed and a new set (interposer) can be inserted quickly and easily. The old set can be returned to the factory for repair and sent back within one day.
- Pressure mounting, no soldering required.
- 4-point crown (other styles also available) insures scrub on solder oxides.
- Signal path during test only 0.077 [1.96].
- Accommodates any package up to 27mm square.
- Small overall socket size/profile allows max. number of sockets per BIB and BIB's per oven, while being operator-friendly
- Adjustable pressure pad, with a large tolerance, allows for varying device heights as well as for fine-tuning pressure pad force to meet specific device requirements.

ORDERING INFORMATION

Consult Facotry

GENERAL SPECIFICATIONS

- MOLDED SOCKET COMPONENTS: UL 94V-0 PEEK and/or Ultem
- PIN INDUCTANCE: 0.51nH (large probe)
- CONTACT RESISTANCE: <40 mΩ
- 1dB BANDWIDTH: to 10.1GHz (0.80mm pitch) (large probe)
- ESTIMATED CONTACT LIFE: 500,000 cycles
- COMPRESSION SPRING PROBES: heat-treated BeCu with 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SAE AMS-QQ-N-290
- CONTACT FORCE : 6g per contact on 0.20-0.29mm pitch
  : 15g per contact on 0.30-0.35mm pitch
  : 16g per contact on 0.40-0.45mm pitch
  : 25g per contact on 0.50-0.75mm pitch
  : 25g per contact on 0.80mm pitch or larger
- OPERATING TEMPERATURE: -55°C [-67°F] min. to 150°C [302°F] max.
- ALL HARDWARE: Stainless Steel

MOUNTING CONSIDERATIONS

- SOCKET: mounted with four #4-40 screws (to be removed at time of socket mounted to PCB) or a tapped, insulated backing plate to be used on underside of PCB for high pin count applications
- NOTE: Sockets must be handled with care when mounting or removing sockets to/from PCB
- TEST PCB MINIMUM DIAMETER "G": 0.025 [0.64] (large probe 0.80mm pitch and larger)
  : 0.015 [0.38] (small probe 0.50-0.75mm pitch)
  : 0.012 [0.31] (small probe 0.40-0.45mm pitch)
  : 0.009 [0.23] (small probe 0.30-0.35mm pitch)
  : 0.004 [0.10] (small probe 0.20-0.20mm pitch)
- TEST PCB DIAMETER SPRING PROBE PAD PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SEA AMS-QQ-N-290. Pad must be the same height as top surface of PCB. Please refer to the Custom Socket Drawing supplied by Aries after receipt of your order for your specific application.

A detailed device drawing must be sent to Aries to quote and design a socket.

See Data Sheet for...

CSP Sockets

23016 Hybrid Socket
23021 µBGA up to 6.5mm
23017 µBGA up to 13mm
23018 µBGA up to 27mm
23018-APP w/Adj Pressure Pad
23019 µBGA up to 40mm
23020 µBGA up to 55mm
23023 Optical Failure Analysis

RF Sockets

24013 RF up to 6.5mm
24008 RF up to 13mm
24009 RF up to 27mm
24011 RF up to 40mm
24012 RF up to 55mm
24010 RF Machined Socket
23022 Kelvin Test Socket

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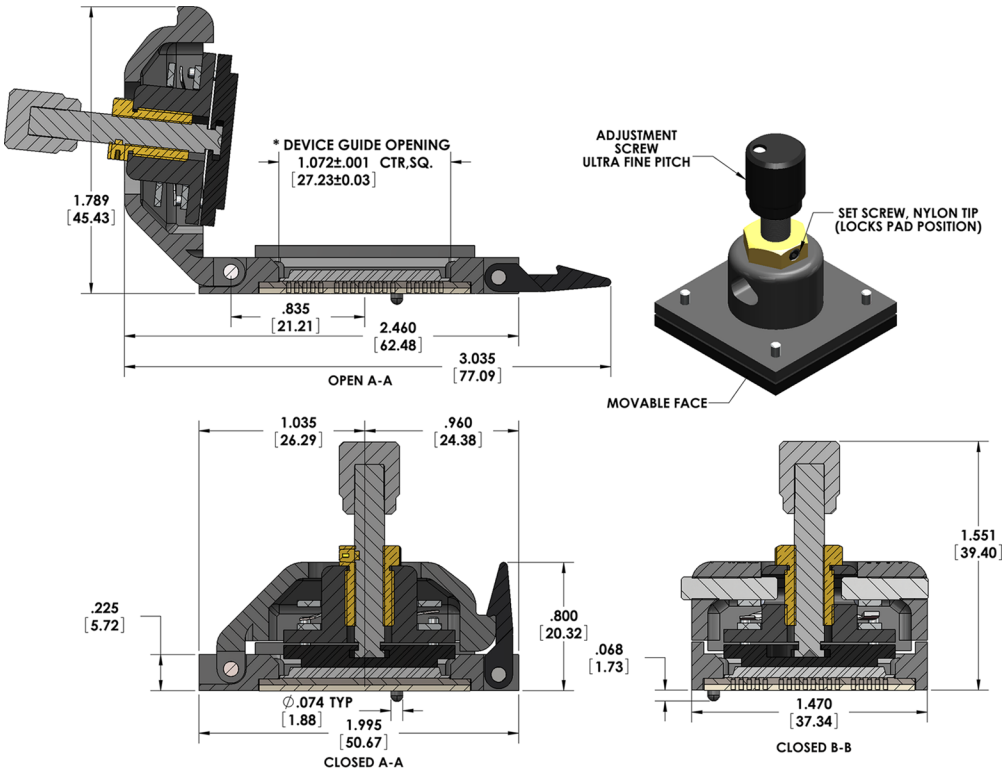
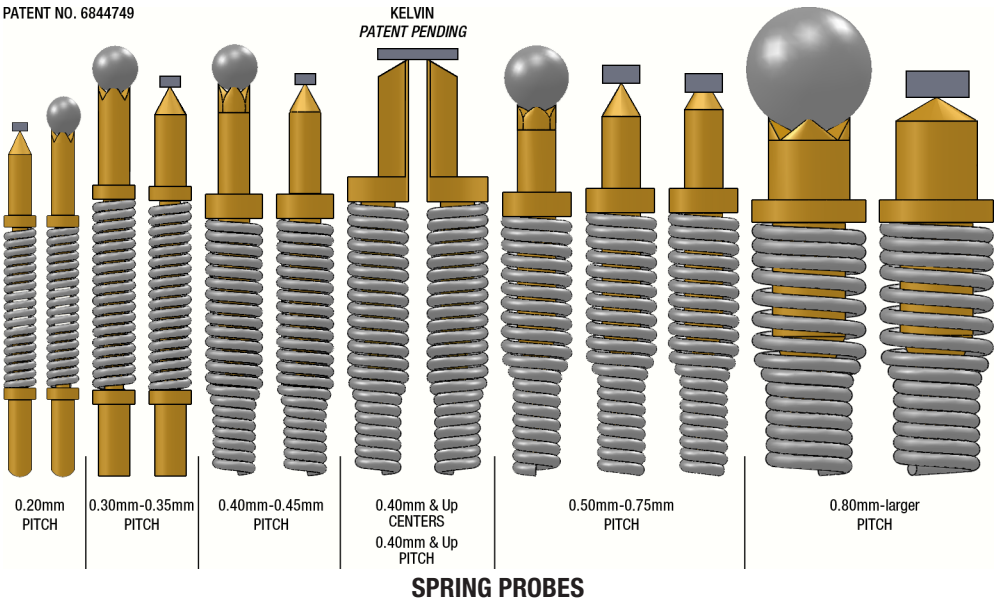
RoHS Compliant

High-Frequency Center Probe Test Socket with Adj. Pressure Pad for Devices up to 27mm Sq



- * MARKED DIMENSIONS & ITEMS ARE DEVICE DEPENDENT FOR EACH ORDER
- FOR BASE SOCKET INFO PLEASE REFER TO THE 23018 & 24009 DATA SHEETS
- ADJUSTABLE PRESSURE PAD CAN BE CUSTOMIZED FOR SPECIFIC DEVICE HEIGHT RANGE AND FORCE.
- SOCKET SHOWN IS ONLY AN EXAMPLE, EACH ORDER IS DESIGNED FOR THE CUSTOMER'S DEVICE.
- CURRENTLY, THE ADJUSTABLE PRESSURE PAD IS AVAILABLE ONLY FOR DEVICES UP TO 27.15MM SQ. IN SOCKET TYPE 23018 & 24009.
- OTHER SOCKET SIZES WITH THE ADJUSTABLE PRESSURE PAD ARE IN DEVELOPMENT, DESIGN IS PROPRIETARY TO ARIES ELECTRONICS.



SPRING PROBES

ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED

CUSTOMIZATION: In addition to the standard products shown on this page, Aries specializes in custom design and production. Special materials, platings, sizes, and configurations can be furnished, depending on the quantity. NOTE: Aries reserves the right to change product general specifications without notice.

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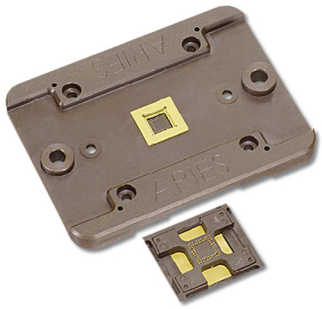
RoHS Compliant

Machined High-Frequency Center Probe Test Socket for BGA, CSP, & MLF Packages

FEATURES



- Aries unique universal socketing system allows the socket to be easily configured for any package, on any pitch (or multiple pitch) from 0.2mm or greater, in any configuration, with little or no tooling charge or extra lead-time.
- For Test & Burn-In of CSP, µBGA, Bump-Array, QFN, QFP, MLF, DFN, SSOP, TSSOP, TSOP, SOP, SOIC, LGA, LCC, PLCC, TO and any SMT package style made. Also can be compatible with PGA packaged devices.
- Quick and easy **Probe Replacement System**: the complete set of probes can be removed and a new set (interposer) can be inserted quickly and easily. The old set can be returned to the factory for repair and sent back within one day.
- Solderless Spring-Probes pressure mount to the test board and device solder ball or pad.
- Only 0.077 [1.96] signal path.
- Very low inductance and capacitance.
- Small footprint allows max. use of test board area.
- Chip guides allow accurate device location.
- Spring loaded contacts provide high cycle life.
- 4-point edge male contacts provide accurate mating.
- Socket locating posts provide accurate socket location to board.
- Bottom contact allows for via in center of PCB pad.

ORDERING INFORMATION

Consult Factory

GENERAL SPECIFICATIONS

- SOCKET BODY MATERIAL: Torlon PAI
- HARDWARE: Stainless Steel
- SPRING LOADED CONTACTS: Au-plated BeCu
- CONTACT RESISTANCE: <40 mΩ
- ACCEPTS SOLDER BALL SIZES: 0.15mm-0.93mm
- ESTIMATED CONTACT LIFE: 500,000 cycles
- CONTACT FORCE : 6g per contact on 0.20-0.29mm pitch
  : 15g per contact on 0.30-0.35mm pitch
  : 16g per contact on 0.40-0.45mm pitch
  : 25g per contact on 0.50-0.75mm pitch
  : 25g per contact on 0.80mm pitch or larger
- PROBE SELF INDUCTANCE: 0.51nH (large probe); 0.59nH (small probe)
- INSERTION LOSS: 1dB to 10.1GHz (larger probe at 0.80mm pitch); 1dB to 18.7Ghz (smaller probe at 0.50mm pitch)

MOUNTING CONSIDERATIONS

- SUGGESTED LOCATING PIN HOLE SIZE: 0.063 [1.6mm] 2 places
- SUGGESTED MOUNTING HOLE SIZE: 0.120 [3.05mm] 4 places for #4-40 screws
- TEST PCB MINIMUM DIAMETER "G" : 0.025 [0.64] (large probe 0.80mm pitch and larger)
  : 0.015 [0.38] (small probe 0.50-0.75mm pitch)
  : 0.012 [0.31] (small probe 0.40-0.45mm pitch)
  : 0.009 [0.23] (small probe 0.30-0.35mm pitch)
  : 0.004 [0.10] (small probe 0.20-0.20mm pitch)
- TEST PCB DIAMETER SPRING PROBE PAD PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SEA AMS-QQ-N-290. Pad must be the same height as top surface of PCB. Please refer to the Custom Socket Drawing supplied by Aries after receipt of your order for your specific application.

A detailed device drawing must be sent to Aries to quote and design a socket.

See Data Sheet for...

CSP Sockets

23016 Hybrid Socket
23021 µBGA up to 6.5mm
23017 µBGA up to 13mm
23018 µBGA up to 27mm
23018-APP w/Adj Pressure Pad
23019 µBGA up to 40mm
23020 µBGA up to 55mm
23023 Optical Failure Analysis

RF Sockets

24013 RF up to 6.5mm
24008 RF up to 13mm
24009 RF up to 27mm
24009-APP w/Adj Pressure Pad
24011 RF up to 40mm
24012 RF up to 55mm
23022 Kelvin Test Socket

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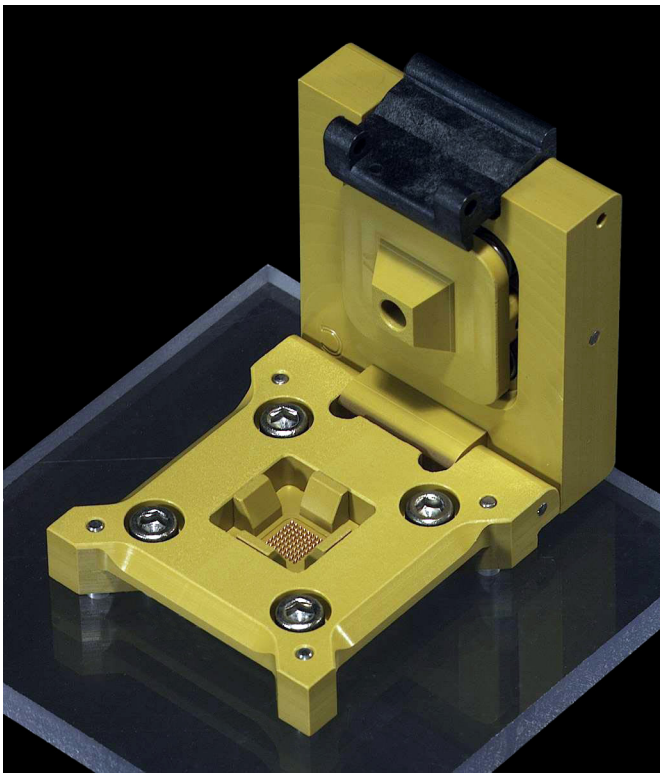
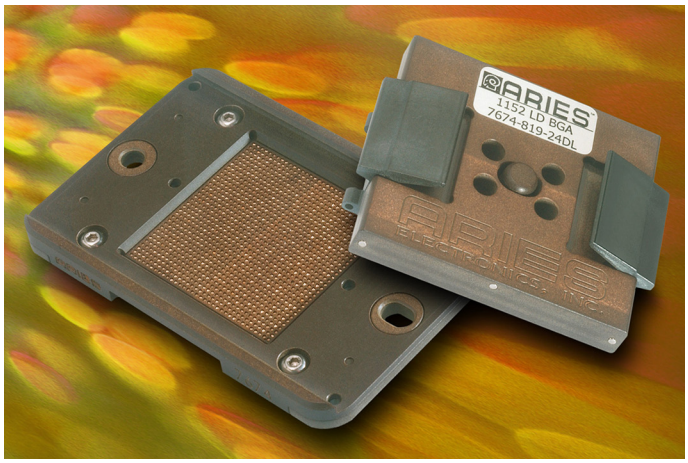
RoHS Compliant

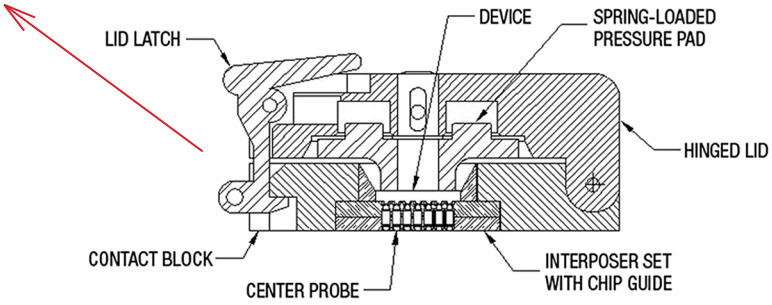
Machined High-Frequency Center Probe Test Socket for BGA, CSP, & MLF Packages



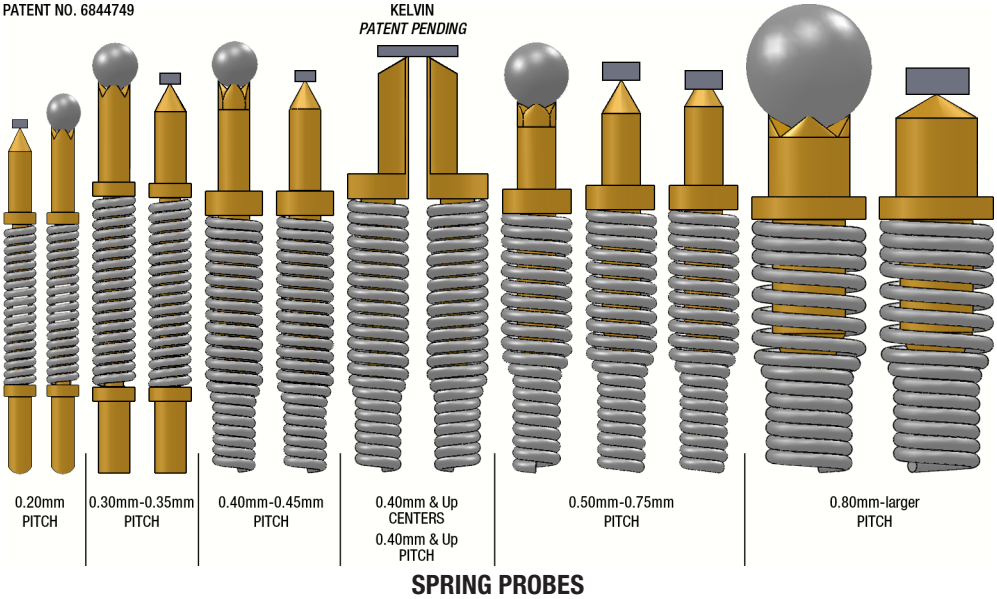
"-24HL" HINGED LID VERSION SHOWN



"-24DL" DOUBLE-LATCHED REMOVABLE LID VERSION SHOWN



"-24HL" HINGED LID VERSION SECTION



SPRING PROBES

ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED

CUSTOMIZATION: In addition to the standard products shown on this page, Aries specializes in custom design and production. Special materials, platings, sizes, and configurations can be furnished, depending on the quantity. NOTE: Aries reserves the right to change product general specifications without notice.

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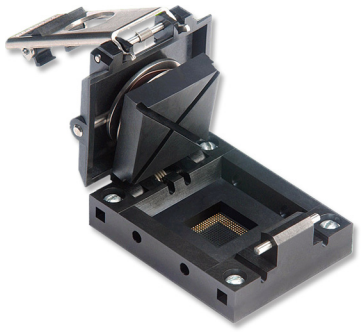
RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 40mm Square



FEATURES

- Aries unique universal socketing system allows the socket to be easily configured for any package, on any pitch (or multiple pitch) from 0.2mm or greater, in any configuration, with little or no tooling charge or extra lead-time.
- For Test & Burn-In of CSP, µBGA, Bump-Array, QFN, QFP, MLF, DFN, SSOP, TSSOP, TSOP, SOP, SOIC, LGA, LCC, PLCC, TO and any SMT package style made. Also can be compatible with PGA packaged devices.
- Quick and easy **Probe Replacement System**: the complete set of probes can be removed and a new set (interposer) can be inserted quickly and easily. The old set can be returned to the factory for repair and sent back within one day.
- 4-point crown insures scrub on solder oxides.
- Single-point Probes available for small land area contact pads.
- Signal path during test only 0.077 [1.96].
- Socket is easily mounted and removed to & from the BIB due to solderless pressure mount compression Spring-Probes which, are accurately located by two molded plastic alignment pins and mounted with four stainless steel screws.
- The Au over Ni-plated compression Spring-Probes leave very small witness marks on the bottom surface of the device solder balls
- Standard molded socket format can accommodate any device package of 40mm or smaller.
- Pressure pad compression spring provides proper force against device and allows for height variations in device thickness.

ORDERING INFORMATION

Consult Factory

GENERAL SPECIFICATIONS

- MOLDED SOCKET COMPONENTS: UL 94V-0 PEEK and/or Ultem
- 1dB BANDWIDTH: 10.1GHz (0.80mm pitch probe) and 18.5GHz (0.5mm pitch probe)
- ESTIMATED CONTACT LIFE: 500,000 cycles
- COMPRESSION SPRING PROBES: heat-treated BeCu with 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SAE AMS-QQ-N-290
- CONTACT FORCE : 6g per contact on 0.20-0.29mm pitch
  : 15g per contact on 0.30-0.35mm pitch
  : 16g per contact on 0.40-0.45mm pitch
  : 25g per contact on 0.50-0.75mm pitch
  : 25g per contact on 0.80mm pitch or larger
- OPERATING TEMPERATURE: -55°C [-67°F] min. to 150°C [302°F] max.
- ALL HARDWARE: Stainless Steel
- TYPICAL BURN-IN TEMPERATURE: 150°C max.

MOUNTING CONSIDERATIONS

- See "PCB FOOTPRINT TOP VIEW" for requirements
- NOTE: Sockets must be handled with care when mounting or removing sockets to/from PCB
- TEST PCB MINIMUM DIAMETER "G": 0.025 [0.64] (large probe 0.80mm pitch and larger)
  : 0.015 [0.38] (small probe 0.50-0.75mm pitch)
  : 0.012 [0.31] (small probe 0.40-0.45mm pitch)
  : 0.009 [0.23] (small probe 0.30-0.35mm pitch)
  : 0.004 [0.10] (small probe 0.20-0.20mm pitch)
- TEST PCB DIAMETER SPRING PROBE PAD PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SEA AMS-QQ-N-290. Pad must be the same height as top surface of PCB. Please refer to the Custom Socket Drawing supplied by Aries after receipt of your order for your specific application.
- Some applications may require a Backup Plate. See drawing for more information.

A detailed device drawing must be sent to Aries to quote and design a socket.

See Data Sheet for...

CSP Sockets

23016 Hybrid Socket
23021 µBGA up to 6.5mm
23017 µBGA up to 13mm
23018 µBGA up to 27mm
23018-APP w/Adj Pressure Pad
23019 µBGA up to 40mm
23020 µBGA up to 55mm
23023 Optical Failure Analysis

RF Sockets

24013 RF up to 6.5mm
24008 RF up to 13mm
24009 RF up to 27mm
24009-APP w/Adj Pressure Pad
24012 RF up to 55mm
24010 RF Machined Socket
23022 Kelvin Test Socket

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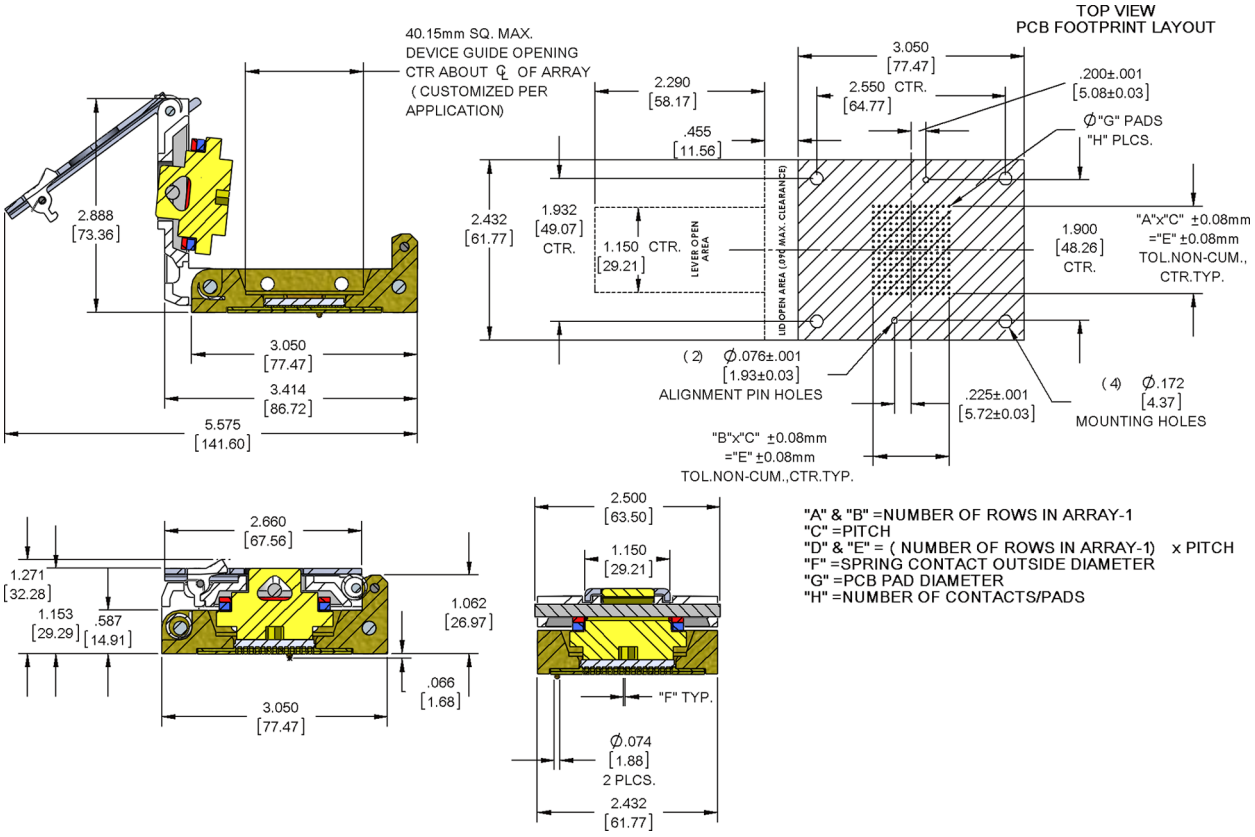
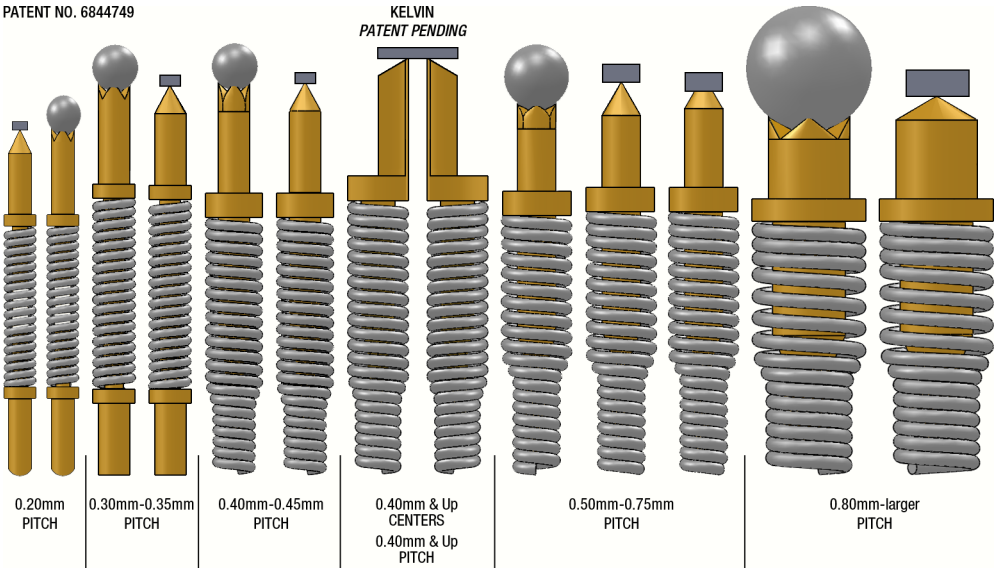
RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 40mm Square





SPRING PROBES

ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED

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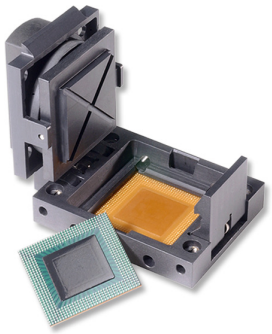
RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 55mm Square



FEATURES

- Aries unique universal socketing system allows the socket to be easily configured for any package, on any pitch (or multiple pitch) from 0.2mm or greater, in any configuration, with little or no tooling charge or extra lead-time.
- For Test & Burn-In of CSP, µBGA, Bump-Array, QFN, QFP, MLF, DFN, SSOP, TSSOP, TSOP, SOP, SOIC, LGA, LCC, PLCC, TO and any SMT package style made. Also can be compatible with PGA packaged devices.
- Quick and easy **Probe Replacement System**: the complete set of probes can be removed and a new set (interposer) can be inserted quickly and easily. The old set can be returned to the factory for repair and sent back within one day.
- 4-point crown insures scrub on solder oxides, while pointed probe works with LGA's, MLF's, etc.
- Single-point Probes available for small land area contact pads.
- Signal path during test only 0.077 [1.96].
- Socket is easily mounted and removed to & from the test board due to solderless pressure mount compression Spring-Probes which, are accurately located by two molded plastic alignment pins and mounted with four stainless steel screws.
- The Au over Ni-plated compression Spring-Probes leave very small witness marks on the bottom surface of the device solder balls.
- Standard molded socket format can accommodate any device package of 55mm square or smaller.
- The spring loaded, cam actuated Pressure Pad applies proper force against the device after the lid is closed, latched and the cam is rotated to it's detected location. Reversing the cam removes the force applied to the device prior to unlatching the spring loaded lid to it's upright position.

ORDERING INFORMATION

Consult Factory

GENERAL SPECIFICATIONS

- MUTUAL CAPACITANCE: 0.012pF
- MOLDED SOCKET COMPONENTS: UL 94V-0 PEEK and/or Ultem
- 1dB BANDWIDTH: to 18.5GHz (0.50mm pitch) (small probe) <3dB to 39.7GHz
- PIN SELF-INDUCTANCE: 0.59nH
- CONTACT RESISTANCE: <40 mΩ
- ESTIMATED CONTACT LIFE: 500,000 cycles
- COMPRESSION SPRING PROBES: heat-treated BeCu with 30µ [0.75µ] min. Au per Mil-G-45204 over 30µ [0.75µ] min. Ni per SAE AMS-QQ-N-290
- CONTACT FORCE : 6g per contact on 0.20-0.29mm pitch
  : 15g per contact on 0.30-0.35mm pitch
  : 16g per contact on 0.40-0.45mm pitch
  : 25g per contact on 0.50-0.75mm pitch
  : 25g per contact on 0.80mm pitch or larger
- OPERATING TEMPERATURE: -55°C [-67°F] min. to 150°C [302°F] max.
- ALL HARDWARE: Stainless Steel

MOUNTING CONSIDERATIONS

- See "PCB FOOTPRINT TOP VIEW" for requirements
- NOTE: Sockets must be handled with care when mounting or removing sockets to/from PCB
- TEST PCB MINIMUM DIAMETER "G": 0.025 [0.64] (large probe 0.80mm pitch and larger)
  : 0.015 [0.38] (small probe 0.50-0.75mm pitch)
  : 0.012 [0.31] (small probe 0.40-0.45mm pitch)
  : 0.009 [0.23] (small probe 0.30-0.35mm pitch)
  : 0.004 [0.10] (small probe 0.20-0.20mm pitch)
- TEST PCB DIAMETER SPRING PROBE PAD PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SEA AMS-QQ-N-290. Pad must be the same height as top surface of PCB. Please refer to the Custom Socket Drawing supplied by Aries after receipt of your order for your specific application.

A detailed device drawing must be sent to Aries to quote and design a socket.

See Data Sheet for...

CSP Sockets

23016 Hybrid Socket
23021 µBGA up to 6.5mm
23017 µBGA up to 13mm
23018 µBGA up to 27mm
23018-APP w/Adj Pressure Pad
23019 µBGA up to 40mm
23020 µBGA up to 55mm
23023 Optical Failure Analysis

RF Sockets

24013 RF up to 6.5mm
24008 RF up to 13mm
24009 RF up to 27mm
24009-APP w/Adj Pressure Pad
24011 RF up to 40mm
24010 RF Machined Socket
23022 Kelvin Test Socket

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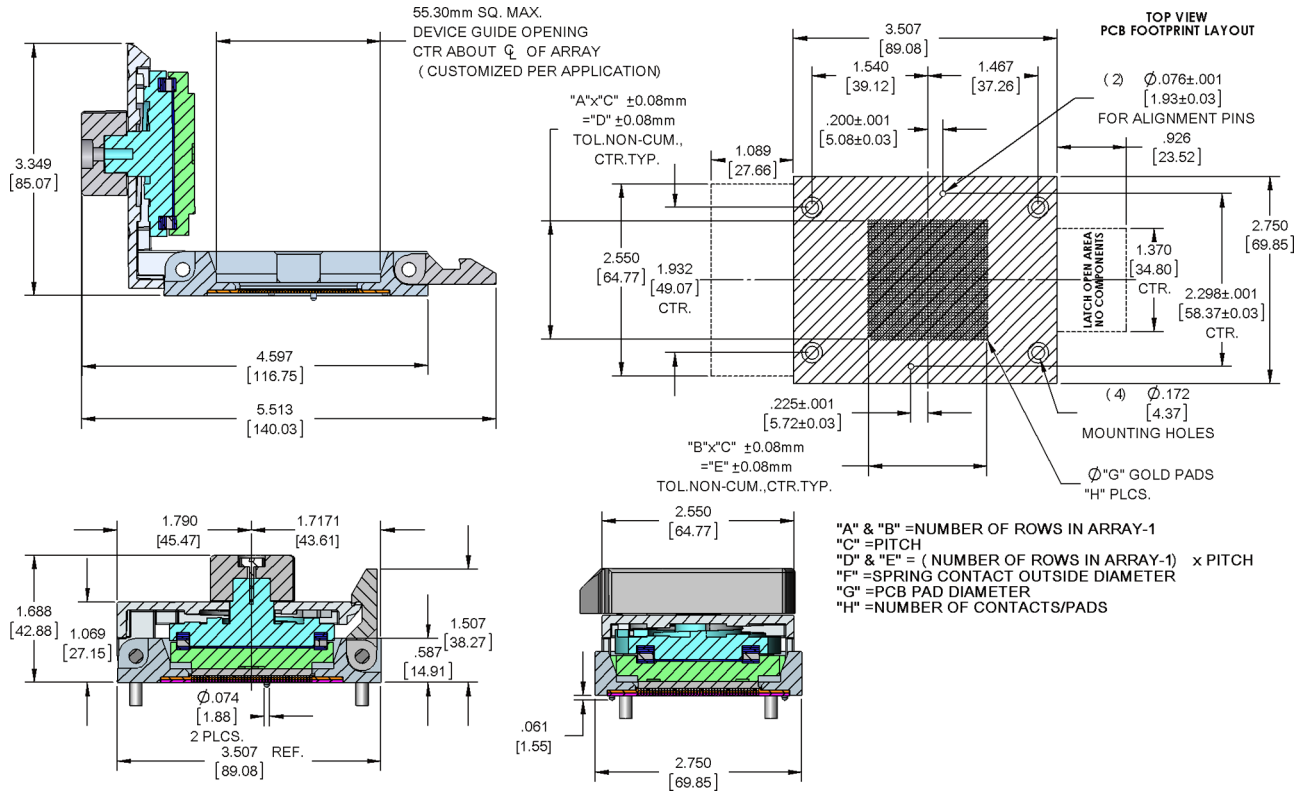
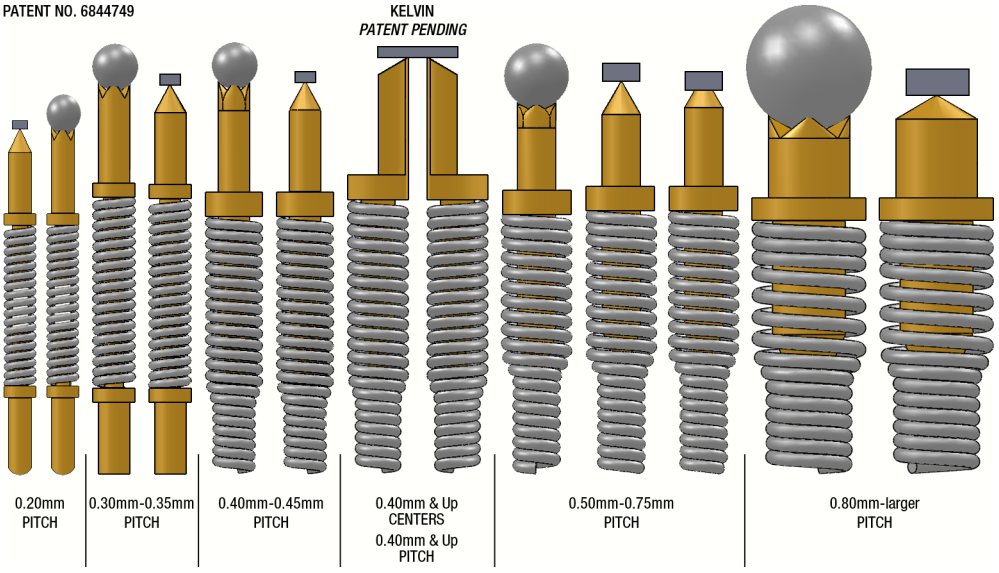
RoHS Compliant

High-Frequency Center Probe Test Socket for Devices up to 55mm Square





SPRING PROBES

ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED

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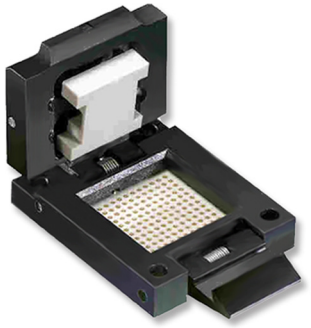
RoHS Compliant

Kelvin Test Socket

FEATURES



- LAries unique universal socketing system allows the socket to be easily configured for any package, on any pitch (or multiple pitch) from 0.2mm or greater, in any configuration, with little or no tooling charge or extra lead-time.
- For Test & Burn-In of CSP, µBGA, Bump-Array, QFN, QFP, MLF, DFN, SSOP, TSSOP, TSOP, SOP, SOIC, LGA, LCC, PLCC, TO and any SMT package style made. Also can be compatible with PGA packaged devices.
- Quick and easy **Probe Replacement System**: the complete set of probes can be removed and a new set (interposer) can be inserted quickly and easily. The old set can be returned to the factory for repair and sent back within one day.
- Low resistance testing using dual independent Aries Kelvin spring-probe technology per device pad for testing of MLF, QFN, LGA and other leadless devices.
- Socket is easily mounted and removed to & from the test board due to solderless pressure mount compression Spring-Probes which, are accurately located by two molded plastic alignment pins and mounted with four stainless steel screws.
- The Au over Ni-plated compression Spring-Probes leave very small witness marks on the bottom surface of the device pads.
- Small overall socket size/profile allows max. number of sockets per test board, while being operator-friendly.
- Kelvin Test Socket Contact System is available for any Aries CSP and Center Probe Test Sockets.
- Pressure pad compression spring provides proper force against device and allows for height variations in device thickness.
- Probe blade edge tip for cutting through solder oxide layers.
- Signal path during test only 0.082 [2.08].

ORDERING INFORMATION

Consult Facotry
For Quotation with
Details of Your Application

GENERAL SPECIFICATIONS

- MOLDED SOCKET COMPONENTS: UL 94V-0 Ultem
- MACHINED SOCKET COMPONENTS: UL 94V-0 PEEK or Torlon
- ALL HARDWARE: Stainless Steel
- COMPRESSION SPRING PROBE: heat-treated BeCu
- COMPRESSION SPRING PROBE PLATING: 50µ [1.27µ] min. Au per MIL-G-45204 over 50µ [1.27µ] min. Ni per SAE AMS-QQ-N-290
- DURABILITY: 500,000 cycles min.
- CONTACT FORCE : 16g/contact on 0.40-0.45mm pitch
- OPERATING TEMPERATURE: -55°C [-67°] min. to 150°C [302°] max.

MOUNTING CONSIDERATIONS

- See “PCB FOOTPRINT TOP VIEW” for requirements
- REQUIRES: four #2-56 screws and PEM nuts for mounting (not supplied – mounting holes size shown may differ depending on PEM nut selected)
- NOTE: Sockets must be handled with care when mounting or removing to/from test board to avoid damaging sensitive spring contacts
- TEST PCB DIAMETER “G” : 0.012 [0.31] (small probe 0.40-0.45mm pitch)
- TEST PCB DIAMETER SPRING PROBE PAD PLATING: 30µ [0.75µ] min. Au per MIL-G-45204 over 30µ [0.75µ] min. Ni per SEA AMS-QQ-N-290. Pad must be the same height as top surface of PCB. Please refer to the Custom Socket Drawing supplied by Aries after receipt of your order for your specific application.

A detailed device drawing must be sent to Aries to quote and design a socket.

See Data Sheet for...

CSP Sockets

23016 Hybrid Socket
23021 µBGA up to 6.5mm
23017 µBGA up to 13mm
23018 µBGA up to 27mm
23018-APP w/Adj Pressure Pad
23019 µBGA up to 40mm
23020 µBGA up to 55mm
23023 Optical Failure Analysis

RF Sockets

24013 RF up to 6.5mm
24008 RF up to 13mm
24009 RF up to 27mm
24009-APP w/Adj Pressure Pad
24011 RF up to 40mm
24012 RF up to 55mm
24010 RF Machined Socket

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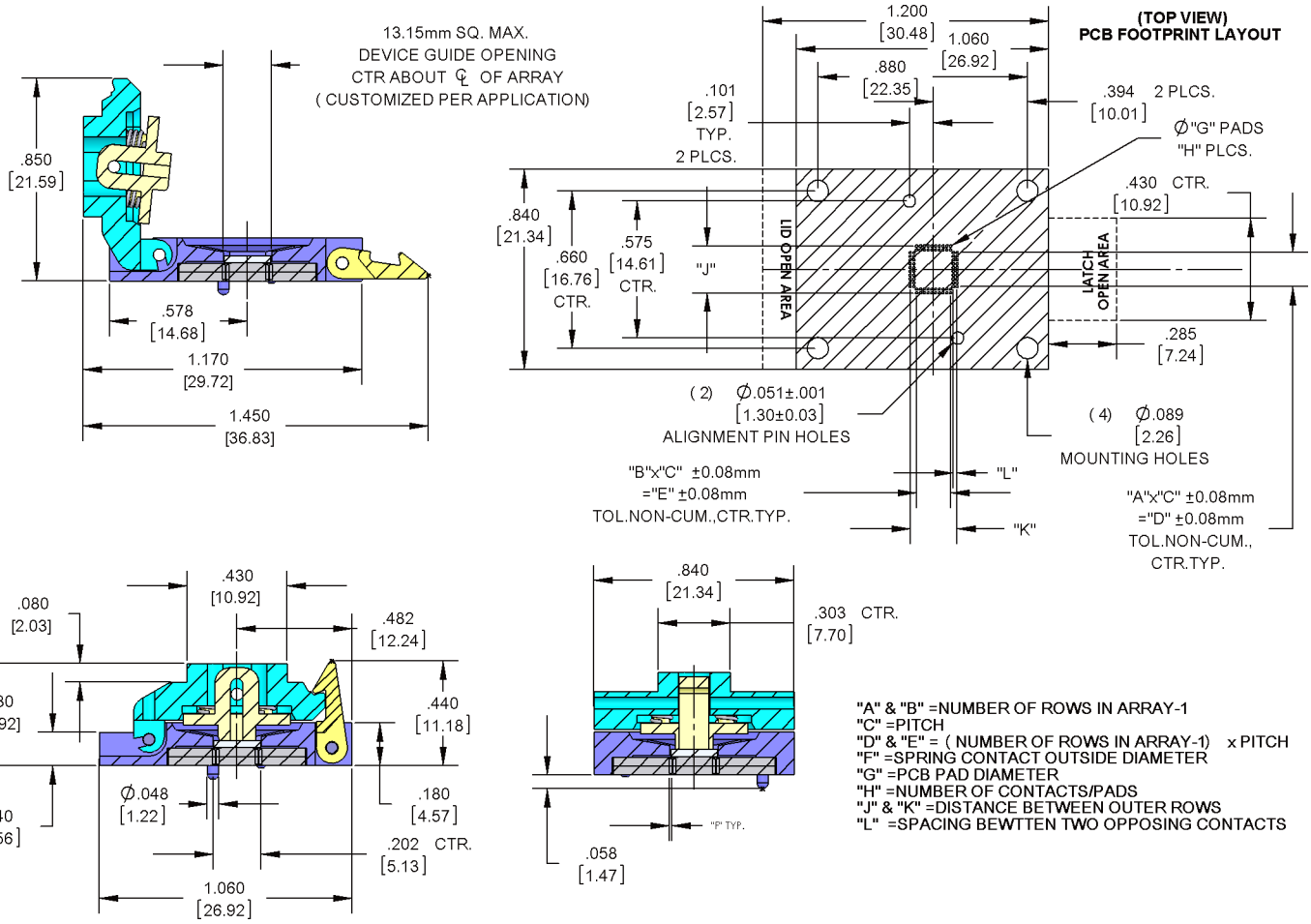
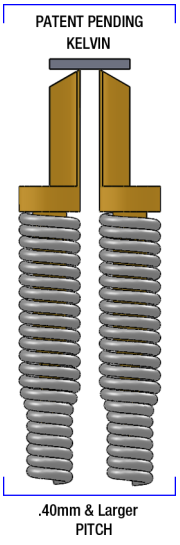
RoHS Compliant

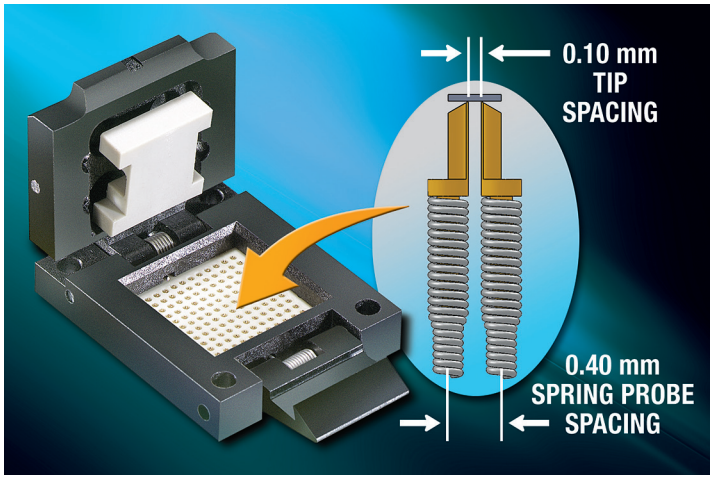
Kelvin Test Socket





.40mm & Larger PITCH

SPRING PROBES



ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ±0.005 [0.13] UNLESS OTHERWISE SPECIFIED

CUSTOMIZATION: In addition to the standard products shown on this page, Aries specializes in custom design and production. Special materials, platings, sizes, and configurations can be furnished, depending on the quantity. NOTE: Aries reserves the right to change product general specifications without notice.

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