



CSP Test Socket for Optical Laser Failure Analysis w/Emission Microscopy*

Available with or without filters for UV, infrared and full spectrum applications, this optical test socket is ideal for testing an optical sensor type chip and for EMMI testing a standard chip using an infrared head sensor. The optical test socket line can accommodate many different optical window and lens materials, including glass, sapphire, and plastic depending on operational requirements. The standard optical grade window on the 23023 socket uses a high-quality quartz V077 glass with a 98% transmission rate from <260nm in the UV to >2000nm in the infrared.

FEATURES

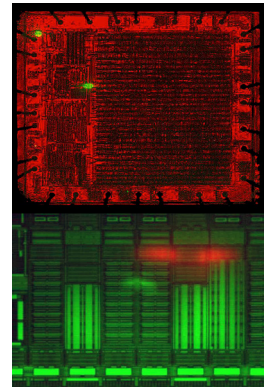
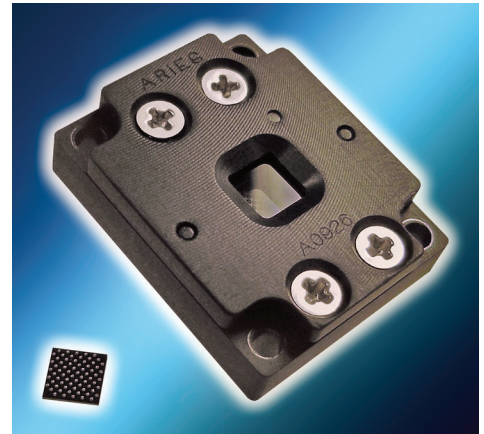
- Aries unique universal socketing system allows the socket to be easily configured for any package, on any pitch (or multiple pitch) from 0.2mm or greater, in any configuration, with little or no tooling charge or extra lead-time.
- For Test & Burn-In of CSP, μ BGA, Bump-Array, QFN, QFP, MLF, DFN, SSOP, 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 lid nests device into socket for a reliable connection.
- ZIF style socket using Aries solderless, Au-plated pressure mount Spring-Probe.
- Special lid designs and/or materials can be quoted.
- Socket easily located, mounted & removed from PCB.
- Signal path during test only 0.077 [1.96].
- Available with Spring-Probes or Kapton Elastomer Interposer.
- 4-point crown insures "scrub" on solder oxides. Consult factory for other available probe styles.
- The Au over Ni-plated compression Spring-Probes leave very small witness marks on the bottom surface of the device solder balls.

GENERAL SPECIFICATIONS

- BODY MATERIAL: Ultem® or Torlon®
- 1dB BANDWIDTH: 1GHz (0.80mm pitch) (large probe)
- ESTIMATED CONTACT LIFE: 500,000 cycles
- COMPRESSION SPRING PROBES: heat-treated BeCu with 30 μ [0.75 μ] min. Au per MIL-G-45204 over 30 μ [0.75 μ] 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
- SCREWS AND ALIGNMENT PINS: Stainless Steel
- INSERTS: Brass per QQ-B-626
- OPERATING TEMPERATURE RANGE: -55°C to 150°C [-67° to 302°]

MOUNTING CONSIDERATIONS

- NOTE: Sockets must be handled with care when mounting or removing sockets to/from PCB
- TEST PCB MINIMUM DIAMETER "P" : 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 & KIP PLATING: 30 μ [0.75 μ] min. Au per MIL-G-45204 over 30 μ [0.75 μ] 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.



EMMI images showing light emission from failed devices at several locations (front side top)

ORDERING INFORMATION

Consult Factory

CLEANING, HANDLING, MOUNTING & PROBE REPLACEMENT INFO

Need a Breakout Board?

[SPECIAL THERMAL REQUIREMENT WORKSHEET](#)



ARIES
ELECTRONICS, INC.

Bristol, PA 19007-6810 USA
TEL (215) 781-9956 • FAX (215) 781-9845
WWW.ARIESELEC.COM • INFO@ARIESELEC.COM



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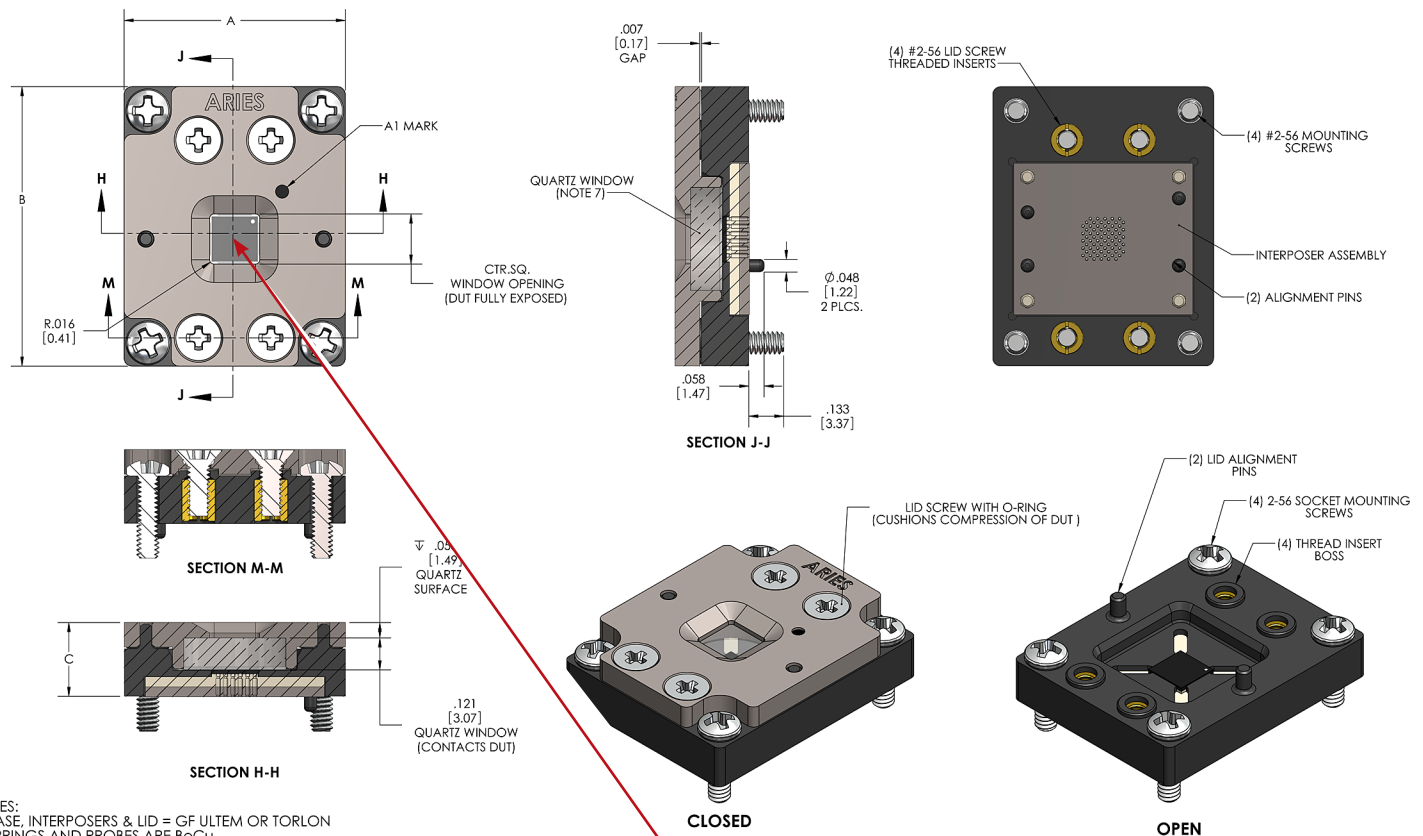
ALL DIMENSIONS: INCHES [MILLIMETERS]

ALL TOLERANCES: ± 0.005 [0.13] UNLESS OTHERWISE SPECIFIED

CONSULT FACTORY for DIM. "A" - "K"

CONSULT FACTORY FOR OTHER SIZES AND CONFIGURATIONS

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.



- NOTES:
1. BASE, INTERPOSERS & LID = GF ULTEM OR TORLON
 2. SPRINGS AND PROBES ARE BeCu
 3. SPRING & PROBE PLATING IS 30u" GOLD OVER 30u" NICKEL
 4. SCREWS AND HARDWARE ARE 18-8 STAINLESS STEEL
 5. HOLES FOR SOCKET ALIGNMENT PINS
 6. SOCKETS MUST BE HANDLED WITH CARE TO AVOID DAMAGE TO SPRING PROBES DURING HANDLING AND MOUNTING.
 7. OPTICAL GRADE WINDOW

FULL-ARRAY SHOWN AS AN EXAMPLE; YOUR SPECIFIC DEVICE PATTERN/FOOTPRINT WILL BE SUPPLIED WHEN ORDERED.

* Emission Microscopy (EMMI) is a powerful early-stage noninvasive failure analysis technique localizing failures and requiring little sample preparation. Flip-chip devices, difficult to study by other means, are easily studied through the die without decapsulation and often without thinning, making it an efficient optical analysis technique that will detect and localize certain integrated circuit failures. It can be performed from either the front or back sides of devices.



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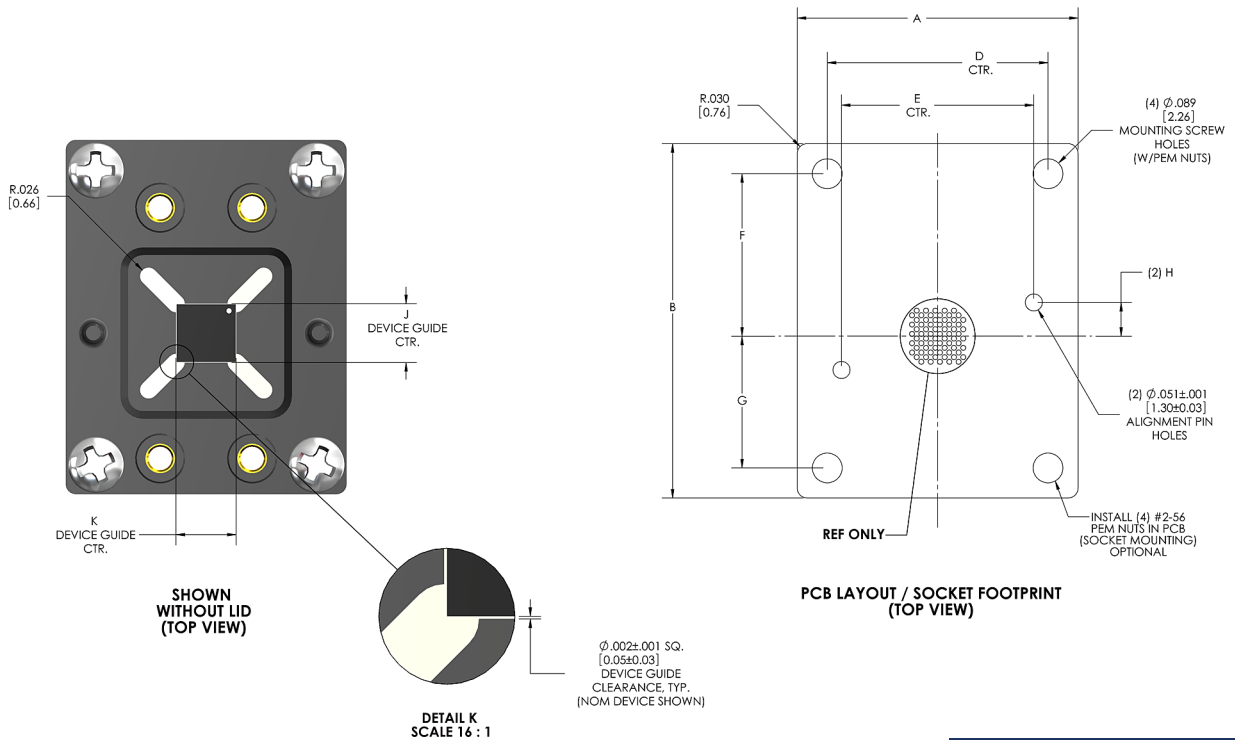


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A detailed device drawing must be sent to Aries to quote and design a socket.

See Data Sheet for...

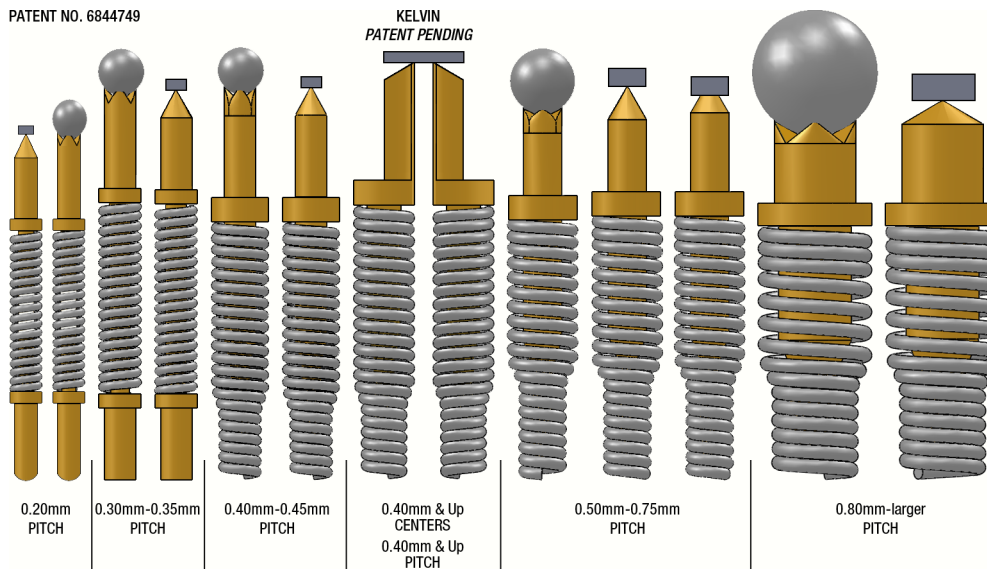
CSP Sockets

- 23016** Hybrid Socket
- 23021** μ BGA up to 6.5mm
- 23017** μ BGA up to 13mm
- 23018** μ BGA up to 27mm
- 23018-APP** w/Adj Pressure Pad
- 23019** μ BGA up to 40mm
- 23020** μ BGA up to 55mm

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
- 23022** Kelvin Test Socket

PATENT NO. 6844749



SPRING PROBES



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