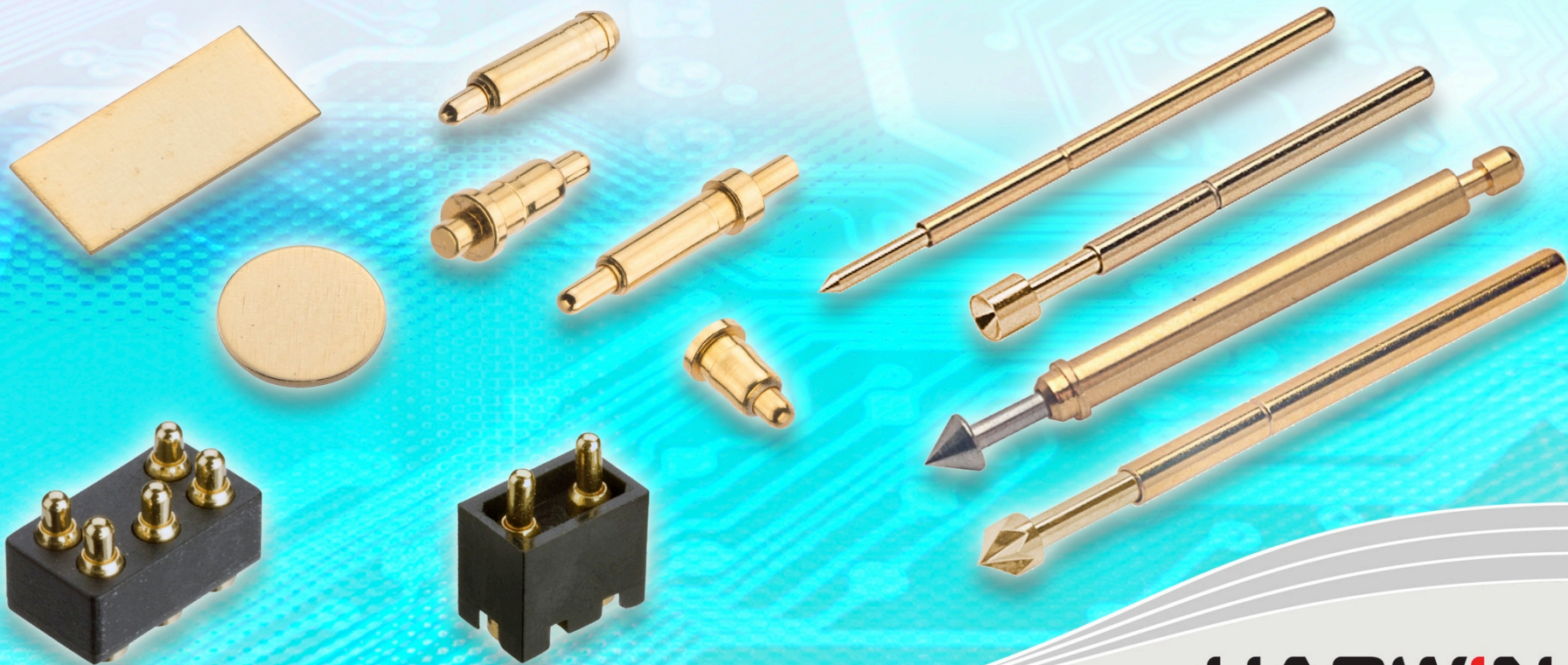


Spring Loaded Contacts and Connectors



Spring Probes – ATE Test Probes

Slim probes for automated testing



HARWIN

Harwin supply a variety of [Spring Probes](#), suitable for use on manual test jigs and automatic test equipment (ATE) to enable the fast testing of multiple points on a PCB or sub-assembly. These probes are inserted into a flat plate in a suitable array formation (sometimes known as a “bed-of-nails” arrangement), and the jig can then be applied to the PCB undergoing testing. Without further movement, all the required sensor readings can then be taken.

Spring Probes – ATE Test Probes

Choice of single piece or replaceable designs

Two Piece - Probe



One Piece



Two Piece - Sleeve



HARWIN

- One piece spring probes are ready to assemble to the test jig. The probe is inserted into the panel (up to the shoulder) and soldered or glued to the panel. A wire can be wound and soldered to the end of the probe for electrical connection.
- Two piece designs comprise a spring probe and a retaining sleeve/receptacle. The sleeve is fixed into the panel (the protruding bump is an interference fit for retention), and a wire is attached to the end of the sleeve for electrical connections. The probe is then pushed into the sleeve. Once the probe wears out, it can be removed and replaced without moving the sleeve.

Spring Probes – ATE Test Probes

Probe Variations



HARWIN

Various options are available within the probe range:

- Body/Sleeve diameter (affects how close the probes can be mounted to each other);
- Styles of probe head – different heads are suitable for testing different surfaces and how much penetration is required;
- Travel – distance that the probe head will travel relative to the body.

The best choice for every customer is very much application-dependent.

Spring Probes – ATE Test Probes

What is the performance rating?

Current Rating	One Piece = 2A Other = 3A
Durability	100,000 or 1,000,000 mating cycles
Temperature Range	-40°C to +85°C

HARWIN

Spring forces, travel and minimum pitch distance for each probe are listed on the individual [Technical Drawing](#). Probe heads and bodies are gold plated to ensure long-term durability is maintained (except [P1113SS3](#), which is hard-wearing Nickel plated on the probe head).

Spring Probes – ATE Test Probes

Markets



Typical usage of an ATE test probe array is in production environments, where every single PCB manufactured is high-value, safety mission-critical, and 100% testing is considered necessary.

- Aerospace
- Transportation
- Medical
- Military
- Energy installations

Miniature Spring Loaded Contact Connectors

Compact and lightweight



HARWIN

□ Our Miniature Spring Loaded Connector range was originally designed for the clamshell mobile phone industry. These Surface Mount connectors come in 2, 3, 4 or 5 contact options. With the assistance of the surrounding equipment design, the spring contacts will maintain a positive force against a mating surface, with a low mating force enabling rapid and effortless connections. These connectors mate with any contact surface, and tolerate significant lateral mating misalignment.

Miniature Spring Loaded Contact Connectors

The heart of the connector



HARWIN

The contact design is based on a series of “Pogo pins”, short spring contacts with an integrated coil spring. This connection type is a surface-to-surface connection, maintained by the spring force. The connector system would be held together against the spring force by other systems built into the equipment itself, such as locking toggles or sprung hinges.

Miniature Spring Loaded Contact Connectors

Tape and Reeled for **auto-placement**



HARWIN

□ All options come on Tape & Reel packaging as standard. The 2, 3 and 4-contact versions have removable, disposable pick-and-place caps; the 5-contact version has a flat area built in for vacuum pick-and-place. The 3-and 4-contact versions also have location pegs to assist with the Surface Mount placement, making the complete range ideal for automated connector assembly systems.

Miniature Spring Loaded Contacts

Pogo Pins in a variety of sizes



HARWIN

□ If the requirement is for a single contact, or alternative spacing to the Spring Loaded Connectors, then Harwin also supply a range of individual Spring Loaded Contacts – also known as Pogo Pins. As with the connectors, these spring contacts will maintain a positive force against a mating surface, with a low mating force enabling rapid and effortless connections. These contacts mate with any conductive surface, and also tolerate significant lateral mating misalignment.

Miniature Spring Loaded Contacts

With or Without Location pegs

With pegs



Without pegs



HARWIN

Pogo pins are available in two styles, with a variety of free heights:

- Surface Mount without location pegs – flat bottom surface. Free heights from 2.4mm to 7.3mm.
- Throughboard PC Tail or Surface Mount with location pegs – can be used in either configuration, at the customer's own choice. Free heights from 2.4mm to 7.3mm.

Miniature Spring Loaded Contacts & Connectors

What is the performance rating?

Current Rating	1A or 2A max
Durability	10,000 mating cycles
Temperature Range	-40°C to +85°C

HARWIN

The electrical and mechanical performance of these contacts varies with the number of pins, please see the performance characteristics listed on the relevant [Technical Drawing](#) for the product. Contacts are gold plated to ensure long-term durability is maintained.

Surface Mount **Contact Pads**

Simple **hard-wearing** contacts



HARWIN

The **SMT Contact Pads** are simple flat metal contacts, designed to be placed on a PCB as a hard-wearing contact surface to mate with any spring loaded contacts, spring loaded connectors, or stamped spring contacts. They are available on 3 contact shapes: Circular, Rectangular, or Oval (more accurately, obround). Contact thicknesses range from 0.1mm to 0.5mm, and are all gold plated to ensure long-term durability.

Miniature Spring Loaded Contacts & Connectors

Markets




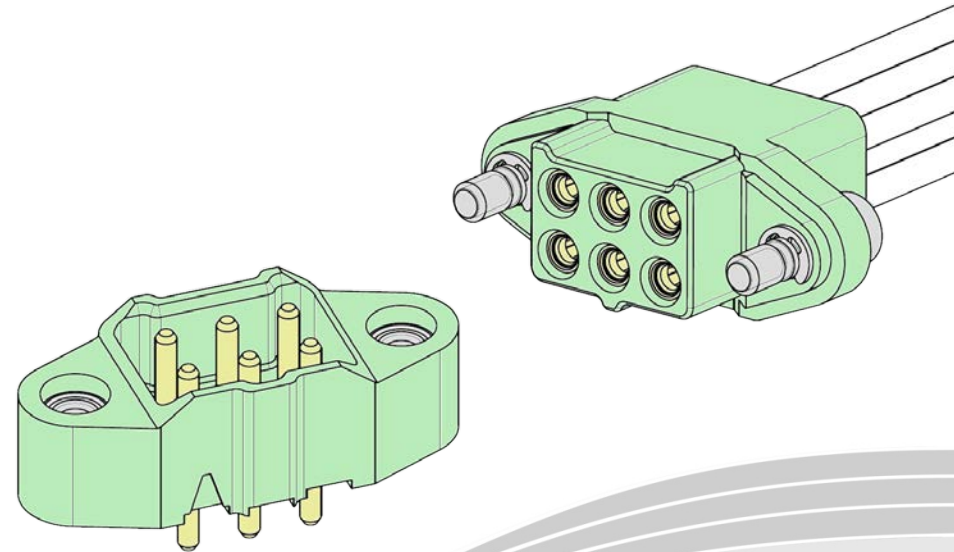
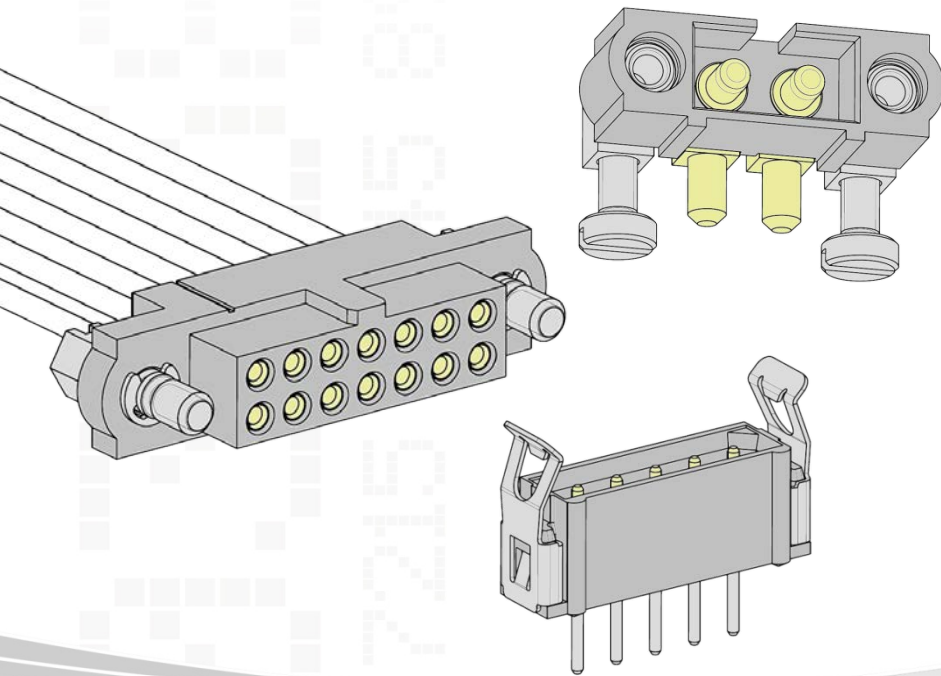
These spring contacts, originally developed for the clamshell mobile phone, are ideally suited for all applications in the portable, mobile and wearable applications. Lightweight, compact and hard-wearing, they can be incorporated into devices for both data transmission and battery charging.

- Mobile electronics
- POS Tracking
- Wearable devices
- Home Entertainment
- Medical

If you like this product, try...

Datamate - 2.00mm Pitch

 **M300** - 3.00mm Pitch



HARWIN

- 3A per signal, up to 40A per power contact
- Jackscrew or latching system for strain relief
- Resists Vibration to 10G and Shock to 100G
- Temperature range -55 deg C to +125 deg C
- PCB connectors in Throughboard or SMT, Cable options

- Up to 10A per contact
- Jackscrew fixing system for strain relief
- Resists Vibration to 10G and Shock to 100G
- Temperature range -65 deg C to +175 deg C
- Vertical and Cable options

Happy to Help

Contact our product support team

✦ **Live Help**



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Contact our technical support team

✦ **Email us**

