PCB Sockets

HARWiN

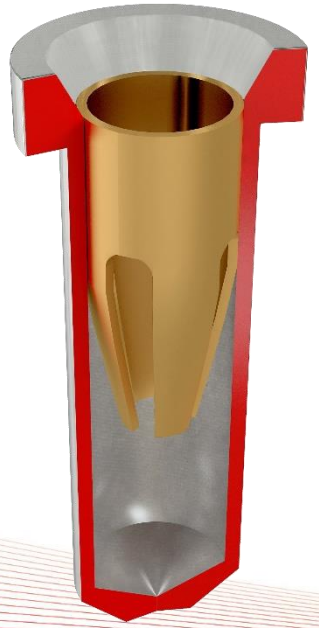
PCB Sockets

Single PCB connections

There are many electronics devices and modules that are replaceable – by soldering these products directly to the PCB, the life of the board is limited. By using a PCB socket for the board connections, the product becomes fully repairable. In some cases, a device may be too temperature sensitive – the use of a PCB socket can eliminate the soldering temperature exposure. PCB Sockets are ideal for odd-form components, which do not fit in a regularly-spaced socket strip. As individual connections, they can also provide connectivity when just one signal or power connection is required.

High Reliability Turned PCB Sockets

Four finger Beryllium Copper contact



The construction of the turned body PCB socket uses the same technology as the High-Reliability connectors in the Harwin range (Datamate and M300). A Four-finger Beryllium Copper clip is mounted in a turned Brass shell. This four-finger clip design gives excellent performance under shock and vibration in all 3 axes. Current ratings are also excellent, and mating cycle durability exceeds 500 operations.

High Reliability Turned PCB Sockets

Metric mating pin sizes

Turned PCB sockets are available in 4 mating pin sizes:

- Ø0.5mm – also known as Sub-Miniature, compatible with pin sizes Ø0.46 to 0.51mm.
- Ø0.8mm – compatible with pin sizes Ø0.60 to 0.85mm.
- Ø1mm – compatible with pin sizes Ø0.90 to 1.05mm.
- Ø2mm – compatible with pin sizes Ø2.00 to 2.30mm.

High Reliability Turned PCB Sockets

Retention methods

Clearance fit

Knurled

- Clearance fit – the smooth-shelled contact is the most common design – it is assembled through the PCB and soldered on the underside of the board.
- Knurl – for added mechanical strength before and during soldering, on Ø0.8mm and Ø1mm socket designs.

High Reliability Turned PCB Sockets

Socket End termination methods

Closed

Open

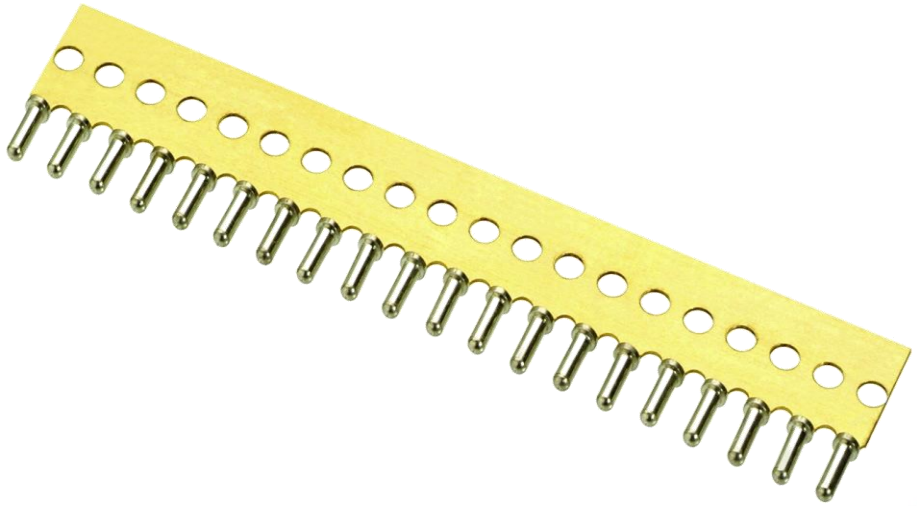
Wire Wrap

Closed shells are the easiest to solder, and therefore the most common, as there is no solder ingress during wave soldering processes. However, the maximum pin length is constrained by the end wall. Open sockets are also available in the Ø1mm socket designs, for use with longer mating pins. Soldering methods will need to be considered carefully with this design.

For older designs, a wire-wrap option is available in the Ø0.5mm and Ø1mm socket ranges.

High Reliability Turned PCB Sockets

Alternative Packaging option for Sub-miniature sockets



Generally, sockets are provided loose packed. However, to assist with the small size, the Ø0.5mm sockets (Sub-miniature) are also supplied on a metal comb carrier strip, for semi-automated or assembly in rows, on a pitch of 2.54mm.

- D01-979 (with H3192 sockets)
- D01-982 (with H3191 sockets)
- D01-984 (with H3155 sockets)
- D01-990 (with H3153 sockets)

High Reliability Turned PCB Sockets

Electrical & Mechanical Specifications

Current Rating	Ø0.5mm = 2A Ø1mm = 10A	Ø0.8mm = 10A Ø2mm = 20A
Contact Resistance	25mΩ max	
Durability (min. no. of mating cycles)	Ø0.5mm = 500 Ø1mm = 1000	Ø0.8mm = 1000 Ø2mm = 500

Component Specifications are given in more detail on individual connector Technical Drawings, available to download from any individual product page. There are also Component Specifications available for the Ø0.5mm, Ø0.8mm, Ø1mm and Ø2mm socket ranges.

High Reliability Turned PCB Sockets

Environmental Specifications

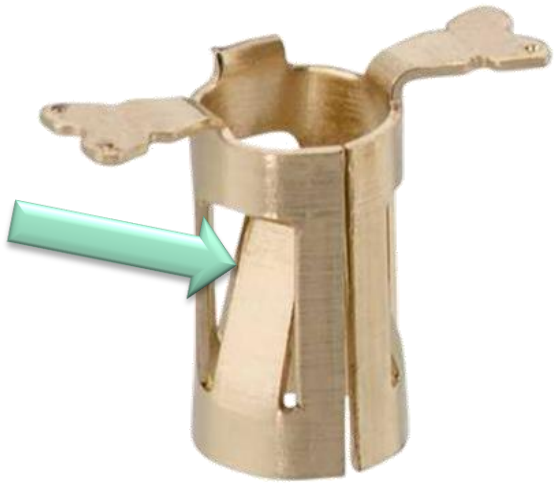
Temperature Range	-55°C to +125°C
Vibration	10g – 6 hours
Soldering Heat Resistance	260°C for 10 seconds

The use of the Beryllium Copper Clip gives the PCB sockets the same High Reliability performance as the Datamate and M300 products.

SYCAMORE Contact SMT PCB Sockets

High Reliability, Design flexibility

Bottom Entry



Top Entry

Previous designs of SMT contacts have only included 2 points of contact to the mating pin, making them potentially vulnerable to vibration. The SYCAMORE Contact patent-pending design incorporates 3 points of contact for improved continuous signal integrity.

Sockets are also manufactured from Beryllium Copper for increased temperature range and increased durability (number of mating cycles), and gold-plated for improved wear resistance. Ultra-Low profile – see the Sycamore Contact PTM for more information.

SYCAMORE Contact SMT PCB Sockets

Specification Highlights

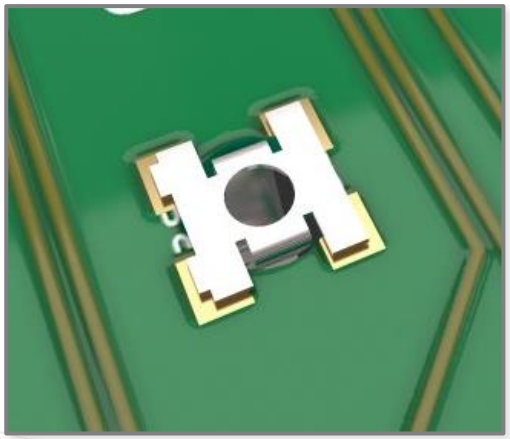
Current Rating	6A max
Temperature Range	-50°C to +125°C
Durability (min. no. of mating cycles)	500

The SYCAMORE Contact is available in 4 designs – two entry types, two mating pin sizes, all Tape and Reeled packaging:

- S9111-45R – Top entry design, suitable for Ø1.50 to Ø1.90mm mating pins.
- S9121-45R – Bottom entry design, suitable for Ø1.50 to Ø1.90mm mating pins.
- S9131-45R – Top entry design, suitable for Ø0.80 to Ø1.30mm mating pins.
- S9141-45R – Bottom entry design, suitable for Ø0.80 to Ø1.30mm mating pins.

SMT PCB Sockets (Twin-Beam)

Wide mating pin range



The Sockets range includes the original SMT PCB Sockets, a stamped ultra-low profile twin beam exposed socket, supplied in Tape and Reel for automated Surface Mount processes. The range currently includes 2 sizes:

- S9101-46R – accommodates mating pins Ø1.1-1.8mm, or 1.1-1.4mm square.
- S9091-46R – accommodates mating pins Ø0.8-1.5mm, or 0.8-1.5mm square, and can be placed on a 2.54mm pitch spacing.

SMT PCB Sockets (Twin-Beam)

Specification Highlights

Current Rating	S9101-46R = 9A S9091-46R = 5A
Temperature Range	-40°C to +105°C
Durability (min. no. of mating cycles)	S9101-46R = 100 S9091-46R = 25

Component Specifications are given in more detail on individual connector Technical Drawings, available to download from any individual product page.

Test PCB Sockets

Use with Ø2.03mm Test Probe

The Test Socket from Harwin is a horizontal, dual-entry socket, compatible with Ø2.03 test probes and other Ø2.00mm mating pins. It has a low profile height of 5.1mm above the PCB.

- The PC Throughboard Tail M3498-XX comes in white, red or black housings for circuit colour coding.
- M3497-98 is the Surface Mount version with a built-in pick and place area and black housing. It is available in either loose or Tape and Reel, for automated assembly.

Test PCB Sockets

Specification Highlights

Current Rating	5A
Voltage Rating	1,500V AC/DC
Durability	100 mating operations
Temperature Range	-40°C to +105°C

The Phosphor Bronze contact gives durability and reliability for multiple mating cycles. Component Specifications are given in more detail on individual connector Technical Drawings, available to download from any individual product page.

PCB Sockets

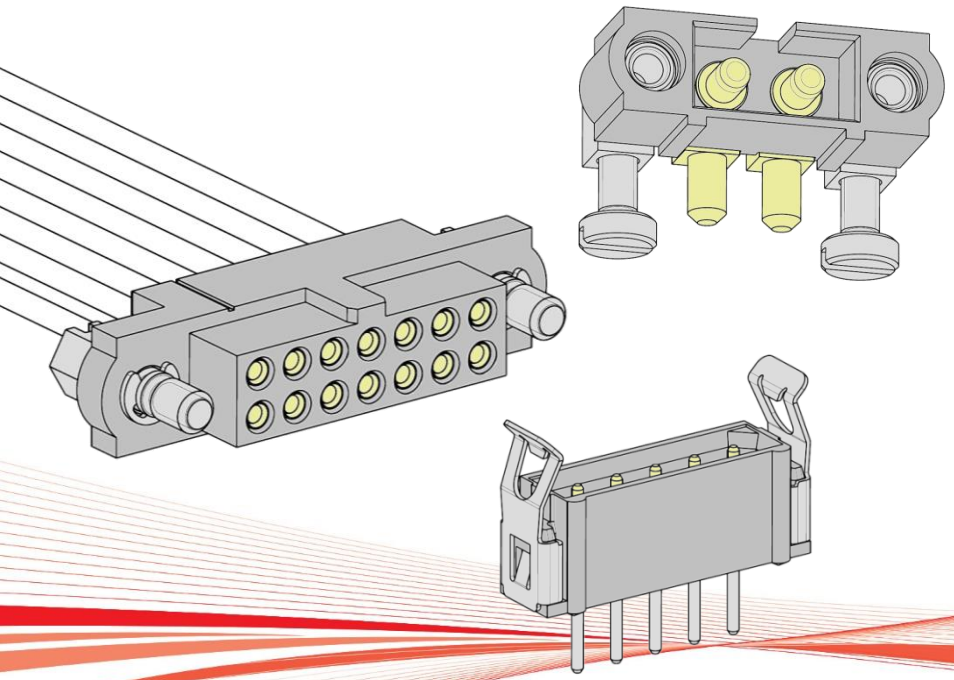
Markets

The requirement for single connections or high-reliability odd-form modules can appear in any application, and the Socket range from Harwin has the variety required to meet these needs.

- Aerospace
- Medical
- Field Comms
- Robotics
- Fire and Security

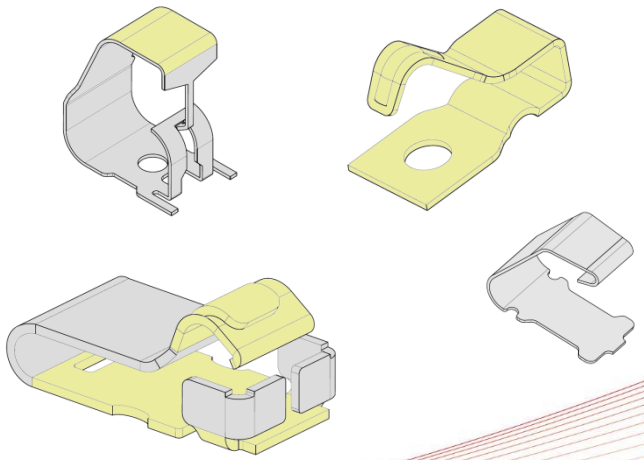
If you like this product, try...

Datamate - 2.00mm Pitch



- 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°C to +125°C
- PCB connectors in Throughboard or SMT, Cable options

SMT Spring Contacts



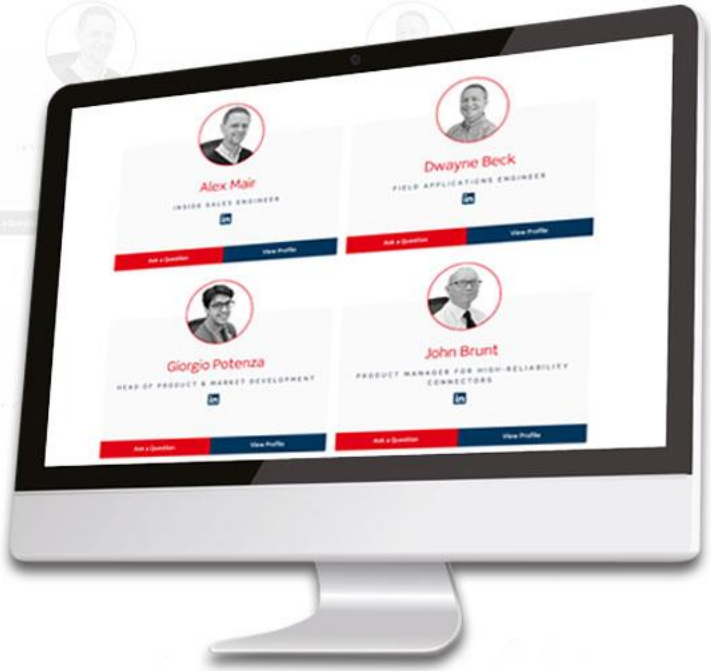
- 30 different styles, all Surface Mount
- Heights from 1.23mm to 7.25mm
- Suitable for signal, grounding, antenna contacts.
- Right-angle option available

Get Help from a Harwin Expert

Our experts are specialists in their field with many years of experience in their respective roles and industries.

Find an expert that can help you with your enquiry.

Click Here >>



CAD Models and Evaluation Samples also available at www.harwin.com

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