

**Ezi**  
RANGE

**HARWIN**

**SOCKETS**



# 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.

## SOCKETS

### HI-REL TURNED PCB SOCKETS – 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.

## SOCKETS

### HI-REL TURNED PCB SOCKETS – METRIC MATING PIN SIZES



Turned PCB sockets are available in 4 mating pin sizes:

- $\text{Ø}0.5\text{mm}$  – also known as Sub-Miniature, compatible with pin sizes  $\text{Ø}0.46$  to  $0.51\text{mm}$ .
- $\text{Ø}0.8\text{mm}$  – compatible with pin sizes  $\text{Ø}0.60$  to  $0.85\text{mm}$ .
- $\text{Ø}1\text{mm}$  – compatible with pin sizes  $\text{Ø}0.90$  to  $1.05\text{mm}$ .
- $\text{Ø}2\text{mm}$  – compatible with pin sizes  $\text{Ø}2.00$  to  $2.30\text{mm}$ .

# SOCKETS

## HI-REL TURNED PCB SOCKETS – PCB 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.

# SOCKETS

## HI-REL TURNED PCB SOCKETS – TERMINATION STYLES



Closed



Open

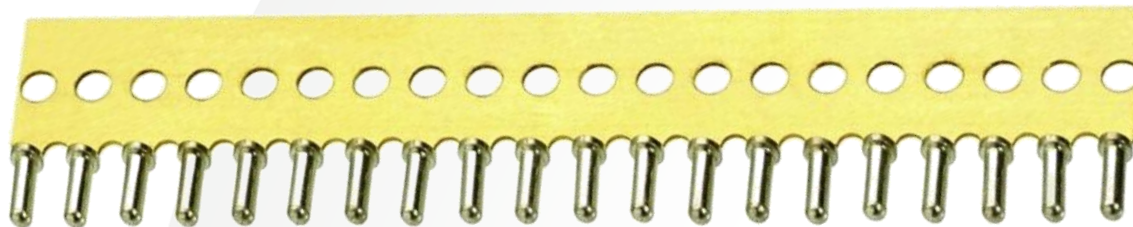


Wire Wrap

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.

## HI-REL TURNED PCB SOCKETS –PACKAGING OPTION FOR SUB-MINIATURE SOCKETS



Generally, sockets are provided loose packed. However, to assist with the small size, the  $\varnothing 0.5\text{mm}$  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)

## HI-REL TURNED PCB SOCKETS – ELECTRICAL & MECHANICAL SPECIFICATIONS

Current Rating	$\varnothing 0.5\text{mm} = \mathbf{2A}$ $\varnothing 0.8\text{mm} = \mathbf{10A}$ $\varnothing 1\text{mm} = \mathbf{10A}$ $\varnothing 2\text{mm} = \mathbf{20A}$
Contact Resistance	<b>25m<math>\Omega</math></b> max
Durability (min. no. of mating cycles)	$\varnothing 0.5\text{mm} = \mathbf{500}$ $\varnothing 0.8\text{mm} = \mathbf{1,000}$ $\varnothing 1\text{mm} = \mathbf{1,000}$ $\varnothing 2\text{mm} = \mathbf{500}$

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.



## HI-REL TURNED PCB SOCKETS – ENVIRONMENTAL SPECIFICATIONS

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

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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



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 – SPECIFICATIONS

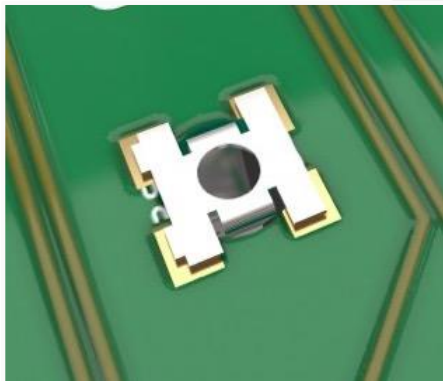
Current Rating	<b>6A</b> max (3.87mm body length) <b>8A</b> max (5.87mm body length)
Temperature Range	<b>-50°C to +125°C</b>
Durability (min. no. of mating cycles)	<b>500</b>

The Sycamore Contact is available in 6 designs – two entry types, two mating pin sizes, two body lengths:

- [S9111-45R](#) – Top entry, Ø1.5-1.9mm mating pin, 3.87mm body length
- [S9121-45R](#) – Bottom entry, Ø1.5-Ø1.9mm mating pin, 3.87mm length
- [S9131-45R](#) – Top entry, Ø0.8-Ø1.3mm mating pin, 3.87mm length
- [S9141-45R](#) – Bottom entry, Ø0.8-Ø1.3mm mating pin, 3.87mm length
- [S9321-45R](#) – Bottom entry, Ø1.5-Ø1.9mm mating pin, 5.87mm length
- [S9341-45R](#) – Bottom entry, Ø0.8-Ø1.3mm mating pin, 5.87mm length

## SOCKETS

### 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  $\varnothing$ 1.1-1.8mm, or 1.1-1.4mm square.
- [S9091-46R](#) – accommodates mating pins  $\varnothing$ 0.8-1.5mm, or 0.8-1.5mm square, and can be placed on a 2.54mm pitch spacing.

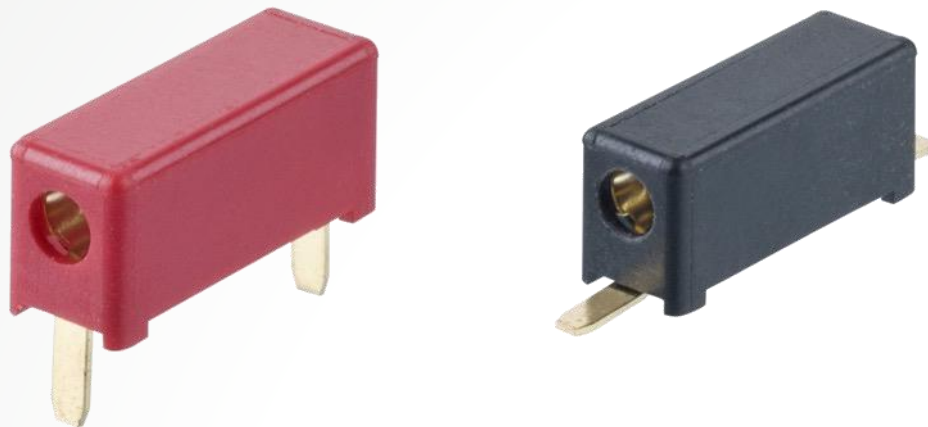
## SMT PCB SOCKETS (TWIN BEAM) – SPECIFICATIONS

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

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

## SOCKETS

### 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.
- [M3497-98R](#) is the Surface Mount version with a built-in pick and place area and black housing. It is available in Tape and Reel, for automated assembly.

## TEST PCB SOCKETS – SPECIFICATIONS

Current Rating	<b>5A</b>
Temperature Range	<b>1,500V AC/DC</b>
Durability (min. no. of mating cycles)	<b>100</b> 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.

## MARKETS



Almost all markets have a requirement for Spring Contacts - they provide a low-cost, electrically sound and easy-to-use solution, equally capable for power, signal or grounding applications. Their small size makes them ideal for portable devices as well as larger electronic applications.

- Mobile devices
- POS Tracking
- Mobile Antennas
- Home Entertainment
- Instrument Panels



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