

Working with JST Part Numbers

Example: SH Series



SH series details – crimp contact

SSH-003T-P0.2-H

- ◆ **S** = Strip terminal / Chain terminal
 - The contacts are packaged in a reel for automatic crimping equipment. JST does not sell these loose.
 - A prefix of “MINI-” would indicate the contact is placed on a mini-reel for use with hand-held crimp tooling.
 - Contacts prefixed with (B) are made, and typically exclusively sold, in Belgium.
- ◆ **SH** = Series name or series relationship identifier.
 - These are compatible with the SHD series as well.
- ◆ **003** = Applicable AWG (American Wire Gauge) range
 - 002 = AWG #26 ~ 30
 - 003 = AWG #28 ~ 32
 - 005 = AWG #36 ~ 40
 - ◆ Note: Each wire change requires a different crimp tool.

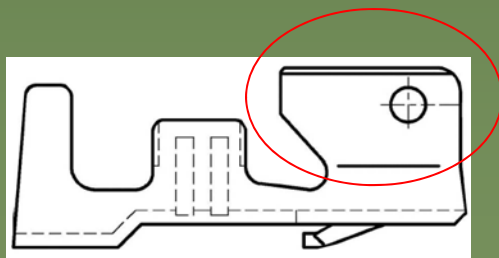
SH series details – crimp contact

SSH-003 T-P 0.2-H

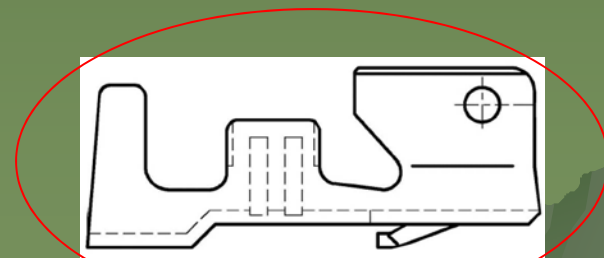
◆ T = Plating indicator

- T = Tin-plating overall
- GA = Flash [about 0.05 microns (2 micro-inches)] of gold-plating on the mating area only with bare material on the rest.
- GI = About 0.8 microns (32 micro-inches) of gold-plating on the mating area only with bare material on the rest.
- GU = About 0.4 microns (15 micro-inches) of overall gold-plating.

◆ Note: Gold should not be mated to tin.



Mating area only

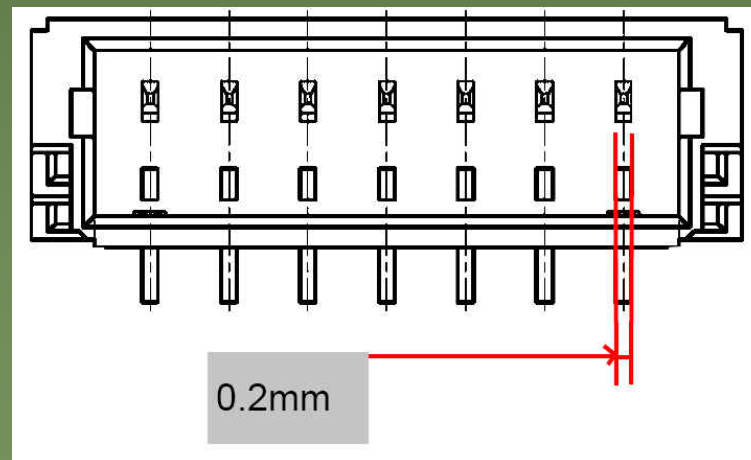


Overall

SH series details – crimp contact

SSH-003T-P0.2-H

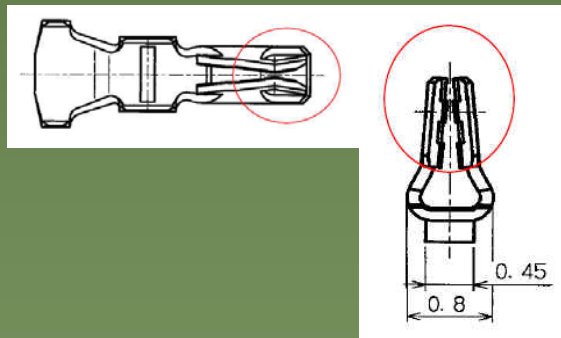
- ◆ P = Material indicator
 - P = Phosphor Bronze (default)
- ◆ 0.2 = Maximum mating post / pin width
 - 0.2 = 0.2mm



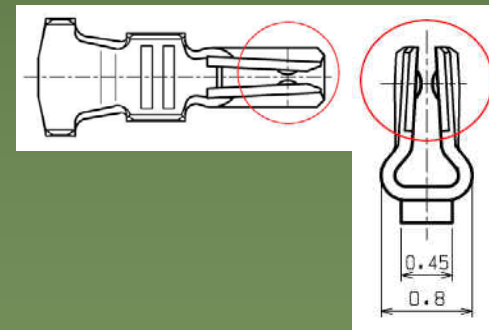
SH series details – crimp contact

SSH-003T-P0.2-H

- ◆ H = High pressure / Insertion force
 - With “-H” = High-pressure contact type for a more assured connection with the mating post and to help prevent deformation of the crimped contact.
 - Without “-H” = Standard contact insertion force.



Without “-H” suffix

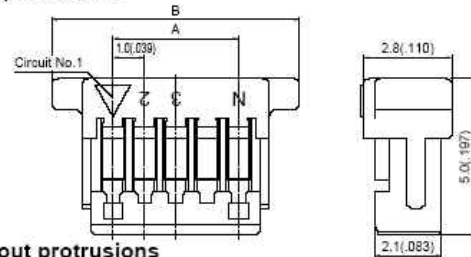


With “-H” suffix

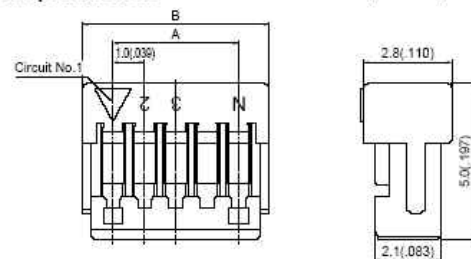
SH Series details – housing

Housing

With protrusions



Without protrusions



Circuits	Model No.		Dimensions mm(in.)			Q'ty / box
	With protrusions	Without protrusions	A	B		
			With protrusions	Without protrusions		
2	SHR-02V-S-B	SHR-02V-S	1.0(.039)	5.0(.197)	3.0(.118)	2,000
3	SHR-03V-S-B	SHR-03V-S	2.0(.079)	6.0(.236)	4.0(.157)	2,000
4	SHR-04V-S-B	SHR-04V-S	3.0(.118)	7.0(.276)	5.0(.197)	2,000
5	SHR-05V-S-B	SHR-05V-S	4.0(.157)	8.0(.315)	6.0(.236)	2,000
6	SHR-06V-S-B	SHR-06V-S	5.0(.197)	9.0(.354)	7.0(.276)	2,000
7	SHR-07V-S-B	SHR-07V-S	6.0(.238)	10.0(.394)	8.0(.315)	2,000
8	SHR-08V-S-B	SHR-08V-S	7.0(.278)	11.0(.433)	9.0(.354)	2,000
9	SHR-09V-S-B	SHR-09V-S	8.0(.315)	12.0(.472)	10.0(.394)	2,000
10	SHR-10V-S-B	SHR-10V-S	9.0(.354)	13.0(.512)	11.0(.433)	2,000
11	SHR-11V-S-B	SHR-11V-S	10.0(.394)	14.0(.551)	12.0(.472)	2,000
12	SHR-12V-S-B	SHR-12V-S	11.0(.433)	15.0(.591)	13.0(.512)	2,000
13	SHR-13V-S-B	SHR-13V-S	12.0(.472)	16.0(.630)	14.0(.551)	2,000
14	SHR-14V-S-B	SHR-14V-S	13.0(.512)	17.0(.669)	15.0(.591)	2,000
15	SHR-15V-S-B	SHR-15V-S	14.0(.551)	18.0(.709)	16.0(.630)	2,000
20	SHR-20V-S-B	—	19.0(.748)	23.0(.908)	21.0(.827)	2,000

Material

PBT, UL94V-0, natural (white)

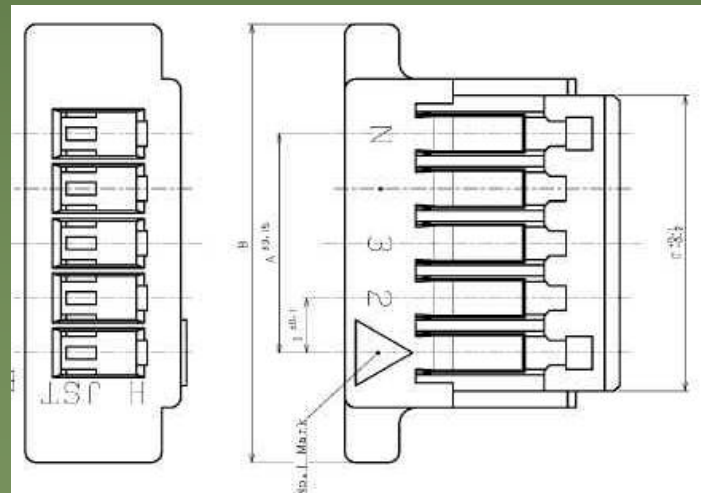
Note: SHR-20V-S-B is not CSA approved.

The SH Series housing, as shown in the catalog section above, is offered with and without protrusions. It is RoHS compliant as is. No additional (LF)(SN) suffix is required. It is also offered in various colors not listed in the catalog.

SH series details – housing

SHR- 02V-S-B

- ◆ SH = Series name
- ◆ R = Identifies this as a receptacle housing
- ◆ 02 = Indicates the number of circuits / positions





SH series details – housing

SHR- 02V-S-B

- ◆ V = UL flammability rating: UL94V-0

A UL (Underwriters Laboratory) flammability rating is regarded as evidence for the suitability of a polymer or compound for a proposed application.

The Underwriters Laboratory classifies plastic materials in terms of their flammability by the use of burning tests (in accordance with the UL94 standard). These can be vertical tests, which measure the material burning time and whether any flame drips ignite a piece of gauze placed underneath the test piece or, horizontal tests which measure the material burning rate.

Vertical Burn	Horizontal Burn
 <p><u>Self Extinguishing</u> UL94 V-0 (Best) UL94 V-1 (Good) UL94 V-2 (Drips)</p>	 <p><u>Slow Burn Rating</u> Takes more than 3 minutes to burn 4 inches.</p>

There are 12 flame classifications specified in the UL94 standard that are assigned to materials based on the results of these small-scale flame tests. However, for JST products only four are applicable, please see the table below:

Classification	Test Criteria
UL94V-0	Self-extinguishing within 10 seconds, no flame drips which ignite.
UL94V-1	Self-extinguishing within 30 seconds, no flame drips which ignite.
UL94V-2	Self-extinguishing within 30 seconds, flame drips which ignite.
UL94-HB	Slow horizontal burning on a 3mm thick specimen with a burning rate is less than 3"/min or stops burning before the 5" mark. H-B rated materials are considered "self-extinguishing". This is the lowest (least flame retardant) UL94 rating.

SH series details – housing

SHR- 02V-S-B

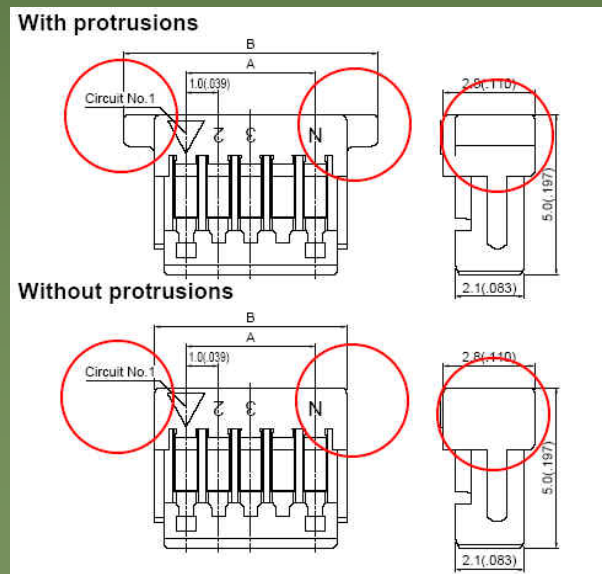
◆ S = This is the color indicator of the housing.

- S: White (natural) → 
- M: Green → 
- Y: Yellow → 
- PK: Pink → 
- BK: Black → 

SH series details – housing

SHR- 02V-S-B

- ◆ B = This is the protrusion indicator
 - With a “-B” suffixed, protrusions are included
 - Without a “-B” suffixed (blank), protrusions are not included
 - ◆ This is an optional feature. The protrusions give the user more surface area on this small housing for easier mating and disconnection from the header.



SH Series details – headers

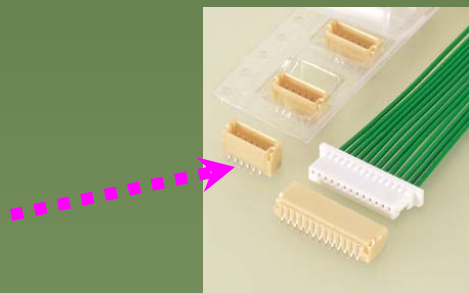
BM04B-SRSS-GU-TBT (LF)(SN)

- ◆ SM or BM = Assembly form / mounting configuration
 - SM: Side-mount / side-entry surface mount
 - BM: Top-mount / top-entry surface mount
- ◆ 04 = Number of circuits / positions
 - The headers are available in 2 through 16 and 20 positions. The 20 position size is only offered in a side-entry configuration.
 - Custom configurations with pins omitted can be made to order per customer upon project sheet submission. Example: 05(7-2.3) indicates 7 positions with positions 2 and 3 omitted – leaving only 5 positions remaining.

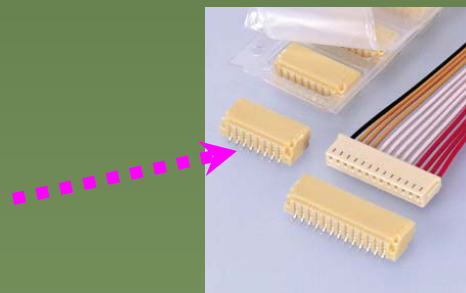
SH series details – headers

BM04B-SRSS-GU-TBT (LF)(SN)

- ◆ B = This identifies this part as a printed circuit board header.
- ◆ SR = Series name
 - Although listed only as an SR series header, it applies to both the SR and SH series.



SH series



SR series

SH series details – headers

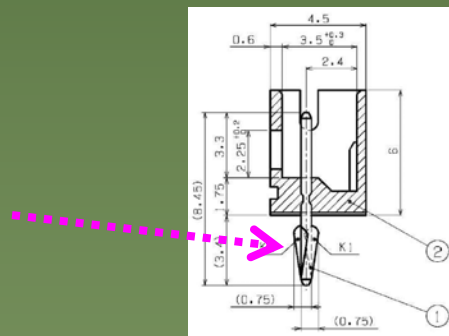
BM04B-SRSS-GU-TBT (LF)(SN)

- ◆ S = Color indicator
 - S: Natural color (Ivory)
 - K: Black
 - LG: Light green (originally for Symbol)
 - PK: Pink
 - Y: Yellow
 - LE: Light blue
 - KHF: Black and halogen-free (designed for Apple)

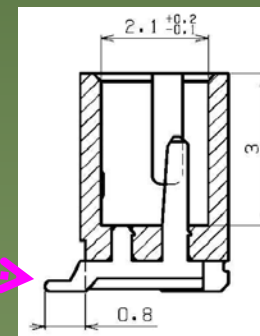
SH series details – headers

BM04B-SRSS-GU-TBT (LF)(SN)

- ◆ S = In JST terms, this indicates the “clinch view”
 - In essence, this indicates a kink in the solder tails that mount to the PCB. For the SH / SR headers, this indicator defines the header “without clinch”.



PH top-entry
through-hole
header with clinch



SH top-entry SMT
header without
clinch

SH series details – headers

BM04B-SRSS-GU-TBT (LF)(SN)

- ◆ Surface finish of the pins / posts
 - No indication (blank): Tin-plating [default]
 - G: Flash (about 0.05 microns) overall gold-plating
 - GU: About 0.4 microns of overall gold-plating
- ◆ Packaging / delivery type
 - This indicates the headers are supplied on embossed tape on a reel to accommodate automatic PCB placement equipment (i.e. pick-n-place).
 - ◆ TB: Solder tails face to the left in the tape cavity
 - ◆ TF: Solder tails face to the right in the tape cavity

SH series details – headers

BM04B-SRSS-GU-TBT (LF)(SN)

- ◆ T = Kapton tape / Suction cap
 - No indication (blank): Without Kapton tape
 - T: With Kapton tape
 - ◆ This is a piece of removable Mylar tape placed over the top of the header that allows the user to easily pick the part out of the embossed tape packaging and place it on the PCB using vacuum nozzles. Since the connector is small, and has little surface area for the nozzles, the Kapton tape makes it easier to remove the part from the tape cavity. Only the top-entry headers are offered with this tape as the side-entry headers have enough level surface area for the vacuum nozzles to pick the part. It is not required for pick-n-place equipment that uses pincers to grab the parts instead of vacuum nozzles. Vacuum placement is generally the standard method in the industry.

SH series details – headers

BM04B-SRSS-GU-TBT (LF)(SN)

- ◆ (LF)(SN) = Indicator of Removal of Hazardous Substances (RoHS) compliance
 - (LF): Is the symbol we use for “lead-free”
 - (SN): Is the Periodic Table of Elements symbol for “tin”
 - ◆ Both of the above combined dictate the part is “lead-free with 100% pure-tin” plating.
 - ◆ Some items we offer (not in the SH or SR series) only indicate (LF). As such, it is lead-free but the plating would be a 98% tin and 2% copper alloy.

JST Product Training

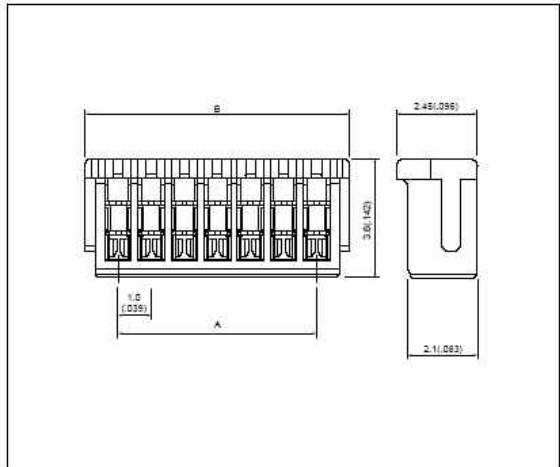


Confused??

Still with me??

Well, hang in there. Still more to learn....

SR series details – receptacle

Receptacle				
				
Cir- cuits	Model No.	Dimensions mm(in.)		Qty / box
		A	B	
2	02SR-3S	1.0(.039)	3.0(.118)	3,000
3	03SR-3S	2.0(.079)	4.0(.157)	3,000
4	04SR-3S	3.0(.118)	5.0(.197)	3,000
5	05SR-3S	4.0(.157)	6.0(.236)	2,000
6	06SR-3S	5.0(.197)	7.0(.276)	2,000
7	07SR-3S	6.0(.236)	8.0(.315)	2,000
8	08SR-3S	7.0(.276)	9.0(.354)	2,000
9	09SR-3S	8.0(.315)	10.0(.394)	2,000
10	10SR-3S	9.0(.354)	11.0(.433)	2,000
11	11SR-3S	10.0(.394)	12.0(.472)	2,000
12	12SR-3S	11.0(.433)	13.0(.512)	2,000
13	13SR-3S	12.0(.472)	14.0(.551)	2,000
14	14SR-3S	13.0(.512)	15.0(.591)	2,000
Material and Finish				
Contact: Phosphor bronze, tin-plated Housing: Polyamide, UL94V-0, natural (ivory)				

As mentioned previously, the SR series IDC receptacle is interchangeable with the SH series. This interchangeability means they both mate to the same surface mount PCB headers. Unlike some of the IDC connectors listed in the current catalog, the SR series will list the mating header options available so you don't have to refer to a different section of the catalog to find the mating part numbers.

SR series details – receptacle

02 SR-3S

- ◆ 02 = Number of circuits / positions
 - The SR series is offered in positions from 2 through 14. Unlike the SH, it is not available in 15 and 20 circuit sizes. Larger circuit sizes may result in warping of the receptacle due to forces exerted from the inserted wires.
- ◆ SR = Series name

SR series details – receptacle

02 SR- 3 S

- ◆ 3 = This indicates the applicable wire gauge
 - 3 = #30 AWG wire with an insulation outer diameter range of 0.54mm (.021") to 0.58 (.023"). The recommended UL style of wire to use is UL1571. Smaller wire will not fit into the receptacle and likely not make contact with the U-slots; larger wire will not fit as well whereas it would warp the connector or break it and likely damage the termination equipment.
- ◆ S = This indicates the color of the receptacle housing
 - S: Natural – Ivory (default)
 - PK: Pink (limited to only 2 or 3 different sizes at this time)