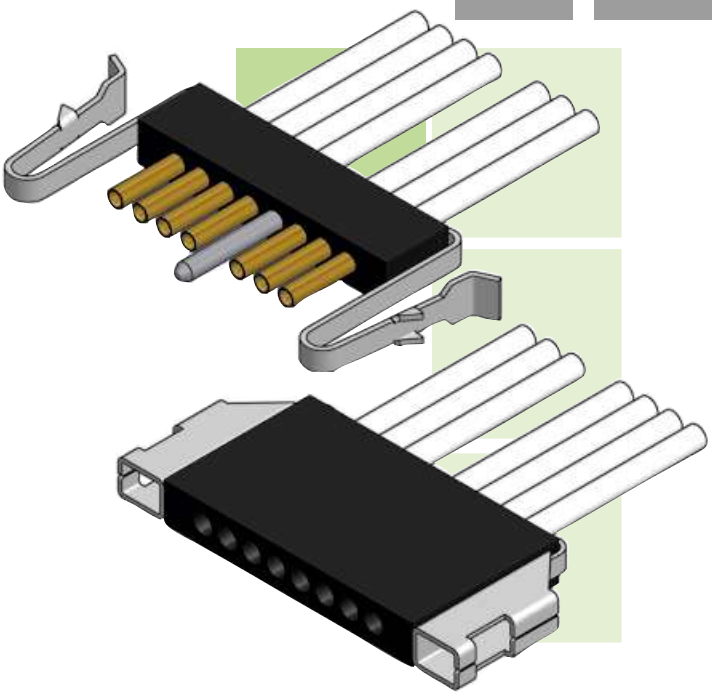


MICROSTRIP CONNECTORS

PIGTAIL & SOLDER CUP ASSEMBLIES

1.27 mm (0.050") PITCH

- Single row plastic connector for space and weight saving applications.
- Guide pin(s) or latch(es) available on female connector (blank cavity(ies) or latch box(es) on male connector).

IDENTIFICATION CODE

MSA	P	1	07	S	B	4	L	050	G06 L2E

SERIES
MSA: Micro Strip AXON' standard series.

STRIP TYPE
P: LCP shell + potting 150°C.
L: LCP shell + potting 200°C.

NUMBER OF ROWS: 1.

NUMBER OF ELECTRICAL CAVITIES: 02 TO 40.
Mechanical cavities are used for polarization, must not be counted here but can reduce the maximum number of available electrical cavities (see page 134).

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

MOUNTING HOLE OPTION
A: With mounting holes.
B: No mounting holes.

TERMINATION / WIRE TYPE
For colour codes F, L, W
1: E 2607, AWG 26, 7 strands, 600V.
4: E 2619, AWG 26, 19 strands, 600V.
6: E 2807, AWG 28, 7 strands, 600V.
8: E 3007, AWG 30, 7 strands, 600V.
A: E 2407, AWG 24, 7 strands, 600V.
C: E 2419, AWG 24, 19 strands, 600V.
E: M22759/33, AWG 26,19 strands, 600V.

For colour code V only
3: M22759/11, AWG26. 19 strands, 600V.
F: E2607, AWG26, 7 strands, 600V.

Solid uninsulated wires
G: AWG 25 gold plated.
T: AWG 24 tin plated.
FS: solder cup.
See page 29 for wire types.

COLOUR CODE
F: All yellow.
L: All white.
V: MIL-STD-681 striped (for wire types 3 and F only).
Blank: If wire type is G, T or FS.
W: 10 colour repeat.
See page 30 for colour code.

WIRE LENGTH (in cm)
BLANK: if wire type is **FS**.
Attention! Wire length in centimetres (1cm = 10 mm = .394").

L in cm (inches)	5 ≤ L ≤ 10 (1.97≤ L ≤ 3.940)	10 < L ≤ 100 (3.940 < L ≤ 39.40)	L > 100 (L > 39.40)
TOLERANCE in cm (inches)	-0 / +0.5 (-0 / +0.200)	-0 / +3 (-0 / +1.180)	-0 / +5 (-0 / +1.970)

IF NEEDED, YOU CAN COMBINE SEVERAL HARDWARE OPTIONS

EXAMPLES:
- 2 GUIDE-PINS OR LATCH-SPRINGS AT 2 PARTICULAR POSITIONS: MSAP109SB4L025 **G02 G08** (OR **L02 L08**)
- 1 GUIDE-HOLE CENTERED + 1 LATCH-BOX AT A PARTICULAR POSITION: MSAP112PAR2T3 **GCE L07**
- 1 GUIDE-PIN CENTERED + LATCH-SPRINGS BOTH ENDS: MSAL117SACF012 **GCE L2E**

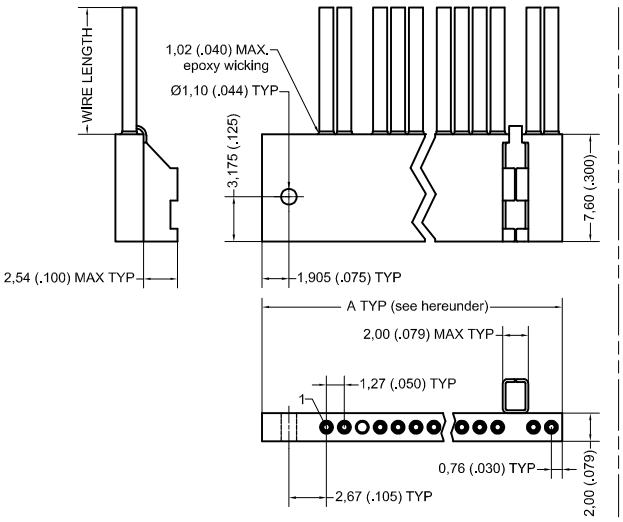
ONLY 2 RULES TO BUILD YOUR P/N:
- DEFINE ALL GUIDE PIN CODES FIRST, FOLLOWED BY LATCH CODES
- DEFINE STANDARD CODES (G2E / GCE / L2E / LCE) FIRST, FOLLOWED BY SPECIFIC POSITION CODES (GXX / LXX) AFTERWARDS

POLARIZATION
Blank: None.
G2E: Guide pin / guide hole both ends.
GCE: Guide pin / guide hole centered.
GXX: Guide pin / guide hole in xx position.
L2E: Latch spring / latch box both ends.
LCE: Latch spring / latch box centered.
LXX: Latch spring / latch box in xx position.

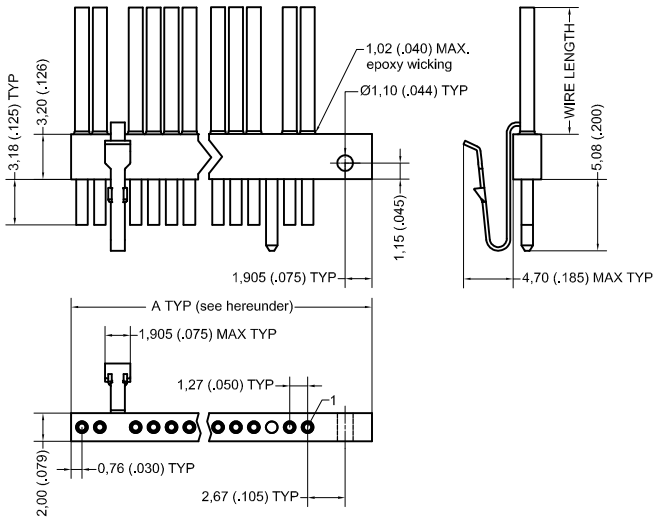
DIMENSIONS

Dimensions are in millimetres (inches).

MALE MICRO STRIP CONNECTOR



FEMALE MICRO STRIP CONNECTOR



TO DETERMINE CONNECTOR WIDTH A ± 0.3 mm (.012")	EXAMPLE: 11 CAVITY STRIP WITH MOUNTING HOLES
MULTIPLY the number of mechanical cavities in one row by 1.27 mm (.050")	11 x 1.27 = 13.97
ADD 0.25 mm (.010")	+ 0.25 = 14.22
ADD 7.62 mm (.300") if mounting hole option is selected	+ 7.62 = 21.84

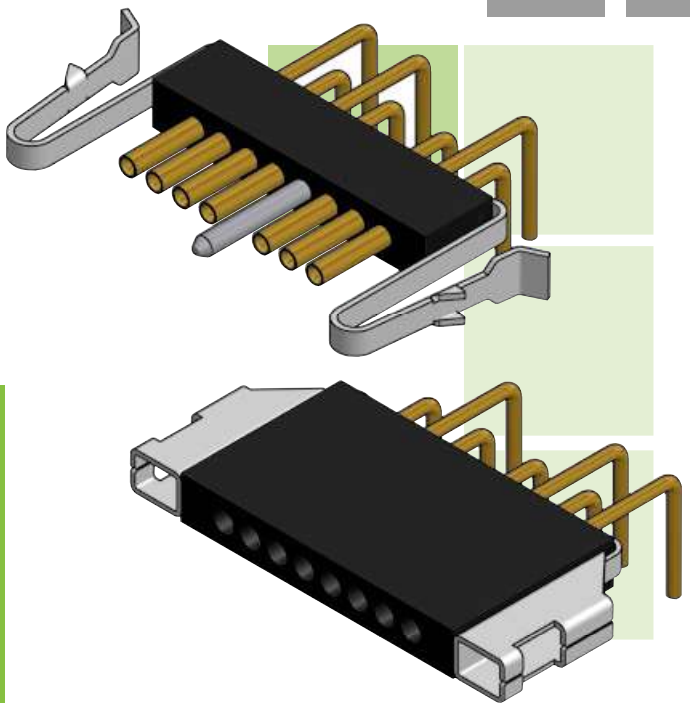
For detailed information concerning microstrip connectors, see pages 134 to 136.

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
CURRENT RATING	3 A max.
CONTACT RESISTANCE	8 mΩ max.
INSULATION RESISTANCE	5000 MΩ min. @ 500 VDC
DIELECTRIC WITHSTANDING VOLTAGE	Sea level: 600 VAC
	Altitude 21 km (70,000 ft):150 VAC
CONTACT ENGAGING FORCE	170 g max. (6 oz)
CONTACT SEPARATING FORCE	14 g min. (0.5 oz)
CONTACT RETENTION	2.26 kg (5 lbs)
DURABILITY	500 mating cycles min.

MATERIAL & FINISH	
SHELL	Liquid Crystal Polymer (LCP)
PIN CONTACT	Copper and Beryllium copper, gold over nickel plating
SOCKET CONTACT	Copper alloy, gold over nickel plating
ENCAPSULANT	Epoxy resin
GUIDE PIN	300 series stainless steel, passivated
LATCH	Beryllium copper, nickel plating

SEE PAGE 24 FOR MORE INFORMATION



MICROSTRIP CONNECTORS

PCB CONNECTOR

1.27 mm (0.050") PITCH

- Single row plastic connector for space and weight saving applications.
- Guide pin(s) or latch(es) available on female connector (blank cavity(ies) or latch box(es) on male connector).

IDENTIFICATION CODE

MSA	P	1	07	S	B	R3	G	2	G06 L2E

SERIES
MSA: Micro Strip AXON' standard series.

STRIP TYPE
P: LCP shell + potting 150°C.
L: LCP shell + potting 200°C.

NUMBER OF ROWS: 1.

NUMBER OF ELECTRICAL CAVITIES: 02 TO 40.
Mechanical cavities are used for polarization, must not be counted here but can reduce the maximum number of available electrical cavities (see page 134).

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

MOUNTING HOLE OPTION
A: with mounting holes.
B: No mounting holes.

VERSION TYPE
S1: Straight.
S2: Straight, 2.54 mm (0.100") offset.
R1: Right-angle in line.
R2: Right-angle, 1.27 mm (0.50") offset.
R3: Right-angle, 2.54 mm (0.100") offset.

CONDUCTOR TYPE
G: Solid conductor 25 AWG, gold plated.
T: Solid conductor 24 AWG, tin plated.
See page 29 for wire types.

TAIL LENGTH
1: 2.80 mm (0.110").
2: 3.80 mm (0.150").
3: 4.80 mm (0.190").
4: 6.35 mm (0.250").
Tolerance: ± 0.38 mm (0.015").
Other lengths upon request.

POLARIZATION
BLANK: NONE.
G2E: GUIDE PIN / GUIDE HOLE BOTH ENDS.
GCE: GUIDE PIN / GUIDE HOLE CENTERED.
GXX: GUIDE PIN / GUIDE HOLE IN XX POSITION.
L2E: LATCH SPRING / LATCH BOX BOTH ENDS.
LCE: LATCH SPRING / LATCH BOX CENTERED.
LXX: LATCH SPRING / LATCH BOX IN XX POSITION.

IF NEEDED, YOU CAN COMBINE SEVERAL HARDWARE OPTIONS

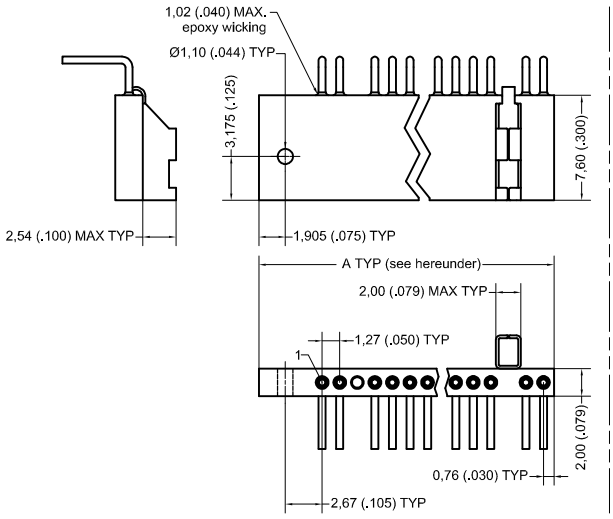
EXAMPLES:
- 2 GUIDE-PINS OR LATCH-SPRINGS AT 2 PARTICULAR POSITIONS: MSAP109SB4L025 **G02 G08** (OR **L02 L08**)
- 1 GUIDE-HOLE CENTERED + 1 LATCH-BOX AT A PARTICULAR POSITION: MSAP112PAR2T3 **GCE L07**
- 1 GUIDE-PIN CENTERED + LATCH-SPRINGS BOTH ENDS: MSAL117SACF012 **GCE L2E**

ONLY 2 RULES TO BUILD YOUR P/N:
- DEFINE ALL GUIDE PIN CODES FIRST, FOLLOWED BY LATCH CODES
- DEFINE STANDARD CODES (G2E / GCE / L2E / LCE) FIRST, FOLLOWED BY SPECIFIC POSITION CODES (GXX / LXX) AFTERWARDS

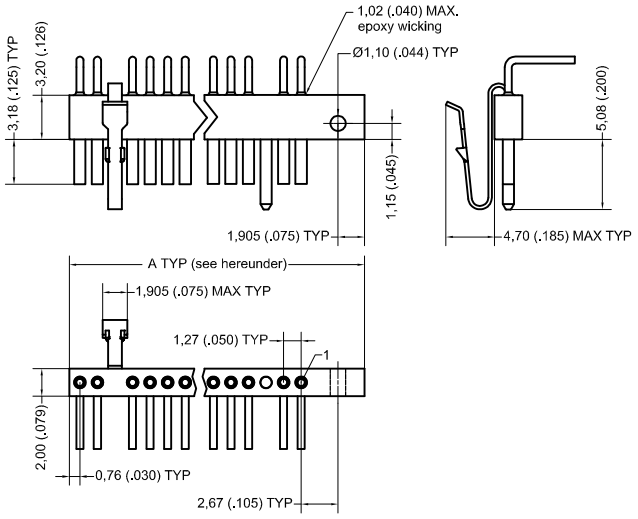
DIMENSIONS

Dimensions are in millimetres (inches).

MALE MICRO STRIP CONNECTOR



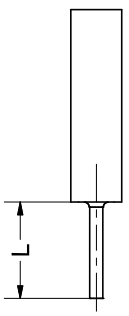
FEMALE MICRO STRIP CONNECTOR



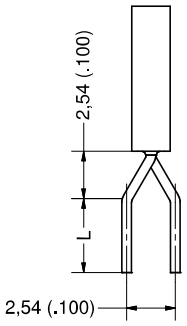
SEE CONTACT LAYOUT ON PCB PAGES 115 / 116 / 117.

TO DETERMINE CONNECTOR WIDTH A ± 0.3 mm (.012")	EXAMPLE: 11 CAVITY STRIP WITH MOUNTING HOLES
MULTIPLY the number of mechanical cavities in one row by 1.27 mm (.050")	11 x 1.27 = 13.97
ADD 0.25 mm (.010")	+ 0.25 = 14.22
ADD 7.62 mm (.300") if mounting hole option is selected	+ 7.62 = 21.84

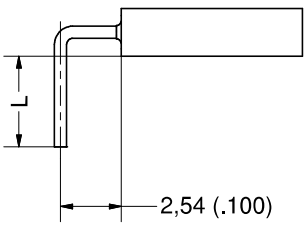
For detailed information concerning microstrip connectors, see pages 134 to 136.



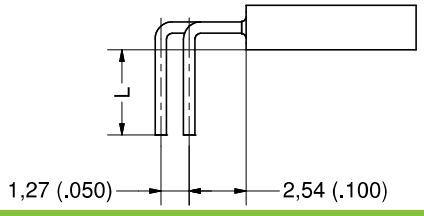
VERSION S1
STRAIGHT



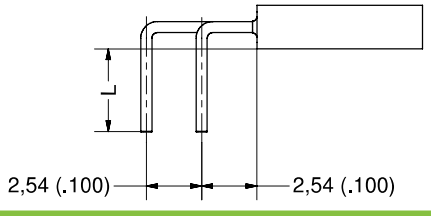
VERSION S2
STRAIGHT, .100" OFFSET



VERSION R1
RIGHT ANGLE, IN LINE



VERSION R2
RIGHT ANGLE, .050" OFFSET



VERSION R3
RIGHT ANGLE, .100" OFFSET

MICROSTRIP GENERAL INFORMATION

All cavities used, whether for electrical (pin or socket) contacts or for hardware options, (guide pin or latch) are considered as mechanical positions.

- G2E & L2E: 2 mechanical positions to count.
- GCE & LCE: 1 mechanical position to count.
- Gxx & Lxx: 1 mechanical position to count for each occurrence.

NB: If G2E or L2E are chosen, first and last cavities cannot be used for another polarization option (ex: if L2E is chosen, guide pin in position 1 is not possible)

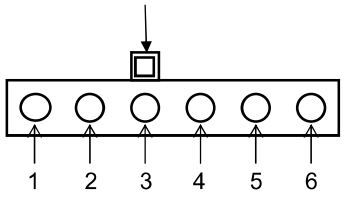
When specifying the number of ways, only electrical positions (cavities containing pin or socket contacts) are counted.
Example: a 7 way strip with 2 latches at the end and a guide pin would have 10 mechanical positions, but would still be called a 7 way connector.

TO DETERMINE CONNECTOR WIDTH A ± 0.3 mm (.012")	EXAMPLE: 11 CAVITY STRIP WITH MOUNTING HOLES
MULTIPLY the number of mechanical cavities in one row by 1.27 mm (.050")	11 x 1.27 = 13.97
ADD 0.25 mm (.010")	+ 0.25 = 14.22
ADD 7.62 mm (.300") if mounting hole option is selected	+ 7.62 = 21.84

To determine hardware location number for centered hardware (GCE / LCE):

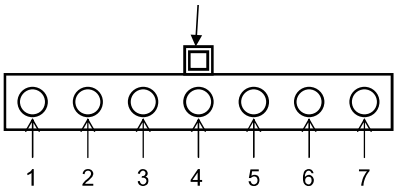
- Divide the total number of mechanical cavities by two.
- Round to the next whole number if result is a fraction.

LATCH BOX WITH FILLED CAVITY



6/2 = 3
> HARDWARE IN CAVITY N°3

LATCH BOX WITH FILLED CAVITY



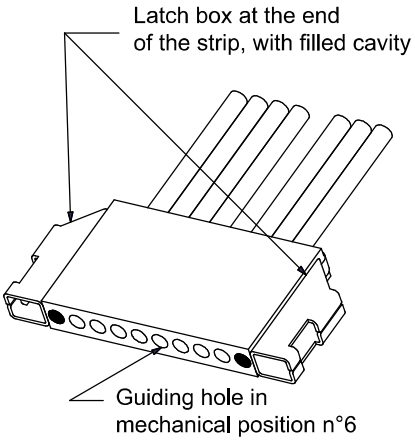
7/2 = 3.5
> HARDWARE IN CAVITY N°4

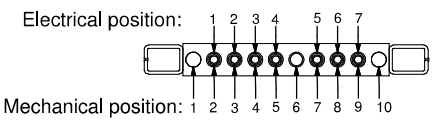
Hardware options

POLARIZATION BY GUIDE PIN
The guide pin is inserted into the female connector, and there is a guide hole in the opposite cavity in the male connector.

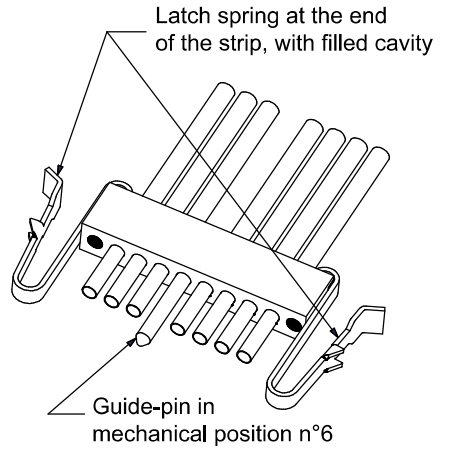
LATCHED RETENTION
The latch spring is mounted on the female connector, with the corresponding latch box installed on the male connector. When the first and/or last mechanical positions are chosen for the latches they will be mounted on the connector edges, making the connector wider but not longer. For all other positions the latches will be mounted on top of the connector, directly above the corresponding mechanical position. Wherever a latch is fitted the corresponding cavity will be filled, and therefore mechanical only in function.

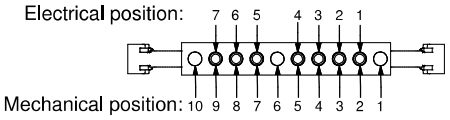
EXAMPLES



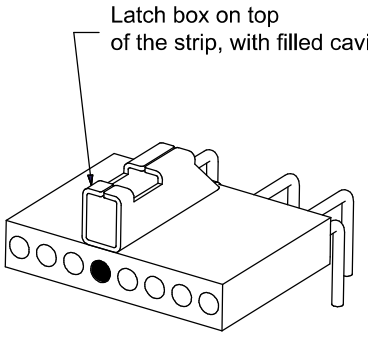


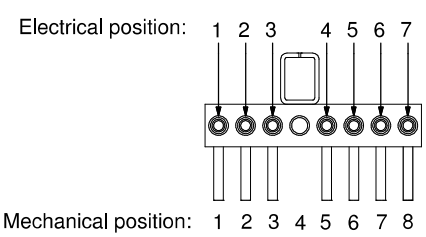
P/N : MSA P 1 07 P B xxxxx G06 L2E



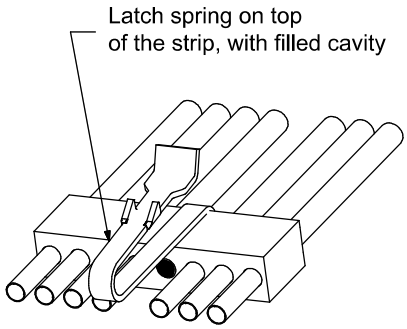


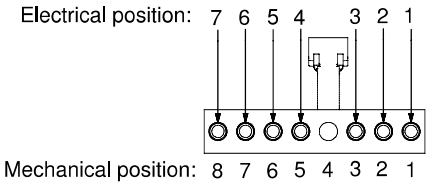
P/N : MSA P 1 07 S B xxxxx G06 L2E





P/N : MSA P 1 07 P B R3 xx L04

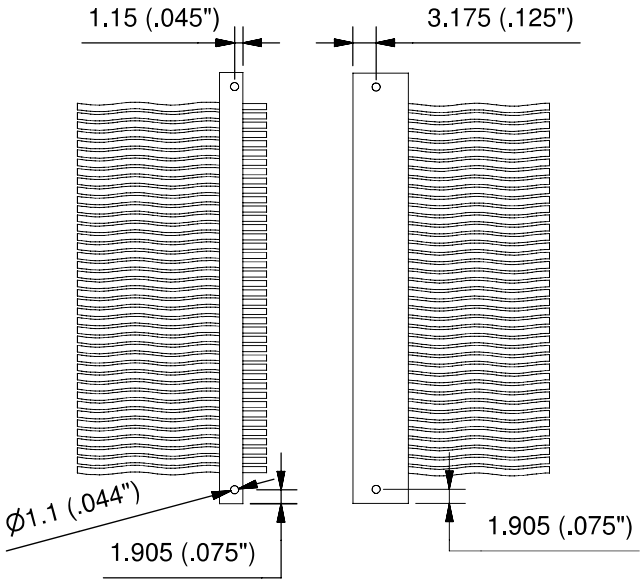




P/N : MSA P 1 07 S B xxx L04

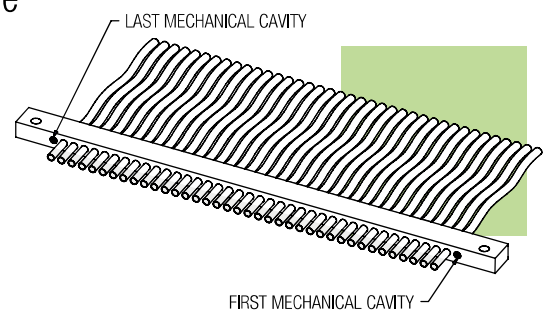
MOUNTING HOLES OPTION

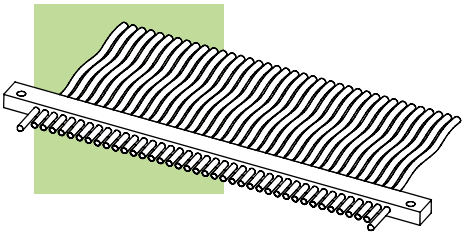
Position of holes



Special case: mounting holes + hardware

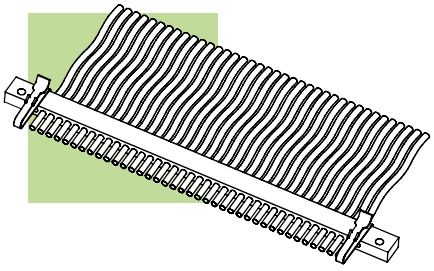
When mounting holes are selected, first and last mechanical cavities are "after the holes area".





EXAMPLE WITH **GUIDE PIN**

Hardware code G2E
Guide pin / guide holes to be in first and last mechanical cavities.



EXAMPLE WITH **LATCHING**

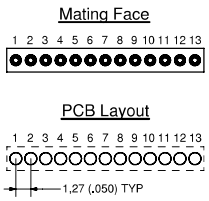
Hardware code L2E
Latch spring / latch box to be above first and last mechanical cavities, not on the edges of the strip.

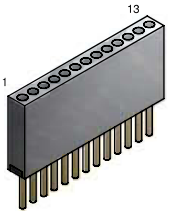
PCB LAYOUT FOR MICROSTRIP CONNECTORS

VERSION S1: STRAIGHT

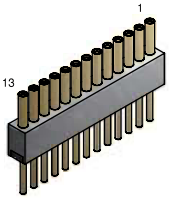
EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR | **FEMALE MICROSTRIP CONNECTOR**

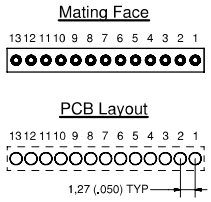




MSA P 1 13 P B S1 G 2

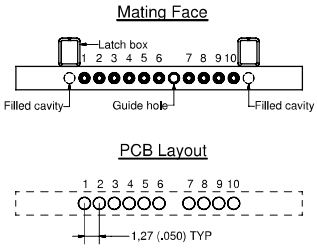


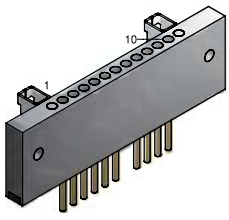
MSA P 1 13 S B S1 G 2



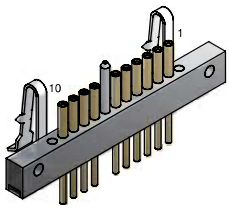
EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR | **FEMALE MICROSTRIP CONNECTOR**

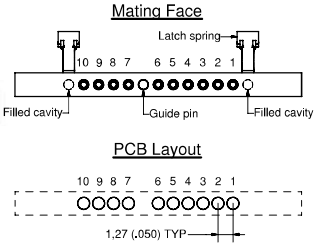




MSA P 1 10 P A S1 G 2 G08 L2E



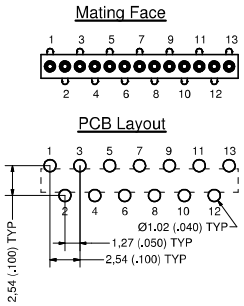
MSA P 1 10 S A S1 G 2 G08 L2E

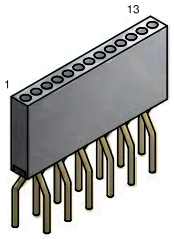


VERSION S2: STRAIGHT - .100" OFFSET

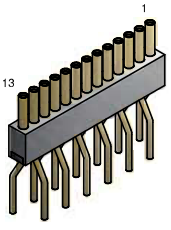
EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR | **FEMALE MICROSTRIP CONNECTOR**





MSA P 1 13 P B S2 G 2



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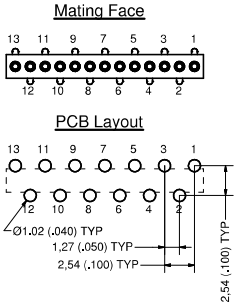
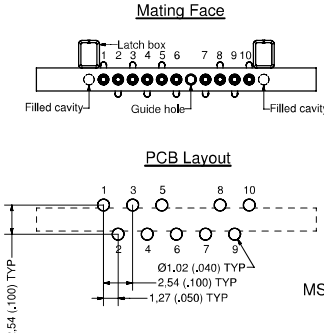
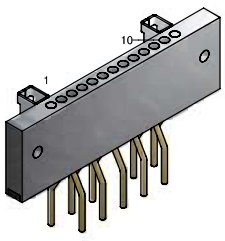


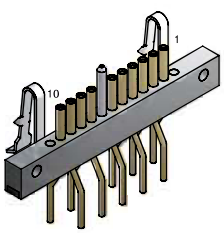
EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR | **FEMALE MICROSTRIP CONNECTOR**





MSA P 1 10 P A S2 G 2 G08 L2E



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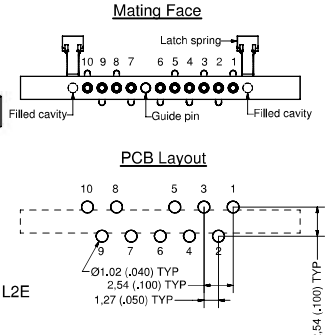
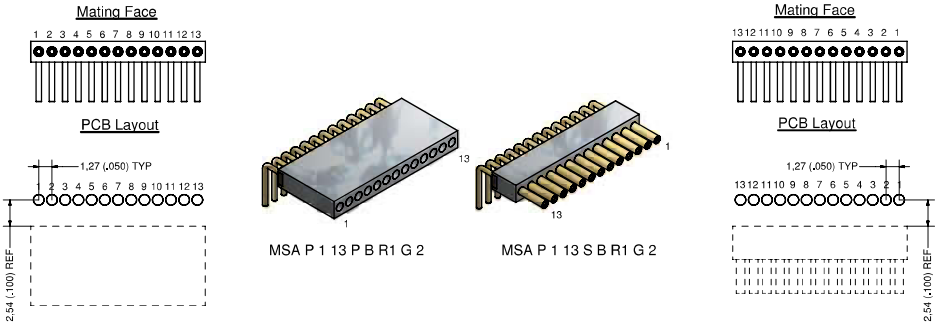


PCB LAYOUT FOR MICROSTRIP CONNECTORS

VERSION R1: RIGHT ANGLE IN LINE

EXAMPLE OF A 13 WAY CONNECTOR

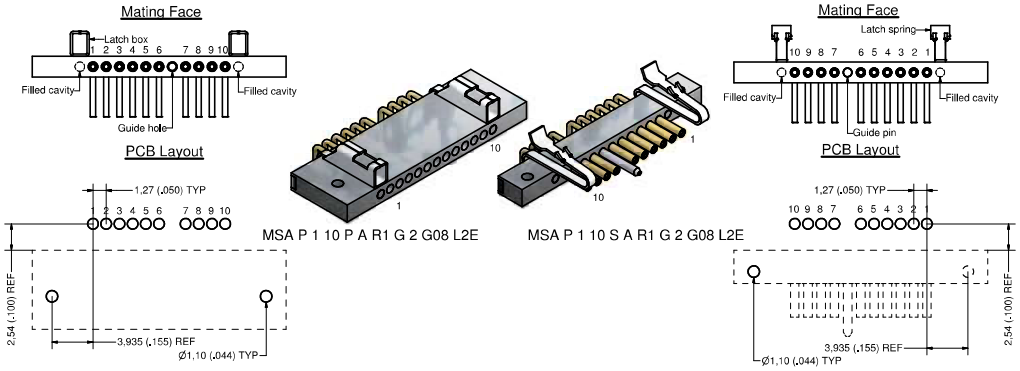
MALE MICROSTRIP CONNECTOR | **FEMALE MICROSTRIP CONNECTOR**



MSA P 1 13 P B R1 G 2 | MSA P 1 13 S B R1 G 2

EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR | **FEMALE MICROSTRIP CONNECTOR**

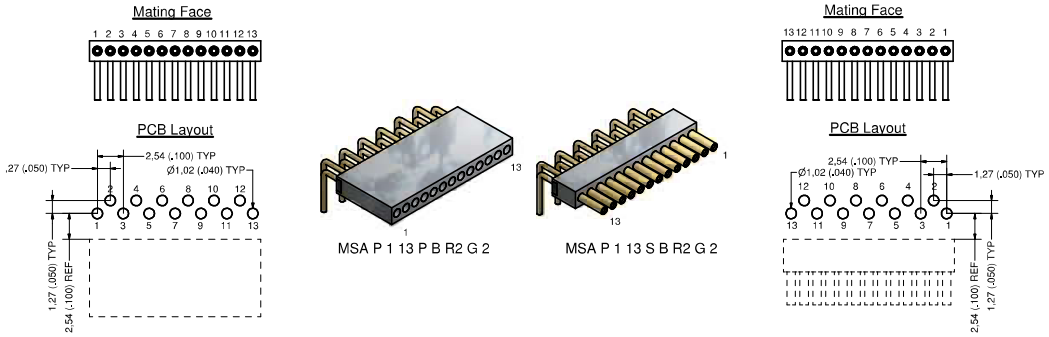


MSA P 1 10 P A R1 G 2 G08 L2E | MSA P 1 10 S A R1 G 2 G08 L2E

VERSION R2: RIGHT ANGLE, .050" OFFSET

EXAMPLE OF A 13 WAY CONNECTOR

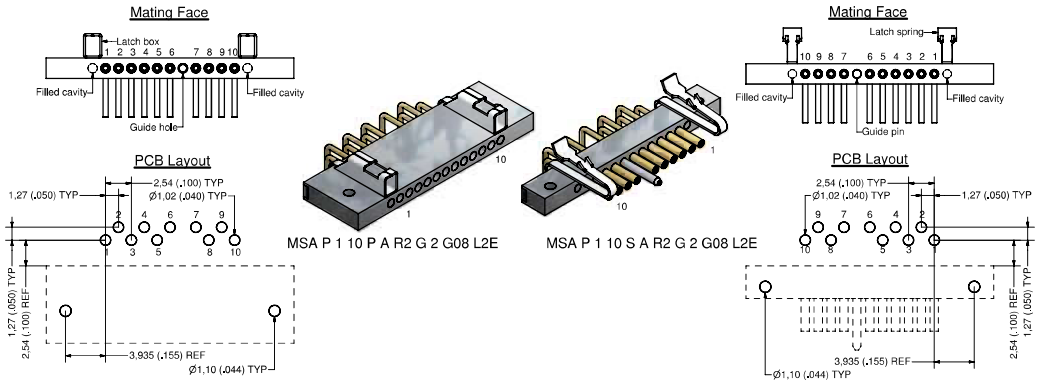
MALE MICROSTRIP CONNECTOR | **FEMALE MICROSTRIP CONNECTOR**



MSA P 1 13 P B R2 G 2 | MSA P 1 13 S B R2 G 2

EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR | **FEMALE MICROSTRIP CONNECTOR**



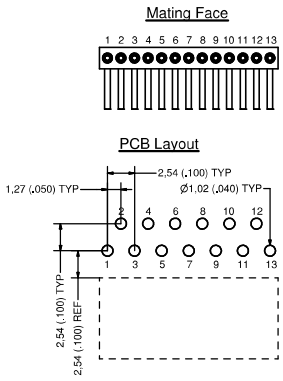
MSA P 1 10 P A R2 G 2 G08 L2E | MSA P 1 10 S A R2 G 2 G08 L2E

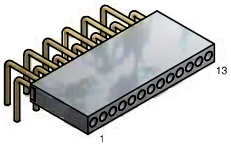
PCB LAYOUT FOR MICROSTRIP CONNECTORS

VERSION R3: RIGHT ANGLE .100" OFFSET

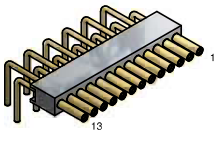
EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR



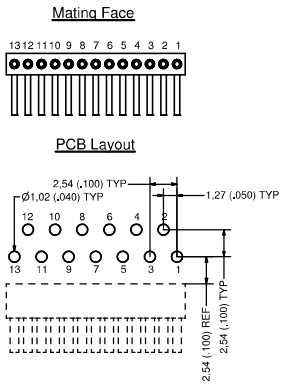


MSA P 1 13 P B R3 G 2



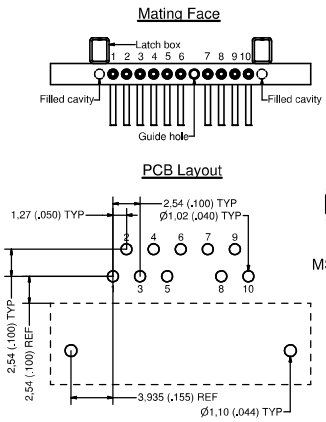
MSA P 1 13 S B R3 G 2

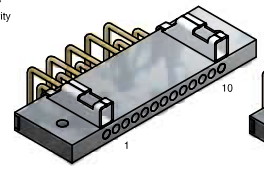
FEMALE MICROSTRIP CONNECTOR



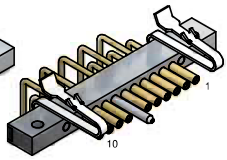
EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR





MSA P 1 10 P A R3 G 2 G08 L2E



MSA P 1 10 S A R3 G 2 G08 L2E

FEMALE MICROSTRIP CONNECTOR