

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 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 112)

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 19 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 20 for colour code.

WIRE LENGTH : cm

BLANK : if wire type is FS.

Attention ! Wire length in centimetres (1cm = 10 mm = .394")

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.

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

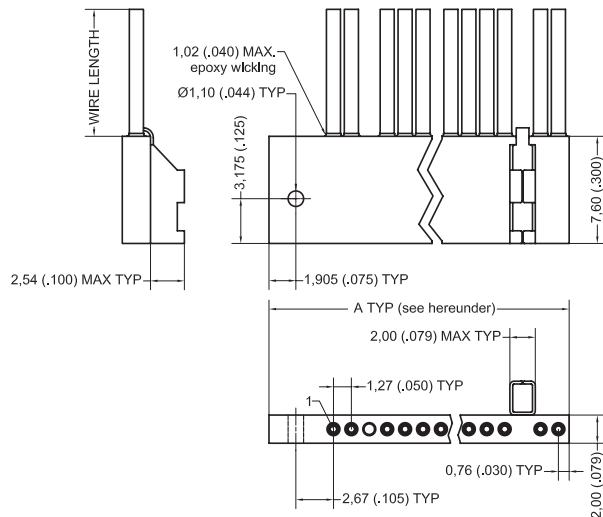
ONLY 2 RULES TO BUILD YOUR P/N :

- 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

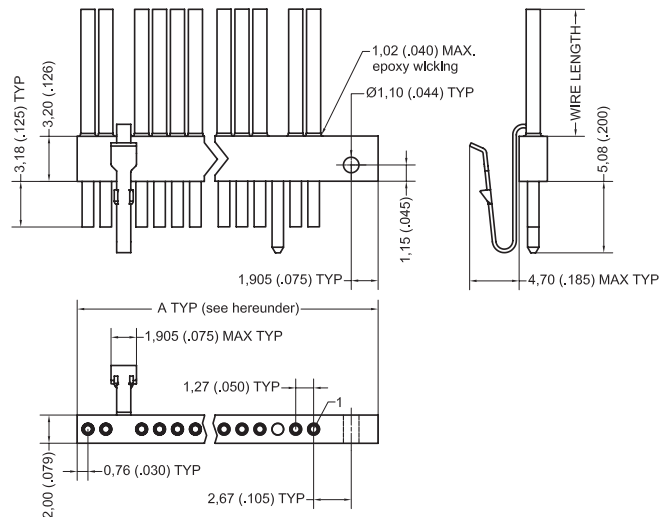
DIMENSIONS

Dimensions are in millimetres (inches).

MALE MICRO STRIP CONNECTOR



FEMALE MICRO STRIP CONNECTOR



Standard Micro-D
connectors

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 * 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 112 to 114.

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE		MATERIAL & FINISH	
CURRENT RATING	3 A max.	SHELL	Liquid Crystal Polymer (LCP)
CONTACT RESISTANCE	8 mΩ max.	PIN CONTACT	Copper and Beryllium copper, gold over nickel plating
INSULATION RESISTANCE	5000 MΩ min. @ 500 V DC	SOCKET CONTACT	Copper alloy, gold over nickel plating
DIELECTRIC WITHSTANDING VOLTAGE	Sea level : 600 V AC Altitude 21 km (70,000 ft) :150 V AC	ENCAPSULANT	Epoxy resin
CONTACT ENGAGING FORCE	170 g max. (6 oz)	GUIDE PIN	300 series stainless steel, passivated
CONTACT SEPARATING FORCE	14 g min. (0.5 oz)	LATCH	Beryllium copper, nickel plating
CONTACT RETENTION	2.26 kg (5 lbs)		
DURABILITY	500 mating cycles min.		

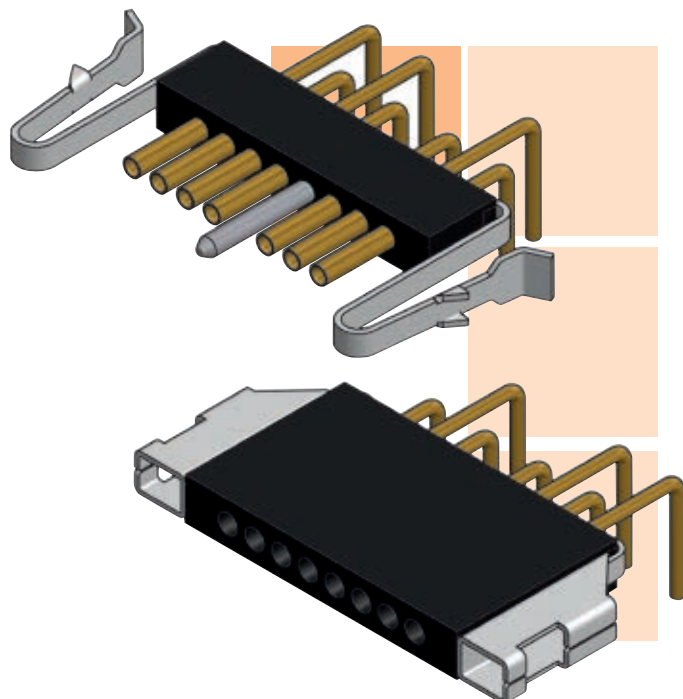
SEE PAGE 15 FOR MORE INFORMATION

MICROSTRIP CONNECTORS

PCB
CONNECTOR

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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 19 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 :

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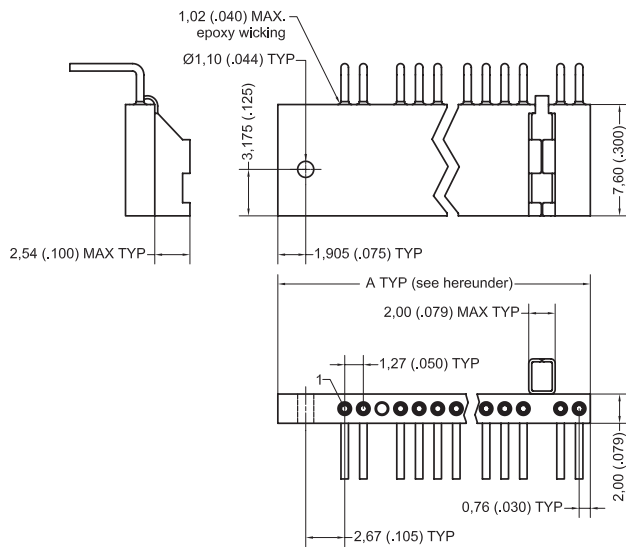
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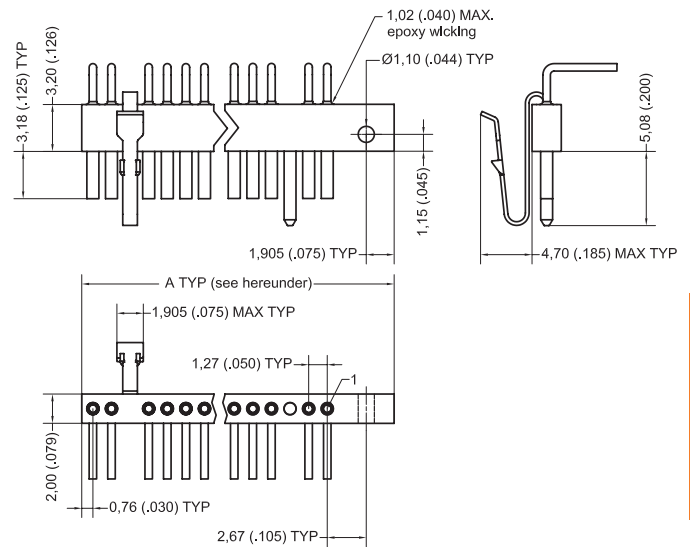
DIMENSIONS

Dimensions are in millimetres (inches).

MALE MICRO STRIP CONNECTOR



FEMALE MICRO STRIP CONNECTOR

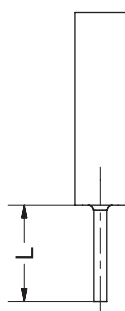


SEE CONTACT LAYOUT ON PCB PAGES 115/116/117.

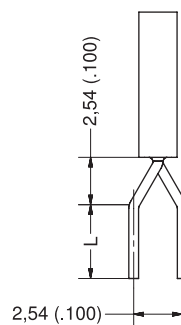
TO DETERMINE CONNECTOR WIDTH A +/- 0.3 mm (.012")

	EXAMPLE : 11 CAVITY STRIP WITH MOUNTING HOLES
MULTIPLY the number of mechanical cavities in one row by 1.27 mm (.050")	11 * 1.27 = 13.97
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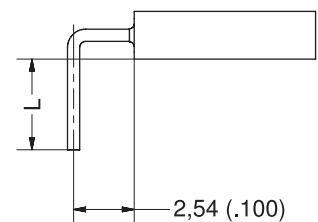
► For detailed information concerning microstrip connectors, see pages 112 to 114.



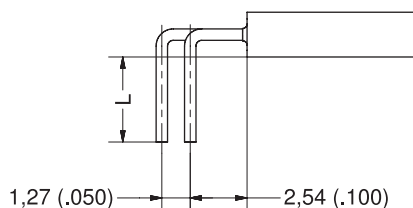
VERSION S1
STRAIGHT



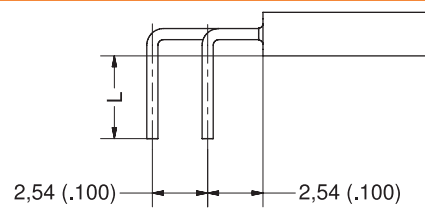
VERSION S2
STRAIGHT, .100" OFFSET



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.

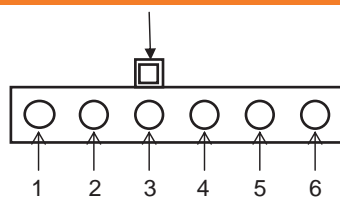
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ADD 0.25 mm (.010")	+ 0.25 = 14.22
ADD 7.62 mm (.300") if mounting hole option is selected	+ 7.62 = 21.84

► 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.

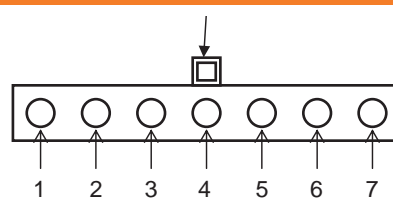
LATCH BOX WITH FILLED CAVITY



$$\frac{6}{2} = 3$$

> HARDWARE IN CAVITY N°3

LATCH BOX WITH FILLED CAVITY



$$\frac{7}{2} = 3.5$$

> HARDWARE IN CAVITY N°4

► Hardware options

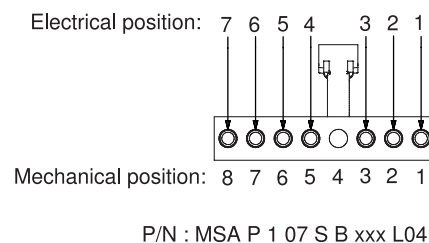
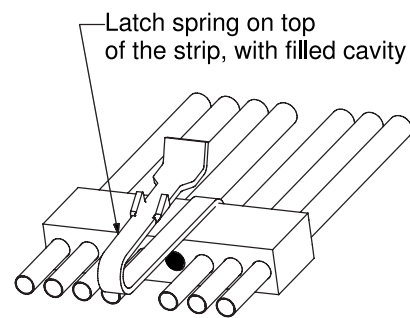
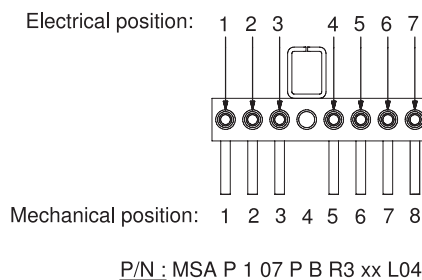
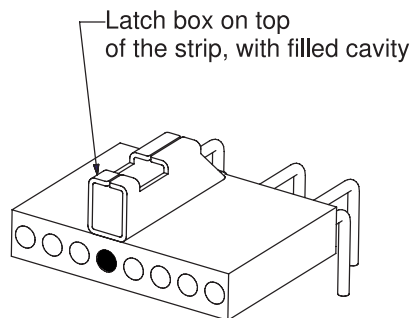
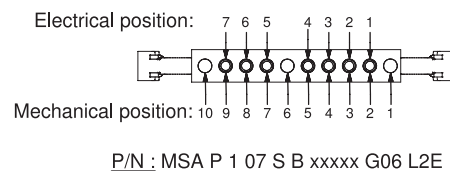
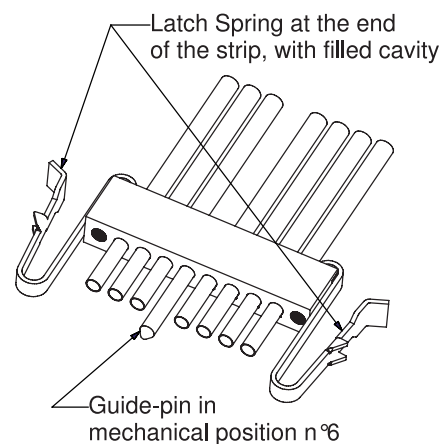
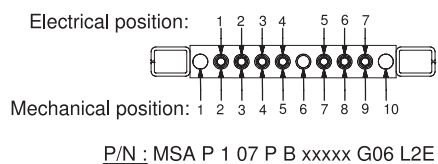
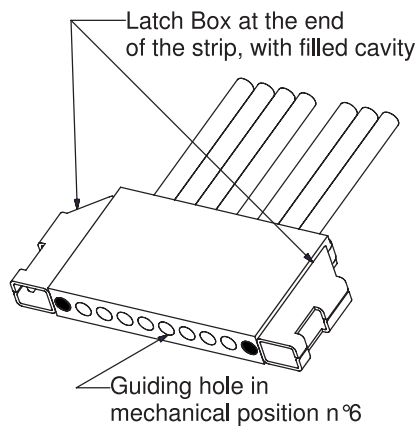
POLARIZATION BY GUIDE PIN

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

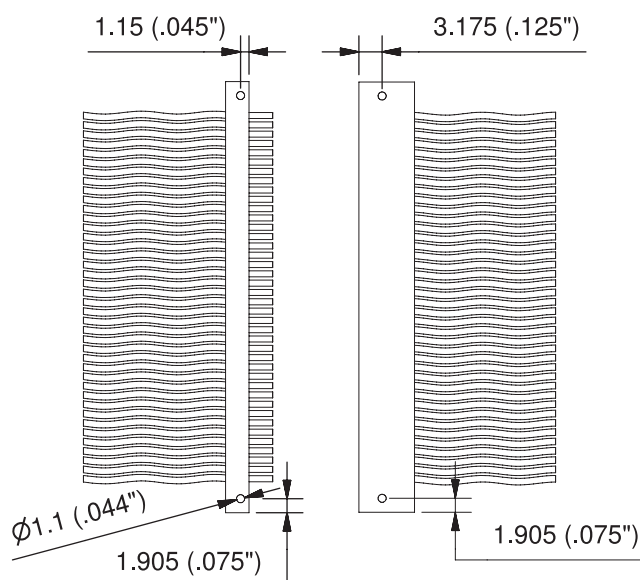
The latch spring is mounted on the female connector, with the corresponding latch box installed on the male connector. When the first and/or last mechanical positions are chosen for the latches they will be mounted on the connector edges, making the connector wider but not longer. For all other positions 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



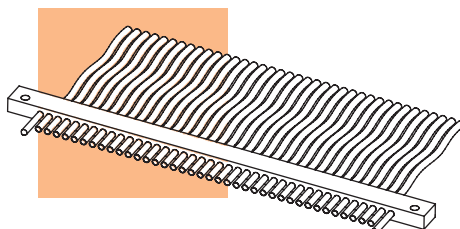
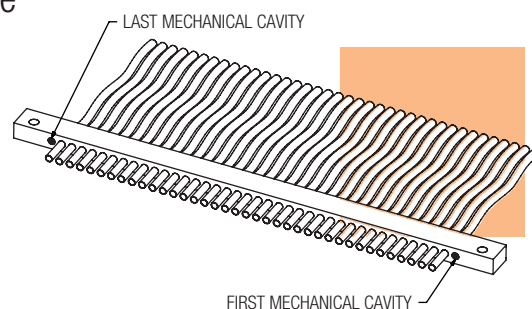
MOUNTING HOLES OPTION

Position of holes



Special case : mounting holes + hardware

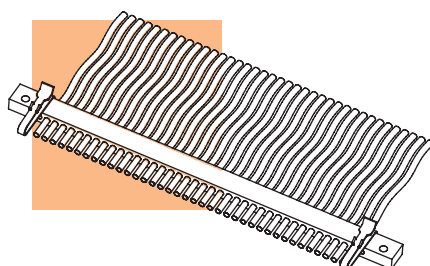
When mounting holes are selected, first and last mechanical cavities are "after the holes area".



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

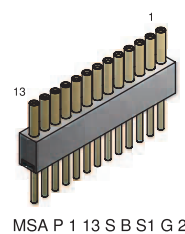
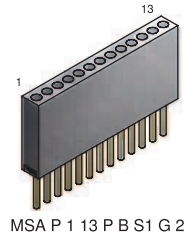
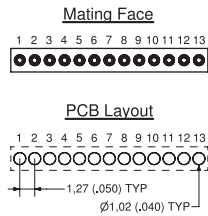
Latch spring / latch box to be above first and last mechanical cavities, not on the edges of the strip.

PCB LAYOUT FOR MICROSTRIP CONNECTORS, 0.050" PITCH

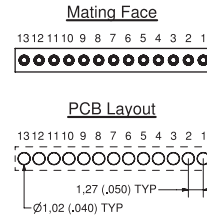
VERSION S1 : STRAIGHT

EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR

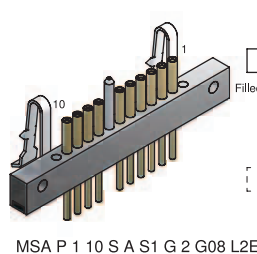
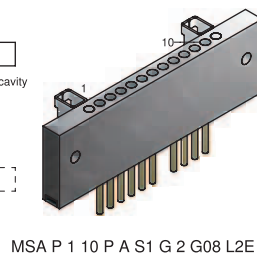
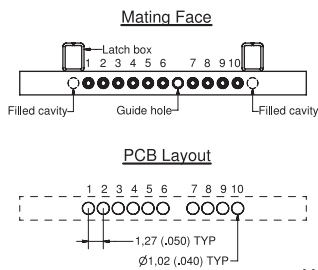


FEMALE MICROSTRIP CONNECTOR

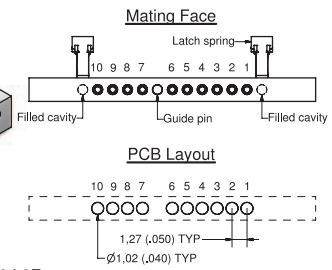


EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR



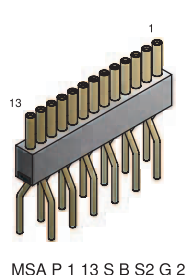
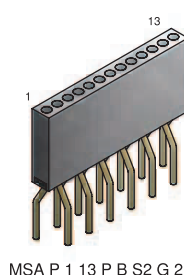
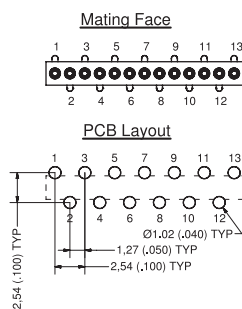
FEMALE MICROSTRIP CONNECTOR



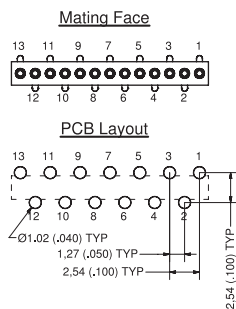
VERSION S2 : STRAIGHT - .100" OFFSET

EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR

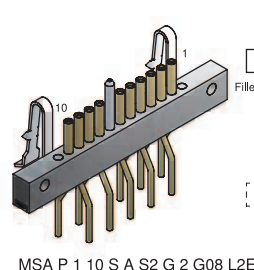
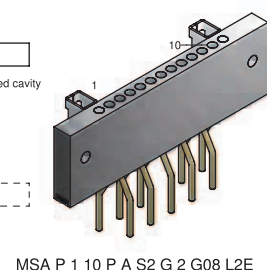
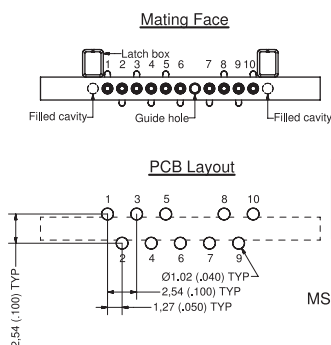


FEMALE MICROSTRIP CONNECTOR

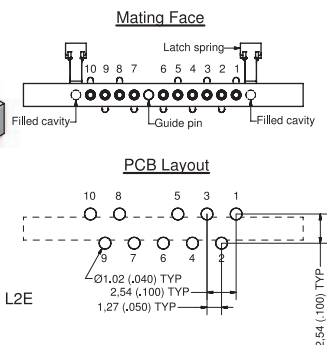


EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR



FEMALE MICROSTRIP CONNECTOR

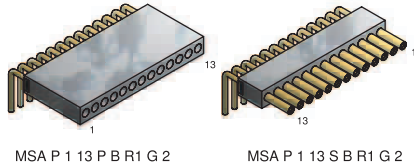
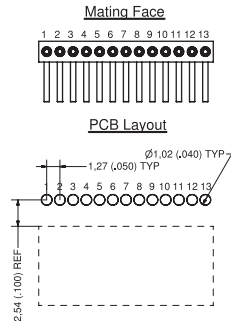


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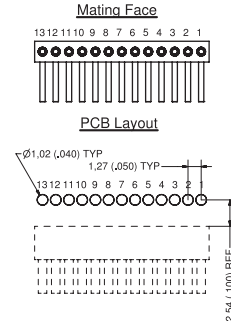
VERSION R1 : RIGHT ANGLE IN LINE

EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR

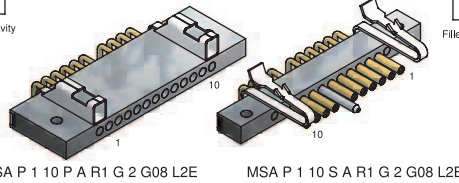
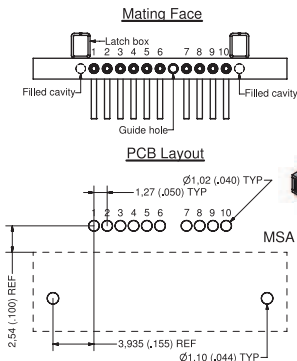


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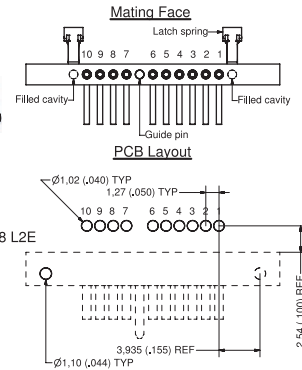


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MALE MICROSTRIP CONNECTOR



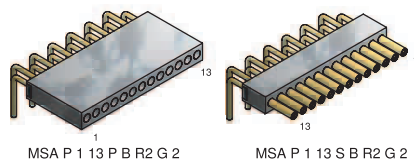
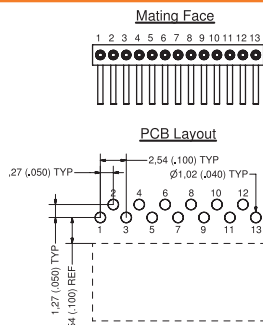
FEMALE MICROSTRIP CONNECTOR



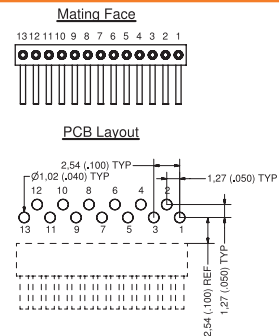
VERSION R2 : RIGHT ANGLE, .050" OFFSET

EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR

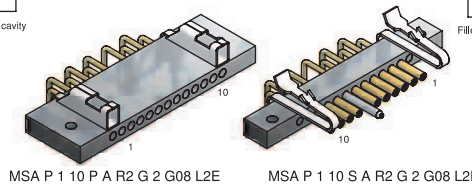
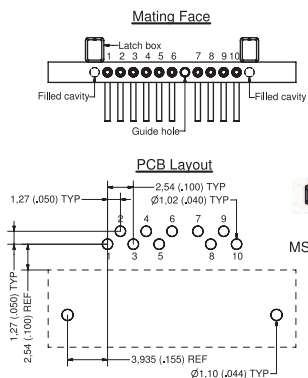


FEMALE MICROSTRIP CONNECTOR

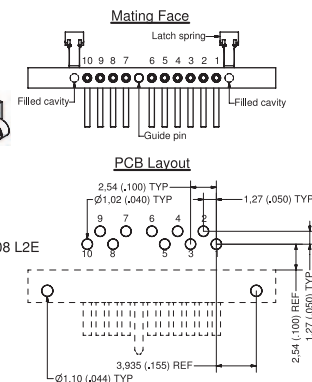


EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR



FEMALE MICROSTRIP CONNECTOR

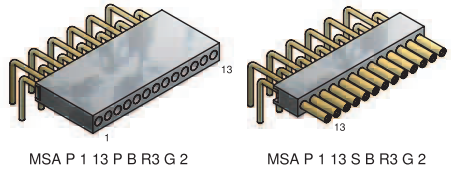
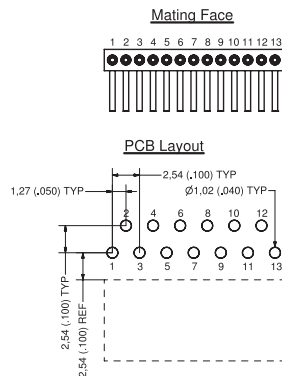


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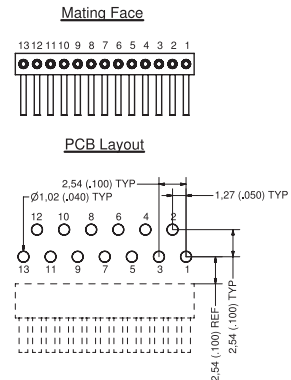
VERSION R3 : RIGHT ANGLE .100" OFFSET

EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR

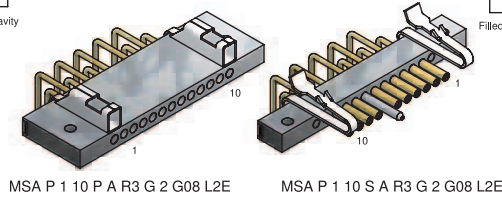
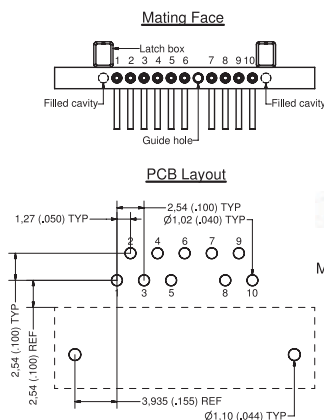


FEMALE MICROSTRIP CONNECTOR



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

MALE MICROSTRIP CONNECTOR



FEMALE MICROSTRIP CONNECTOR

