

SPECIFICATION

M50 Connectors

Materials

Mouldings:	High Temperature Plastic UL94V-0
Contacts:	Copper Alloy
Finish:	M50-3XX: Gold on contact area, Tin on tails M50-4XX: Gold

Electrical

Current rating:	1A per contact
Voltage rating:	150V AC
Voltage proof:	500V AC
Contact resistance:	40 mΩ max.
Insulation resistance:	1000 MΩ min.

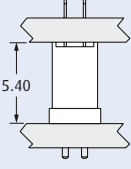
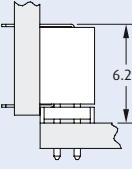
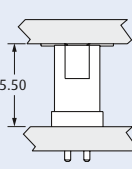
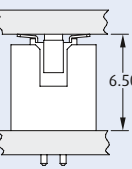
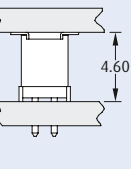
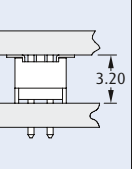
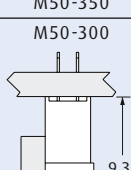
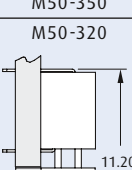
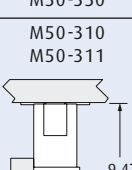
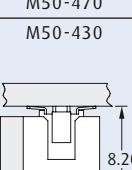
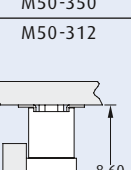
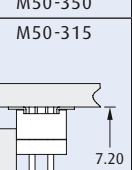
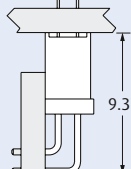
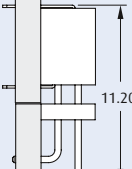
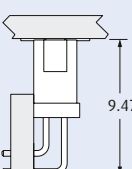
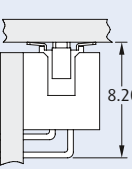
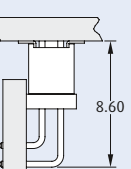
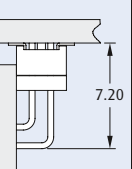
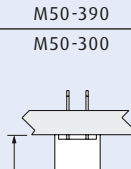
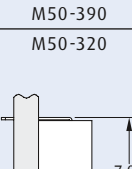
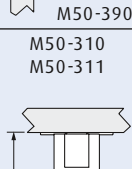
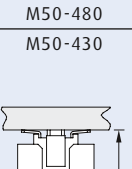
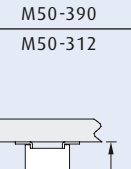
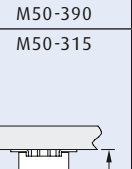
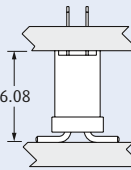
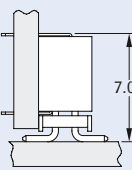
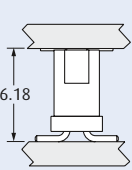
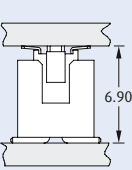
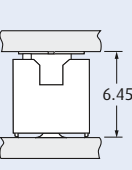
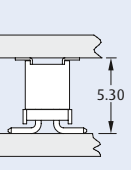
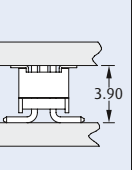






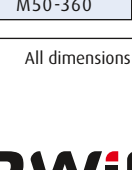
All preferred sizes of this range are held in stock.
Check www.harwin.com for availability.

Environmental

Operating temperature:	-40°C to +105°C
Solderability:	260°C for 3 seconds
Soldering heat resistance:	260°C for 5 seconds

Mechanical

Durability:	M50-315: 600 operations M50-300, 311: 50 operations M50-4XX: 300 operations M50-3XX male: 600 operations
Insertion force (max.):	M50-3XX: 2.0N per contact M50-4XX: 0.6N per contact
Withdrawal force (min.):	M50-3XX: 0.3N per contact M50-4XX: 0.1N per contact
Vibration sensitivity:	10 – 55Hz, 1.5mm, 6 hours duration
Shock severity:	490m/s ² (50G) for 11 ms

MALE	FEMALE						
	VERTICAL PC TAIL	HORIZONTAL PC TAIL	VERTICAL SMT	VERTICAL SMT Single polarised	VERTICAL SMT Double polarised	VERTICAL SMT Low Profile	
	DIL	DIL	DIL	DIL	DIL	DIL	DIL
VERTICAL PC TAIL	M50-300 	M50-320 	M50-310 M50-311 	M50-430 	Contact technical@ harwin.com	M50-312 	M50-315 
	M50-350 	M50-350 	M50-350 	M50-470 		M50-350 	M50-350 
HORIZONTAL PC TAIL	M50-300 	M50-320 	M50-310 M50-311 	M50-430 	Contact technical@ harwin.com	M50-312 	M50-315 
	M50-390 	M50-390 	M50-390 	M50-480 		M50-390 	M50-390 
VERTICAL SMT	M50-300 	M50-320 	M50-310 M50-311 	M50-430 	M50-432 	M50-312 	M50-315 
	M50-360 	M50-360 	M50-390 	M50-490 	M50-492 	M50-360 	M50-360 

www.harwin.com

All dimensions in mm.



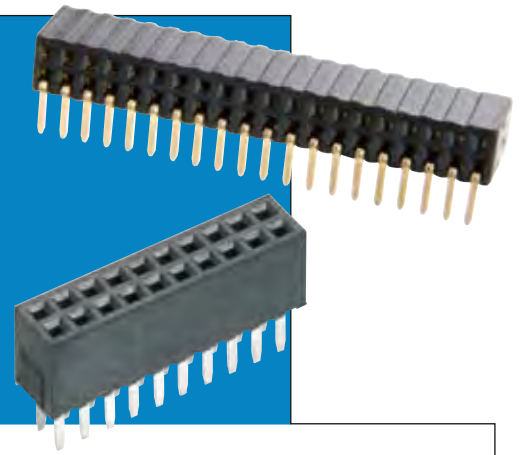
HARWIN

1.27mm (.050") PITCH

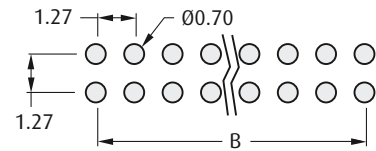
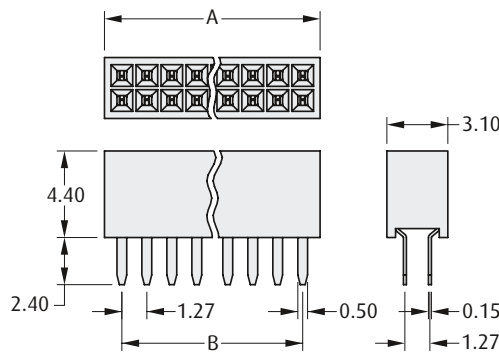
M50 Connectors

Female PC Tail

- ❖ A range of 1.27mm pitch female connectors, for vertical and horizontal board-to-board applications.
- ❖ Suitable for use with male connectors on pages 95 to 96.
- ❖ Horizontal connector has two point solder fixing for connector rigidity.

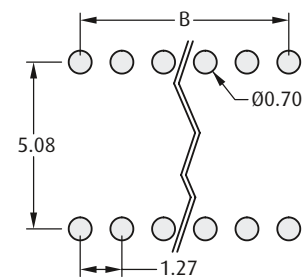
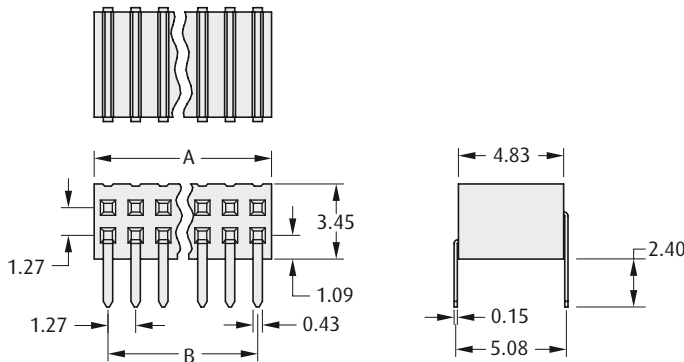


VERTICAL



Recommended PC Board Pattern

HORIZONTAL



Recommended PC Board Pattern

CALCULATION

A	$B + 1.77$
B	$1.27 \times (\text{No. of ways per row} - 1)$

HOW TO ORDER

M50 - 3 X 0 XX 45

SERIES CODE

TYPE

0	Vertical
2	Horizontal

NO. OF WAYS PER ROW

03 to 50	Vertical
03 to 40	Horizontal

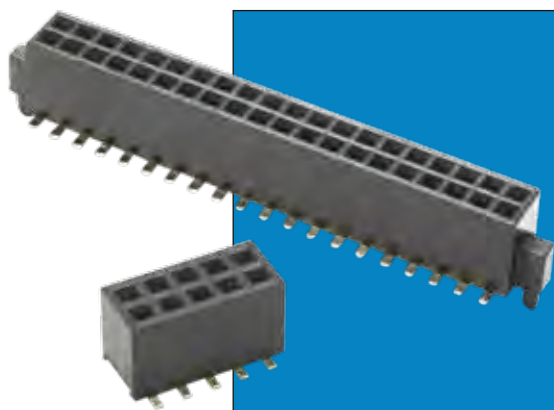
FINISH

45	Gold	PG
----	------	----

All dimensions in mm.

www.harwin.com





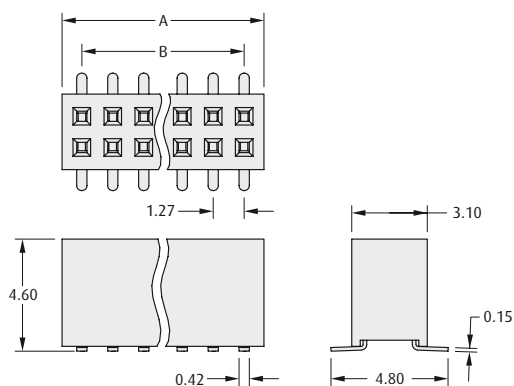
M50 Connectors

Female Vertical Surface Mount

- ❖ Locating pegs (posts) available to ensure correct positioning on the board.
- ❖ Suitable for use with male connectors on pages 95 to 96.
- ❖ Alternative height connectors available on page 94.

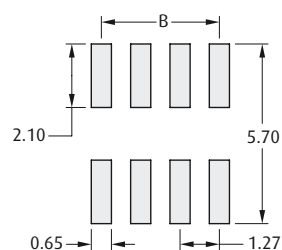
1.27mm (.050") PITCH

WITHOUT POST



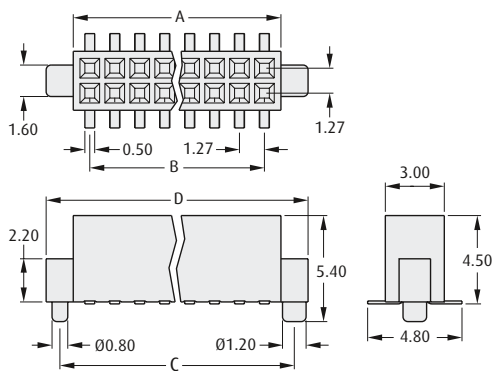
CALCULATION

A	$B + 1.62$
B	$1.27 \times (\text{No. of ways per row} - 1)$



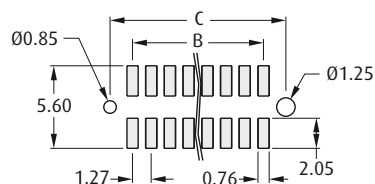
Recommended PC Board Pattern

WITH POST



CALCULATION

A	$B + 1.67$
B	$1.27 \times (\text{No. of ways per row} - 1)$
C	$B + 3.04$
D	$B + 4.43$



Recommended PC Board Pattern

HOW TO ORDER

M50 - 31 X XX XX

SERIES CODE

TYPE

0	Without Posts
1	With Posts

NO OF WAYS PER ROW

03 to 50	Without Posts
05 to 12, 15, 20, 25, 30, 35, 40, 45, 50	With Posts

FINISH

42	Gold + Tin (M50-311)	PG
45	Gold (M50-310)	PG

www.harwin.com

All dimensions in mm.

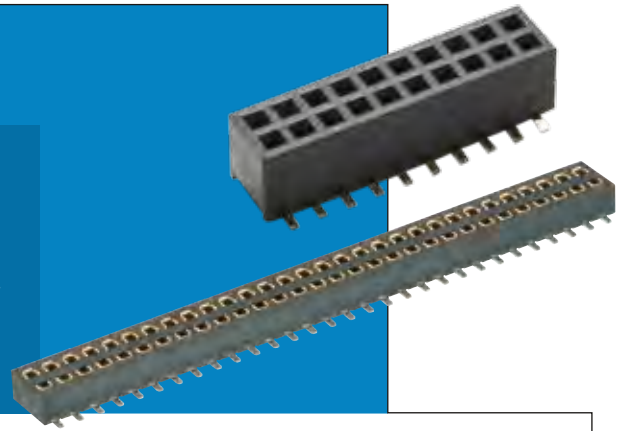


HARWIN

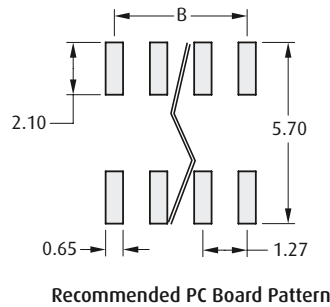
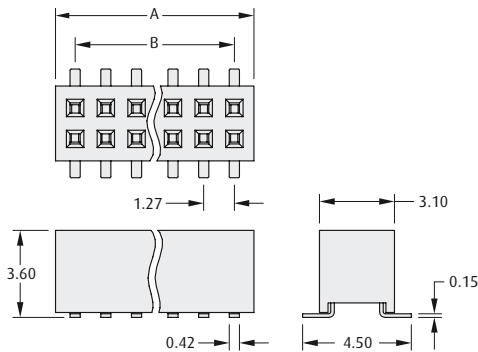
M50 Connectors

Female Vertical Surface Mount, Low Profile

- ❖ Suitable for use with male connectors on pages 95 to 96.
- ❖ Locating pegs (posts) available to ensure correct positioning on the board.
- ❖ Dual entry connector can be used as either top or bottom entry.



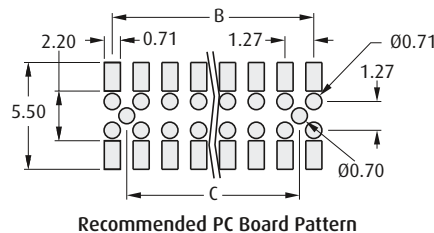
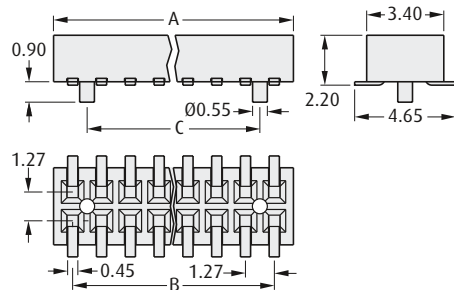
3.6mm HIGH WITHOUT POSTS



CALCULATION

A	$B + 1.73$
B	$1.27 \times (\text{No. of ways per row} - 1)$

2.2mm HIGH WITH POSTS, DUAL ENTRY



CALCULATION

A	$B + 1.67$
B	$1.27 \times (\text{No. of ways per row} - 1)$
C	$B - 1.27$

HOW TO ORDER

M50 - 31 X XX XX

SERIES CODE

TYPE

2	3.6mm High without posts
5	2.2mm high with posts, dual entry

FINISH

42	Gold + Tin (M50-315)	
45	Gold (M50-312)	

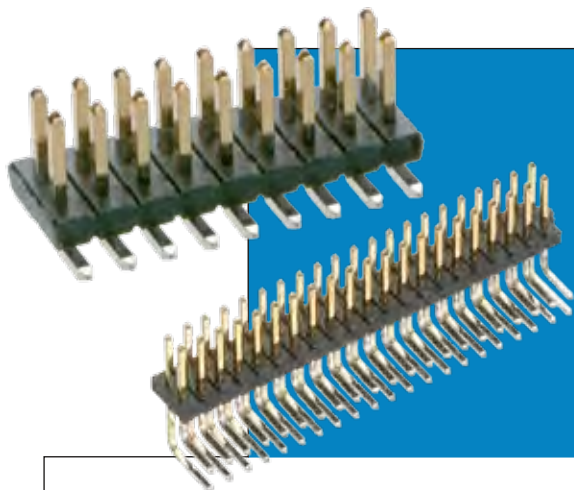
NO OF WAYS PER ROW

03 to 50	M50-312
03 to 50	M50-315

All dimensions in mm.

www.harwin.com





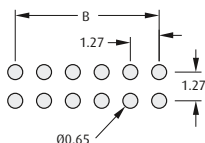
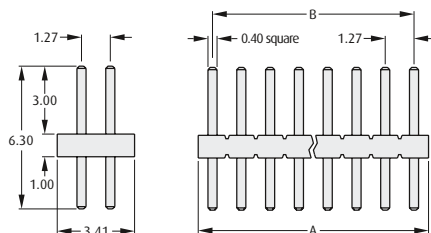
M50 Connectors

Male Vertical & Horizontal

- ❖ Suitable for use with female connectors on pages 92 to 94.
- ❖ Also available with variable dimensions, see page 96.
- ❖ Additional number of ways available on request.

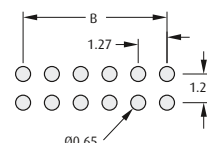
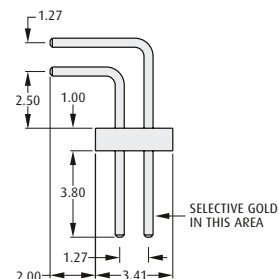
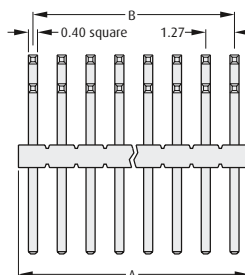
1.27mm (.050") PITCH

VERTICAL PC TAIL



Recommended PC Board Pattern

HORIZONTAL PC TAIL

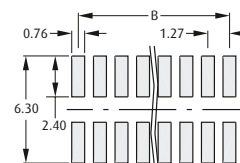
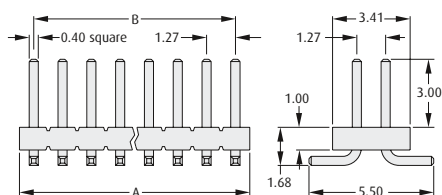


Recommended PC Board Pattern

CALCULATION

A	1.27 x No. of ways per row
B	1.27 x (No. of ways per row - 1)

VERTICAL SMT



Recommended PC Board Pattern

HOW TO ORDER

M50 - 3 X 0 XX 42

SERIES CODE

TYPE

5	Vertical PC Tail
6	Vertical SMT
9	Horizontal PC Tail

FINISH

42

Gold + Tin



NO OF WAYS PER ROW

05 to 12, 15, 20, 25, 30, 35, 40, 45, 50

www.harwin.com

All dimensions in mm.

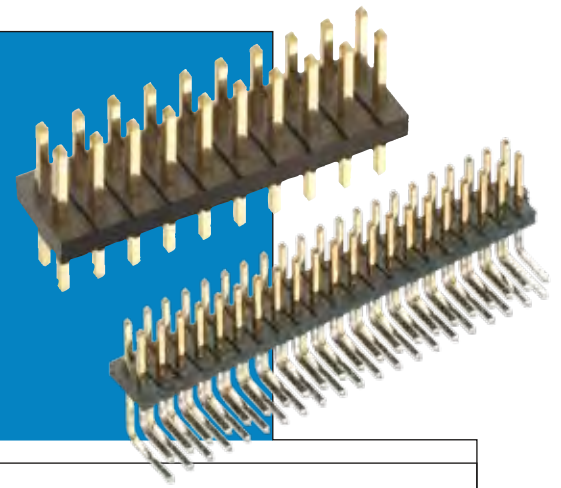


HARWIN

M50 Connectors

Pin Header Variants

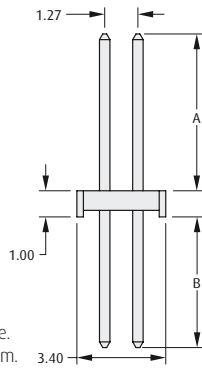
- ❖ Harwin offers the ultimate flexibility 'Standard Variant Pin Headers'. Use the order code below to create application-specific connectors.
- ❖ Contact technical@harwin.com for further information.
- ❖ Suitable for use with female connectors on pages 92 to 94.



TERMINATION STYLES

Vertical PC Tail

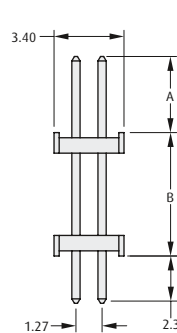
W SERIES



Pin section is 0.40mm square.
PCB mounting hole is 0.70mm.

Extended PC Tail

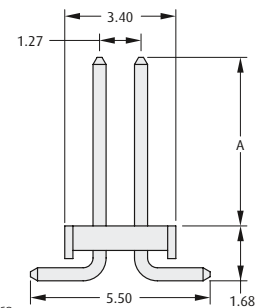
F SERIES



Pin section is 0.40mm square.
PCB mounting hole is 0.70mm.

Vertical SMT

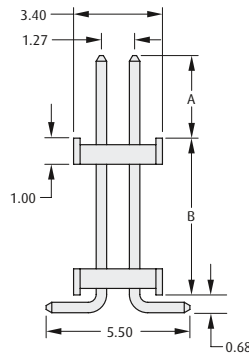
S SERIES



Pin section is 0.40mm square.
For PCB pad layout see page 93.
B dimension is '0'.

Extended SMT

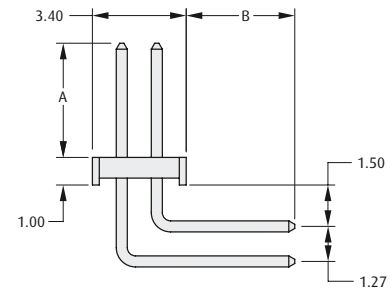
T SERIES



Pin section is 0.40mm square.
For PCB pad layout see page 93.

Horizontal PC Tail

J SERIES



Pin section is 0.40mm square.
PCB mounting hole is 0.70mm.

HOW TO ORDER

M50 - XXX XXX X XX 45

SERIES CODE

DIMENSION A

Eg. 7.8mm = 078

DIMENSION B

Eg. 5.0mm = 050

FINISH

45

Gold



NO. OF WAYS PER ROW

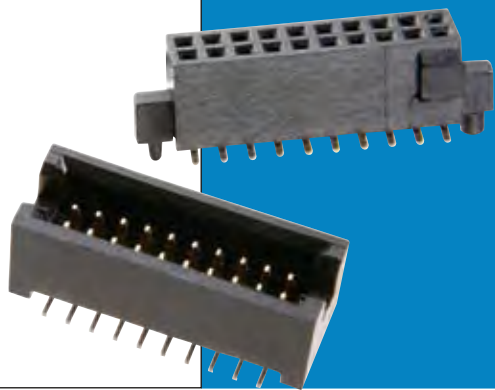
02 to 40

DOUBLE ROW	
W	Vertical PC Tail
F	Extended PC Tail
S	Vertical SMT
T	Extended SMT
J	Horizontal PC Tail

All dimensions in mm.

www.harwin.com





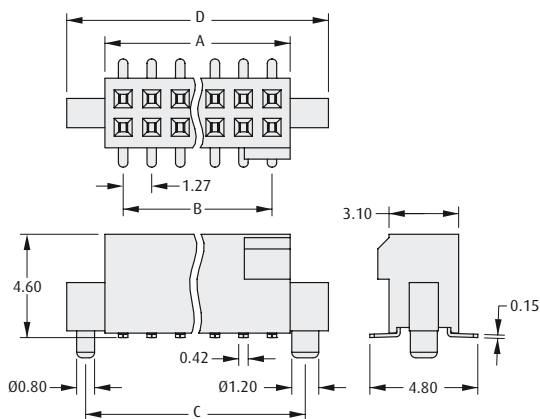
M50 Connectors

Vertical Surface Mount, Single Polarised

- ❖ Mating connectors in Surface Mount format.
- ❖ Female connector is also suitable for use with male connectors on page 98.
- ❖ Single Polarisation to prevent mis-mating.
- ❖ Female connector has locating pegs to ensure correct positioning on the board.
- ❖ Shrouded for additional pin protection.

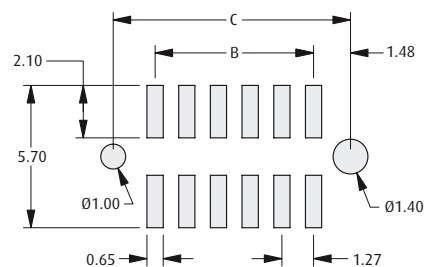
1.27mm (.050") PITCH

FEMALE



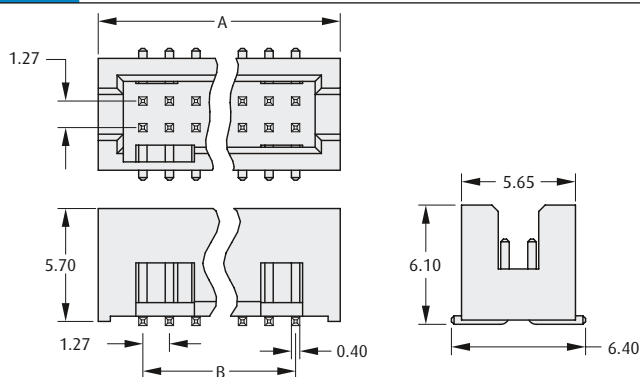
CALCULATION

A	$B + 1.62$
B	$1.27 \times (\text{No. of ways per row} - 1)$
C	$B + 3.15$
D	$B + 5.02$



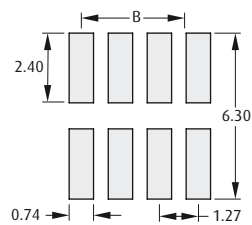
Recommended PC Board Pattern

MALE



CALCULATION

A	$B + 4.47$
B	$1.27 \times (\text{No. of ways per row} - 1)$



Recommended PC Board Pattern

HOW TO ORDER

M50 - 4 X 0 XX 45

SERIES CODE

TYPE

3	Female
9	Male

NO OF WAYS PER ROW

03 to 50	Female
05 to 50	Male

FINISH

45 Gold

www.harwin.com

All dimensions in mm.

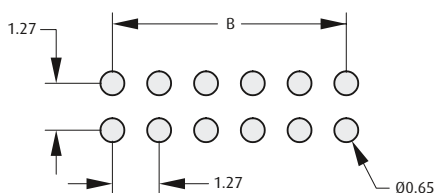
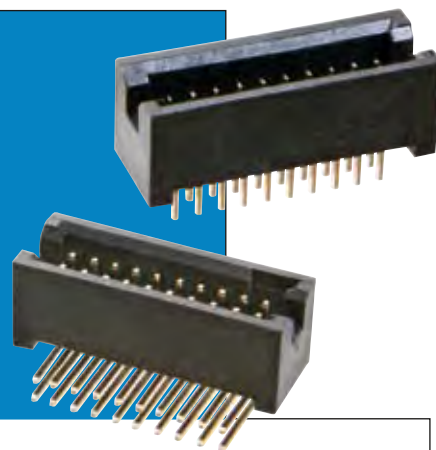


HARWIN

M50 Connectors

Male PC Tail, Single Polarised

- ❖ PC Tail male connectors suitable for use with female connector M50-430 (page 97).
- ❖ Single polarisation to prevent mis-mating.
- ❖ Shrouded for additional pin protection.

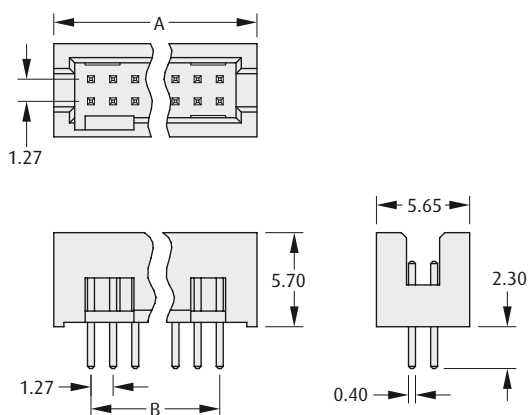


Recommended PC Board Pattern

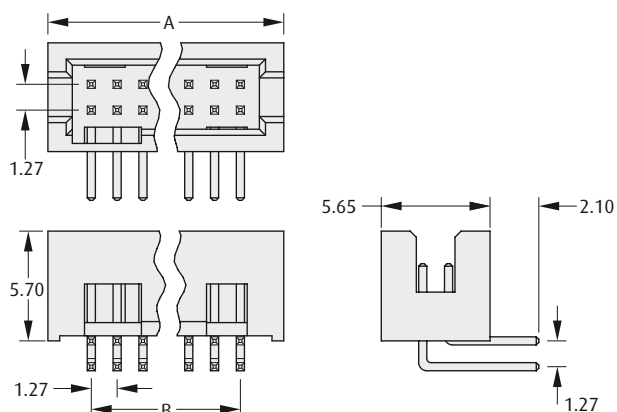
CALCULATION

A	$B + 4.47$
B	$1.27 \times (\text{No. of ways per row} - 1)$

VERTICAL



HORIZONTAL



HOW TO ORDER

M50 - 4 X 0 XX 45

SERIES CODE

TYPE

7	Vertical
8	Horizontal

FINISH

45 Gold

NO OF WAYS PER ROW

05 to 40

All dimensions in mm.

www.harwin.com

