

PCB Connectors

Contents

M40 Series: 1.00mm pitch Connectors	
Board-To-Board M40-600/620 Connectors	220
Board-To-Board M40-310/320 Connectors	222
Cable-To-Board M40 Connectors	224
M30 Series: 1.25mm pitch Connectors	
Specifications	230
Female Cable Connectors	231
Male PCB Connectors	234
Archer: 1.27mm pitch Connectors	
M50 Specifications	235
M50 Female PCB Connectors	237
M50 Jumper Sockets	242
M50 Male PCB Connectors	243
M50 Polarised	247
IDC Female Cable Connectors	251
IDC Mating Male PCB Connectors	252
IDC Male Cable Connectors	253
M52 Specifications	254
M52 Female PCB Connectors	255
M52 Male PCB Connectors	257

M40-600/620 Connectors Specification

- ❖ A range of double row 1.00mm pitch SMT male and female connectors for board-to-board stacking.

❖ Materials

Housings:	High Temp Thermoplastic, UL94V-0
Contacts:	Phosphor Bronze
Finish:	Tin

❖ Electrical

Current:	0.5A per contact
Working voltage:	150V AC
Voltage proof:	250V AC
Contact resistance:	50mΩ max
Insulation resistance:	500MΩ min

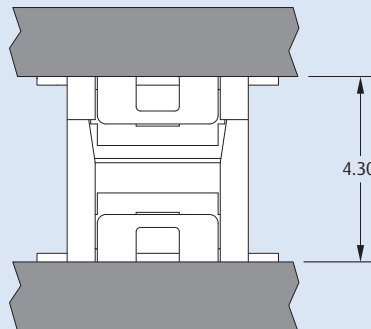
❖ Mechanical

Durability:	30 operations
Insertion force (max):	2.7N per contact
Withdrawal force (min):	0.4N per contact

❖ Environmental

Operating temperature:	-20°C to +125°C
Solderability:	210°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

Mating Profile

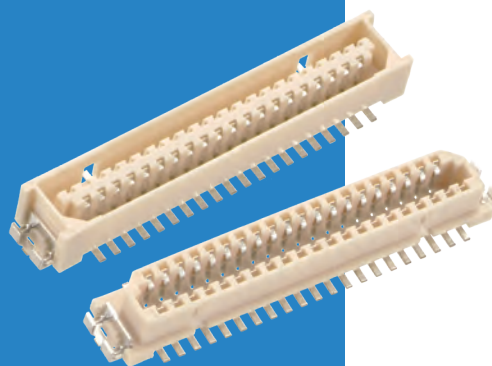


All dimensions in mm.

M40-600/620 Connectors

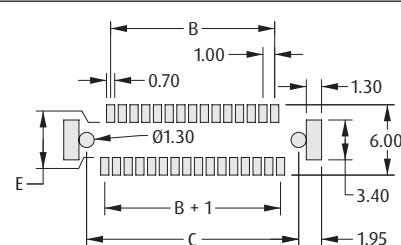
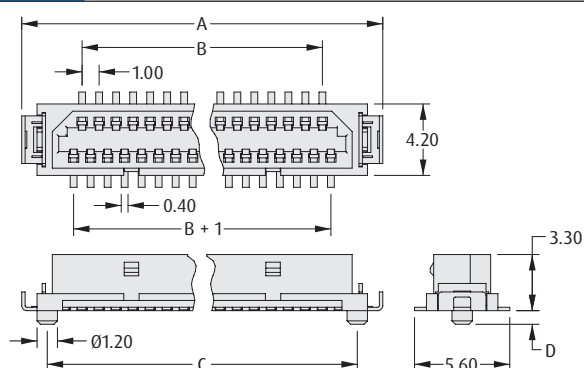
Vertical Surface Mount

- ❏ Locating pegs to ensure correct positioning onto the board.
- ❏ Polarized to prevent mis-mating.
- ❏ Staggered pin-out to help board layout.



1mm (.039") PITCH

FEMALE

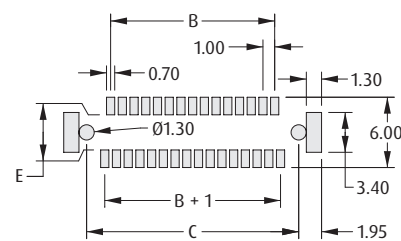
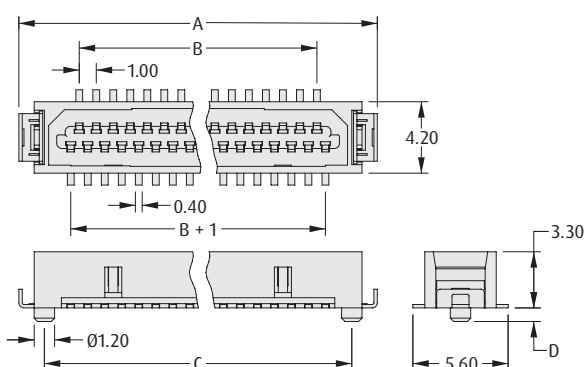


Recommended PC Board Pattern

CALCULATION

A	$B + 7.1$
B	$(\text{Total No. Of Contacts} - 3) / 2$
C	$B + 4.1$
D	1.00mm for 9, 15, 21, 25 way; otherwise 0.80mm
E	1.84mm for 9, 15, 21, 25 way; otherwise 3.00mm

MALE



Recommended PC Board Pattern

HOW TO ORDER

M40 - 6 X 0 XX XX X

SERIES CODE

GENDER

0	Male
2	Female

PACKAGING

Blank	Loose
R	Tape & Reeled

FINISH

46	Tin
-----------	-----

TOTAL NO. OF CONTACTS

09, 15, 21, 25, 31, 41, 51

All dimensions in mm.

M40-310/320 Connectors Specification

❖ A range of double row 1.00mm pitch SMT pin header and socket connectors.

❖ Materials

Housings:	High Temp Thermoplastic, UL94V-0
Contacts	
Male:	Brass
Female:	Phosphor Bronze
Finish:	Gold

❖ Electrical

Current:	1.0A per contact
Voltage proof:	500V AC
Contact resistance:	30mΩ max
Insulation resistance:	1,000MΩ min

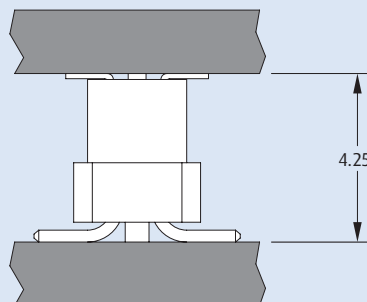
❖ Mechanical

Durability:	300 operations
Insertion force (max):	1.5N per contact
Withdrawal force (min):	0.1N per contact
Vibration sensitivity:	50 – 2000Hz, 45 minutes duration
Shock severity:	294m/s ² (30G) for 11ms

❖ Environmental

Operating temperature:	-40°C to +105°C
Solderability:	245°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

Mating Profile

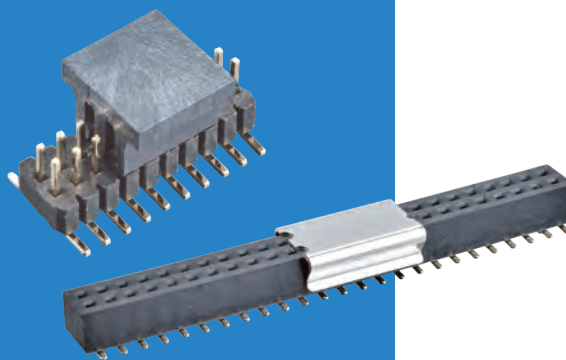


All dimensions in mm.

M40-310/320 Connectors

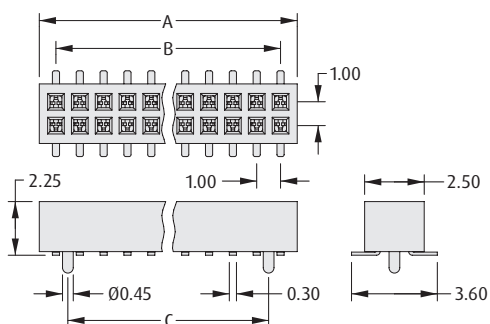
Vertical Surface Mount

- ❖ Locating pegs to ensure correct positioning onto the board.
- ❖ Supplied in tape and reel packaging with pick and place caps as standard.
- ❖ Twin beam female connector for higher durability.



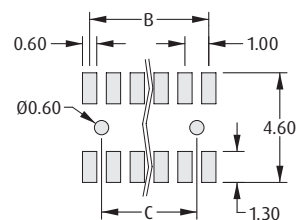
1mm (.039") PITCH

FEMALE



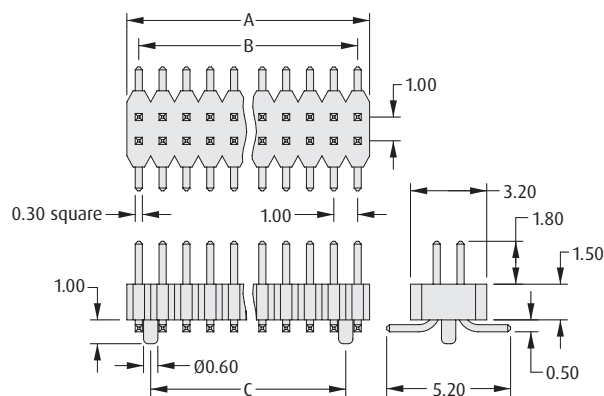
CALCULATION

A	$B + 1.4$
B	No. of contacts per row - 1
C	No. of contacts per row - 2



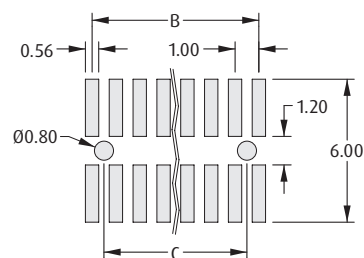
Recommended PC Board Pattern

MALE



CALCULATION

A	No. of contacts per row
B	No. of contacts per row - 1
C	No. of contacts per row - 2



Recommended PC Board Pattern

HOW TO ORDER

M40 - 3 X 0 XX 45 R

SERIES CODE

GENDER

1	Female
2	Male

TAPE & REELED

FINISH

45 Gold

NO. OF CONTACTS PER ROW

03, 04, 05, 06, 08, 10, 20, 25

All dimensions in mm.

M40 Cable-to-Board Specification

- A range of cable-to-board connectors on 1.00mm pitch - SMT male connectors and cable female connectors in single and double row options.

Materials

Housings	
SMT Connectors:	High Temp Thermoplastic, UL94V-0
Cable Housings:	Thermoplastic, UL94V-0
Contacts:	Phosphor Bronze
Finish:	Tin

Electrical

Current:	1A per contact
Working voltage:	50V AC/DC
Voltage proof:	500V AC/DC
Contact resistance:	30mΩ max
Insulation resistance:	100MΩ min

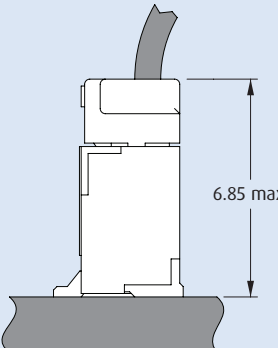
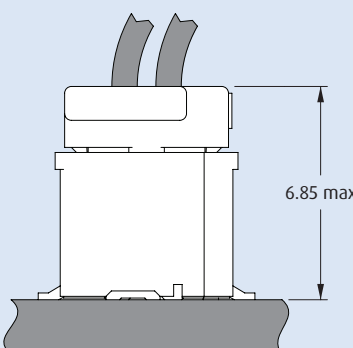
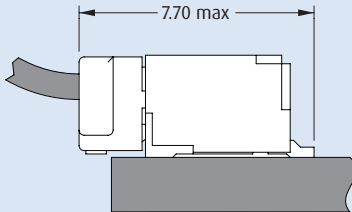
Mechanical

Durability:	50 operations
Insertion force (max):	2.0N per contact
Withdrawal force (min):	0.4N per contact
Crimped wire retention (min)	
28 AWG wire:	12.7N
30 AWG wire:	9.8N
32 AWG wire:	4.9N
Vibration sensitivity:	10 – 55Hz, 1.5mm, 6 hours duration
Shock severity:	490m/s ² (50G) for 11ms

Environmental

Operating temperature:	-25°C to +85°C
Solderability:	245°C for 5 seconds
Soldering heat resistance:	260°C for 5 seconds

Mating Profiles

		FEMALE CRIMP	
		SINGLE ROW	DOUBLE ROW
MALE	VERTICAL SMT		
	HORIZONTAL SMT		

All dimensions in mm.

1mm (.039") PITCH

- ❖ Crimp contacts or pre-cabled contacts are ordered separately - see following pages.
- ❖ Crimped contacts on wires are inserted into rear of connector housing - no additional tooling required.



All dimensions in mm.

M40 Cable-to-Board Connectors

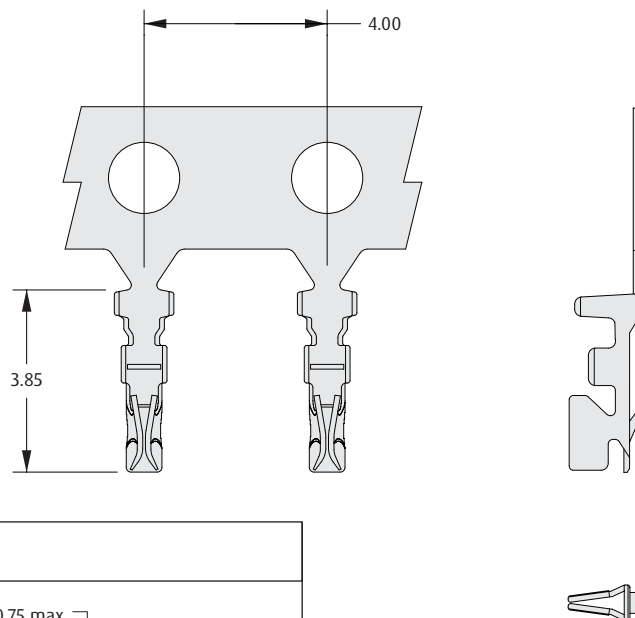
Female Crimp Contacts

- ❖ Open crimp design, ideal for automation.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Pre-crimped contacts with wire attached shown on following page.
- ❖ Requires crimp machine with applicable tooling for crimping to wires.

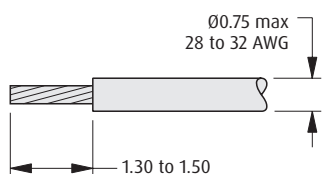


CONTACTS

- ❖ Order code is for one reel of 15,000 contacts.



WIRE STRIPPING DETAIL



HOW TO ORDER

M40 - 100 00 46

SERIES CODE

FINISH

46

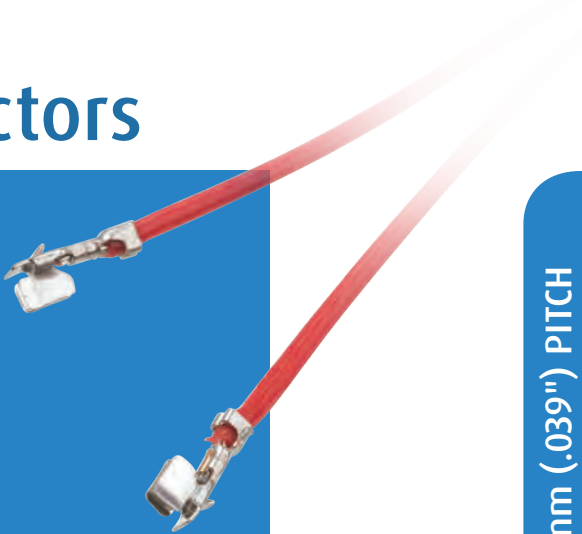
Tin

All dimensions in mm.

M40 Cable-to-Board Connectors

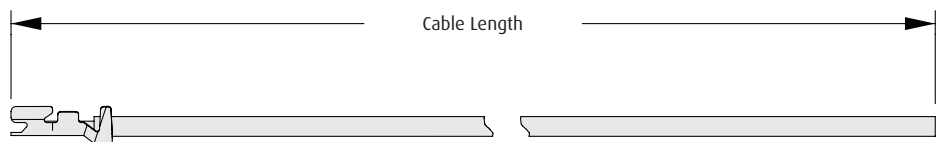
Female Crimp Contacts - Pre-Crimped Wires

- ❖ Female crimp contacts pre-assembled with a choice of wire sizes and lengths.
- ❖ PVC insulated multi-strand tinned copper equipment wire to UL1571.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Ideal for prototype and pre-production applications.
- ❖ Individual contacts without wire shown on previous page.

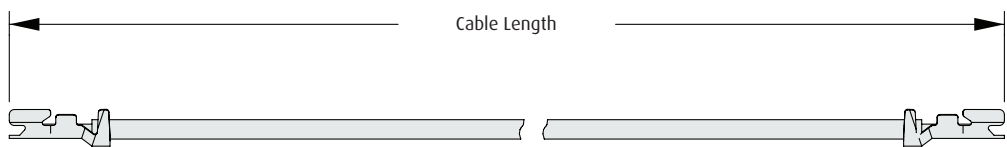


1mm (.039") PITCH

FEMALE SINGLE ENDED



FEMALE - FEMALE



HOW TO ORDER

M40 - 9XX 00 99

SERIES CODE

CABLE COLOR

99 Red

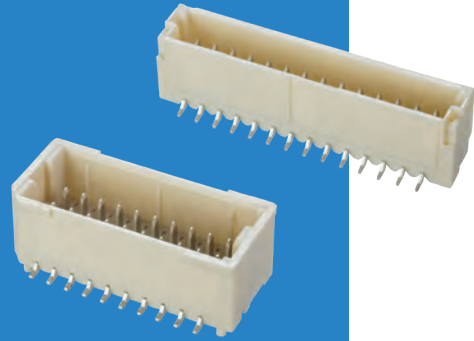
SINGLE ENDED	FEMALE - FEMALE	
900	904	28 AWG cable, 150mm length
901	905	32 AWG cable, 150mm length
902	906	28 AWG cable, 300mm length
903	907	32 AWG cable, 300mm length
910		30 AWG cable, 150mm length
911		30 AWG cable, 300mm length

All dimensions in mm.

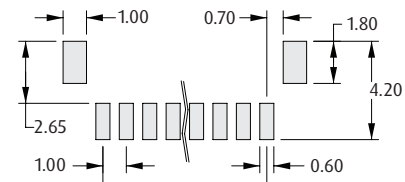
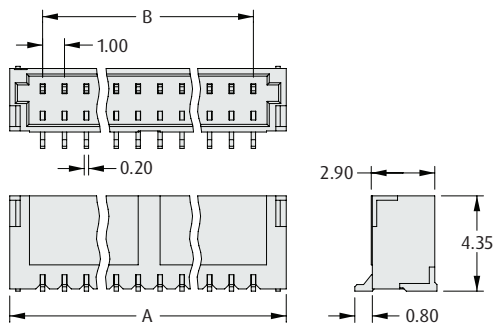
M40 Cable-to-Board Connectors

Male Vertical Surface Mount

- ❖ Shrouded male connectors.
- ❖ Double row connector features locating pegs to ensure correct positioning onto the board.
- ❖ Tape and Reeled packaging is supplied fitted with pick and place cap.



SINGLE ROW

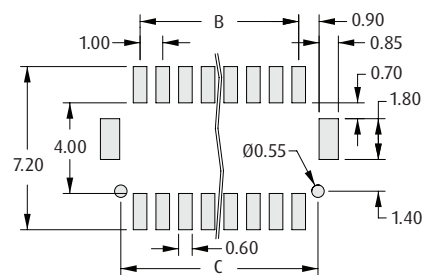
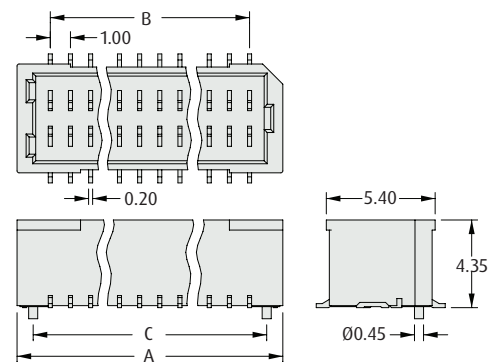


Recommended PC Board Pattern

CALCULATION

A	$B + 3$
B	No. of contacts per row - 1

DOUBLE ROW



Recommended PC Board Pattern

CALCULATION

A	$B + 3$
B	No. of contacts per row - 1
C	$B + 1.7$

HOW TO ORDER

M40 - 30 X XX 46 X

SERIES CODE

TYPE

1	Single Row
2	Double Row

PACKAGING

Blank	Loose (double row only)
R	Tape & Reeled

FINISH

46	Tin
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NO. OF CONTACTS PER ROW

02 to 20	Single Row
05 to 08, 10, 12, 15	Double Row

All dimensions in mm.

M40 Cable-to-Board Connectors

Male Horizontal Surface Mount

- Shrouded male connectors.
- Tape and Reeled packaging - does not require pick and place cap.

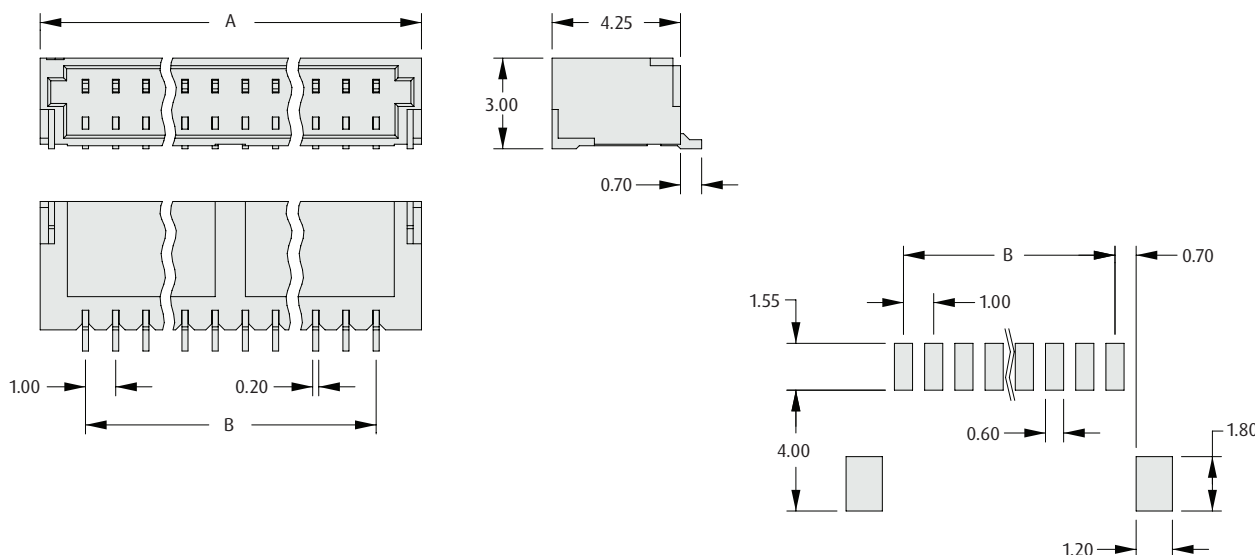


1mm (.039") PITCH

SINGLE ROW

CALCULATION

A	$B + 3$
B	No. of contacts per row - 1



Recommended PC Board Pattern

HOW TO ORDER

M40 - 401 XX 46 R

SERIES CODE

NO. OF CONTACTS PER ROW

02 to 20

PACKAGING

R Tape & Reeled

FINISH

46 Tin

All dimensions in mm.

M30 Connectors Specification

❖ A range of 1.25mm pitch male and female connectors, for cable-to-board applications.

❖ Material

Housings	
SMT:	Nylon 6T, UL94V-0
Others:	Nylon 66, UL94V-0
Contacts	
Male:	Brass
Female:	Phosphor Bronze
Finish:	Tin

❖ Electrical

Current:	1A per contact
Working voltage:	150V AC
Voltage proof:	500V AC/DC
Contact resistance:	30mΩ max
Insulation resistance:	500MΩ min

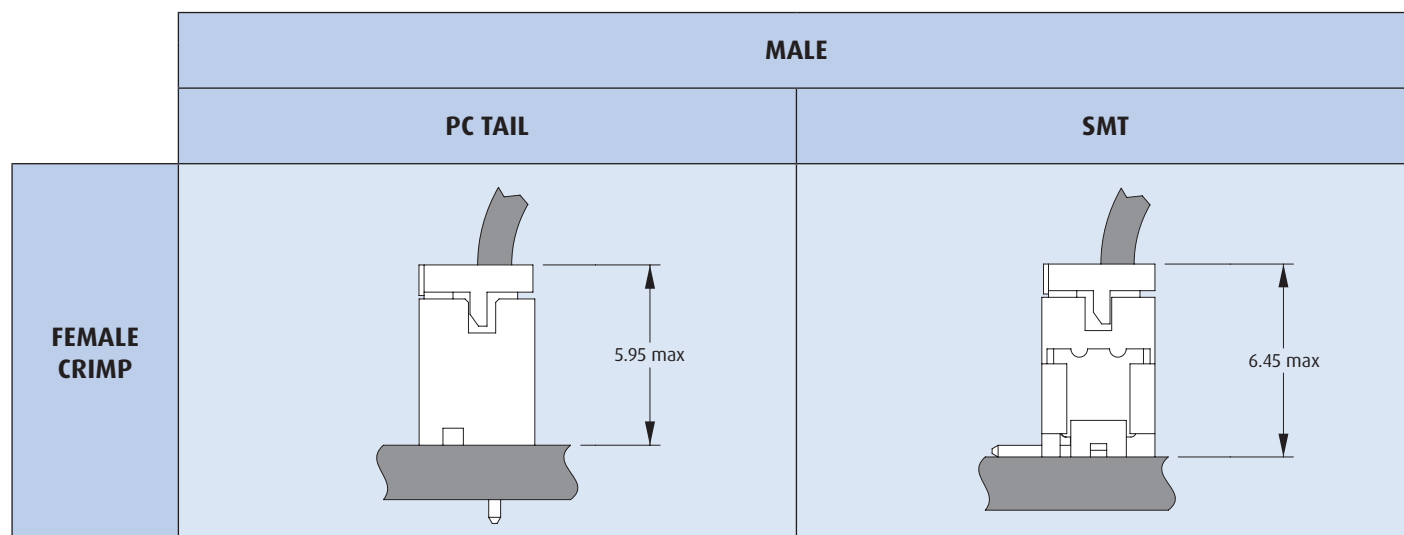
❖ Mechanical

Durability:	50 operations
Insertion force (max):	4.9N per contact
Withdrawal force (min):	0.5N per contact
Crimp retention (min):	4.9N per contact
Crimped wire retention (min)	
26 AWG wire:	19.6N
28 AWG wire:	9.8N
30 AWG wire:	7.8N
Vibration sensitivity:	10 – 55Hz, 1.5mm, 6 hours duration
Shock severity:	490m/s ² (50G) for 11ms

❖ Environmental

Operating temperature:	-25°C to +85°C
Solderability:	245°C for 5 seconds
Soldering heat resistance	
PC Tail:	250°C for 5 seconds
SMT:	260°C for 10 seconds

Mating Profiles

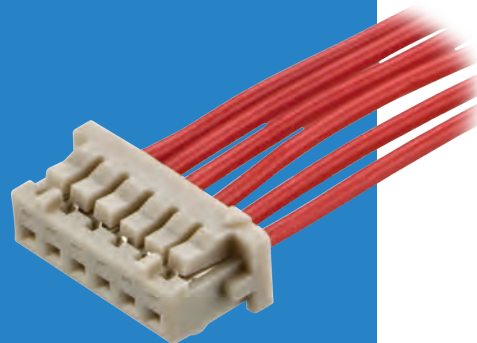


All dimensions in mm.

M30 Connectors

Female Crimp Housing

- ❖ Loose or reeled contacts.
- ❖ Crimp contacts or pre-cabled contacts are ordered separately - see the following pages.

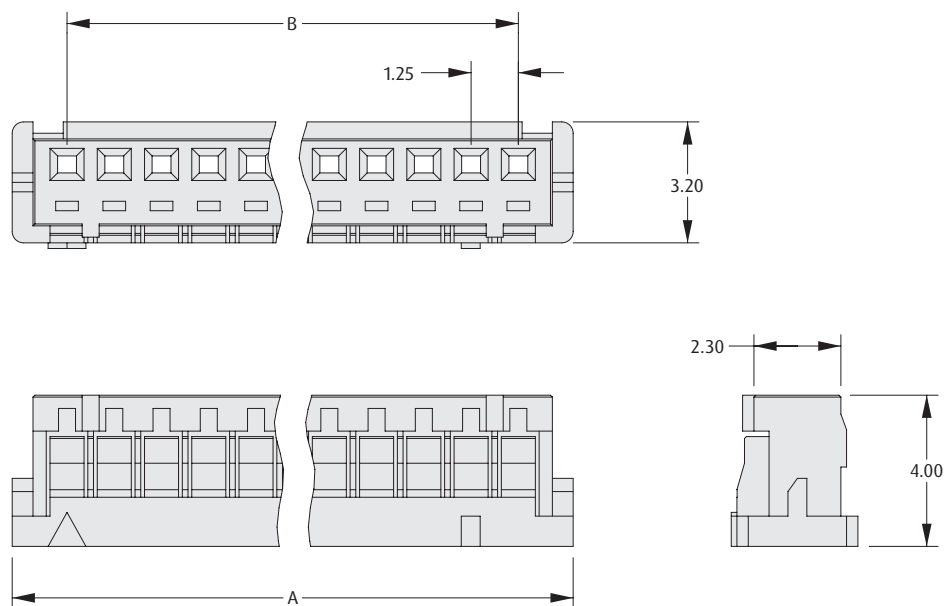


1.25mm (.049") PITCH

HOUSING

CALCULATION

A	$B + 2.9$
B	$1.25 \times (\text{No. of contacts per row} - 1)$



HOW TO ORDER

M30 - 110 XX 00

SERIES CODE

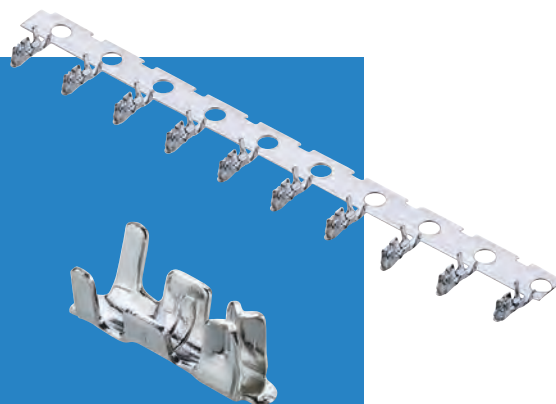
NO. OF CONTACTS PER ROW
02 to 15

All dimensions in mm.

M30 Connectors

Female Crimp Contacts

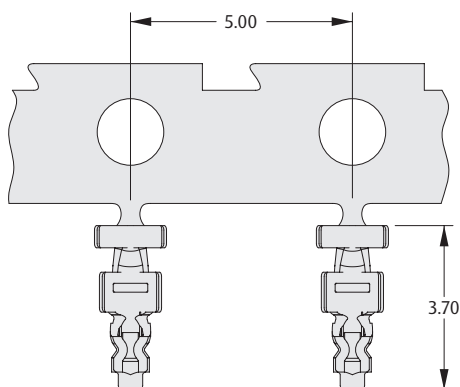
- ❖ Loose or reeled contacts.
- ❖ Open crimp design, ideal for automation.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Pre-crimped contacts with wire attached shown on following page.



CONTACTS

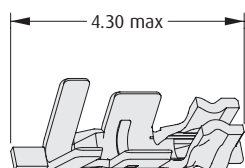
Reeled (continuous strip)

- ❖ Order code is for one reel of 10,000 contacts.



Loose (cropped)

- ❖ Order code is for one pack of 100 contacts.



HAND CRIMP TOOL

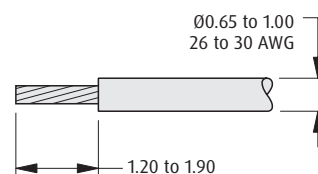
- ❖ Instruction sheet is available at www.harwin.com/instructions.
- ❖ For use with loose contacts.



ORDER CODE

Z30-021

WIRE STRIPPING DETAILS



HOW TO ORDER

M30 - 10 X 00 46

SERIES CODE

TYPE

5	Reeled contact
6	Loose contact

FINISH

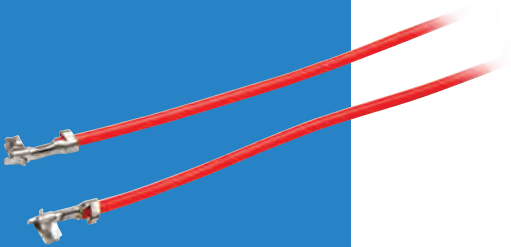
46 Tin

All dimensions in mm.

M30 Connectors

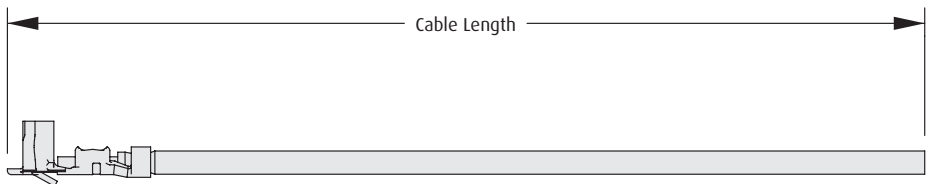
Female Crimp Contacts – Pre-Crimped Wires

- ❖ Female crimp contacts pre-assembled with a choice of wire sizes and lengths.
- ❖ PTFE-insulated, multi-strand silver-plated copper conductor equipment wire.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Ideal for prototype and pre-production applications.
- ❖ Individual contacts without wire shown on previous page.

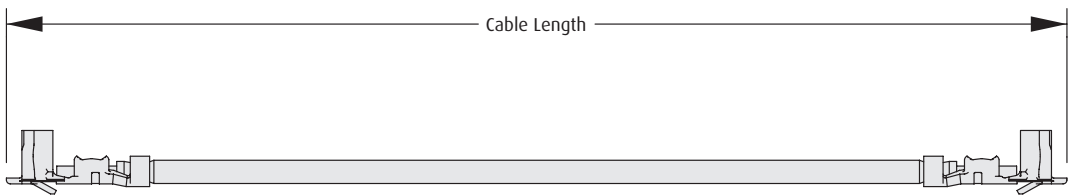


1.25mm (.049") PITCH

FEMALE SINGLE ENDED



FEMALE - FEMALE



HOW TO ORDER

M30 - 9XX 00 99

SERIES CODE

CABLE COLOR

99 Red

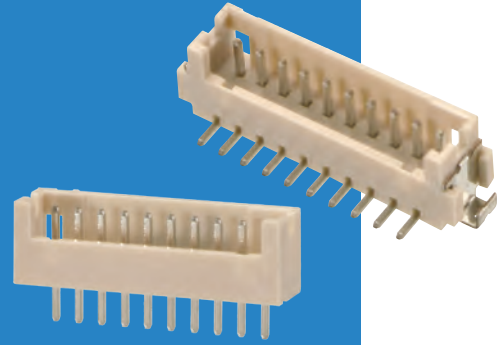
SINGLE ENDED	FEMALE - FEMALE	
900	904	26 AWG cable, 150mm length
901	905	30 AWG cable, 150mm length
902	906	26 AWG cable, 300mm length
903	907	30 AWG cable, 300mm length

All dimensions in mm.

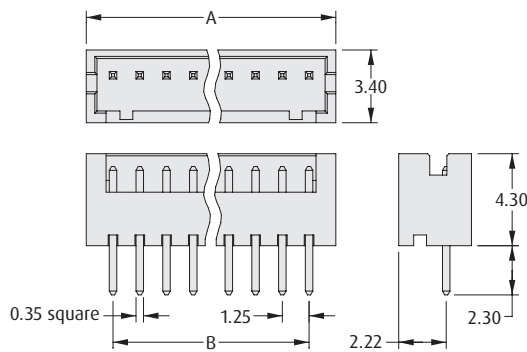
M30 Connectors

Male Vertical

- ❖ Shrouded male connectors.
- ❖ SMT version features metal solder-down tabs and locating pegs to ensure correct positioning onto the board.
- ❖ Tape and Reel option supplied fitted with Pick and Place cap.

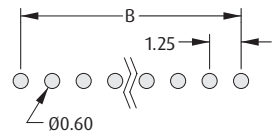


THROUGHBOARD



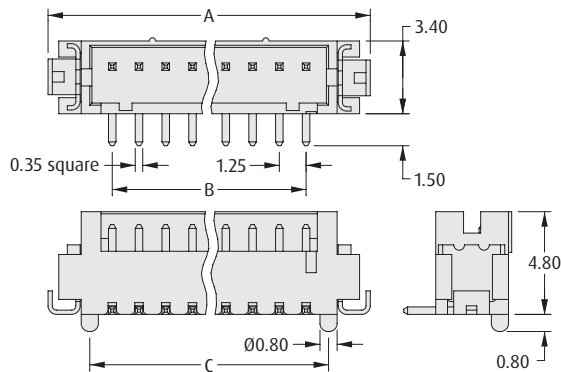
CALCULATION

A	$1.25 \times (\text{No. of contacts per row} + 1)$
B	$1.25 \times (\text{No. of contacts per row} - 1)$



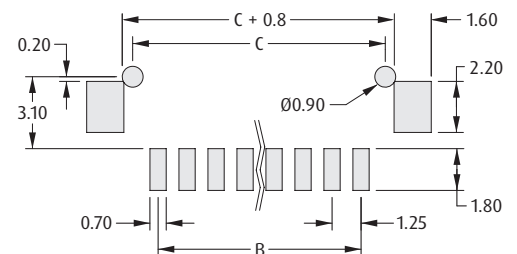
Recommended PC Board Pattern

SURFACE MOUNT



CALCULATION

A	$B + 6$
B	$1.25 \times (\text{No. of contacts per row} - 1)$
C	$B + 2.1$



Recommended PC Board Pattern

HOW TO ORDER

M30 - 6 X 0 XX XX X

SERIES CODE

TYPE

0	Surface Mount
1	PC Tail

PACKAGING

Blank	Loose
R	Tape & Reeled (M30-600)

FINISH

46	Tin
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NO. OF CONTACTS PER ROW

02 to 15

All dimensions in mm.

Archer Connectors - M50 Specification

- ❖ 1.27mm pitch male pin headers (with 0.4mm square pins) and female sockets, for board-to-board connection.

❖ Materials

Housings:	High Temperature Plastic UL94V-0
Contacts:	Copper Alloy
Finish:	See individual pages

❖ Electrical

Current:	1A per contact
Voltage proof:	300V AC, 500V DC for 1 minute (see individual drawings)
Contact resistance:	30mΩ max
Insulation resistance:	500MΩ min

❖ Mechanical

Durability	
M50-310, 312, 491:	100 operations
M50-311:	600 operations
M50-315:	25 operations
M50-353, 363, 393:	500 operations
Others:	300 operations
Insertion force (max)	
M50-303, 313, 314:	1.17N per contact
Jumper sockets:	10.0N
Others:	2.0N per contact
Withdrawal force (min)	
Jumper sockets:	1.3N
Others:	0.1N per contact
Vibration sensitivity:	10 - 55Hz, 1.5mm, 6 hours duration
Shock severity:	294m/s ² (30G) for 11ms

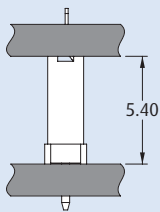
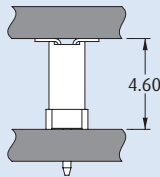
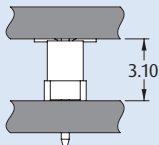
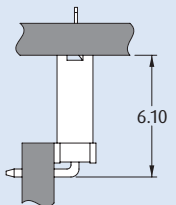
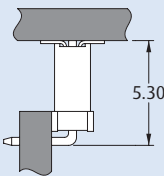
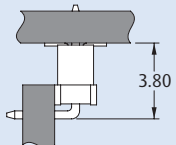
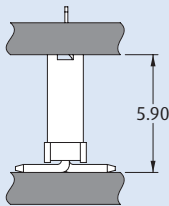
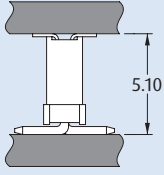
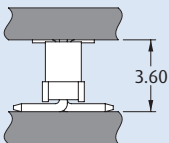
❖ Environmental

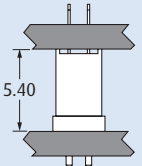
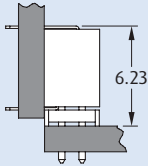
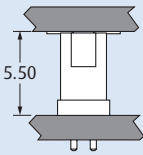
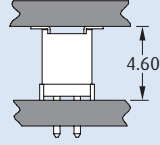
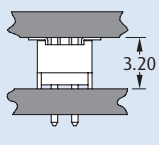
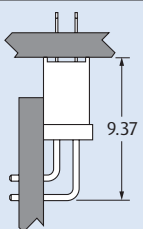
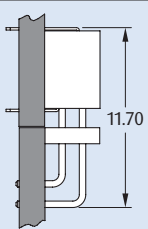
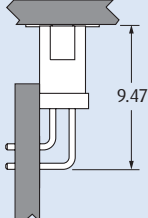
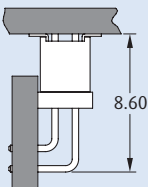
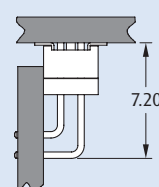
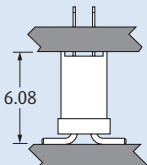
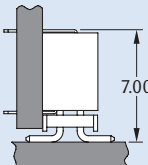
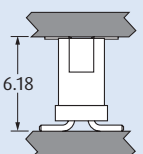
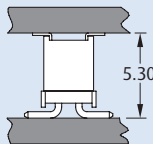
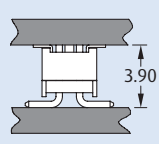
Operating temperature:	-40°C to +105°C
Solderability:	245°C for 5 seconds
Soldering heat resistance:	260°C for 5 seconds

1.27mm (.050") PITCH

Archer Connectors - M50 Mating Profiles

1.27mm (.050") PITCH

SINGLE ROW		FEMALE		
		VERTICAL PC TAIL	VERTICAL SMT	VERTICAL SMT Low Profile
MALE	VERTICAL PC TAIL			
	HORIZONTAL PC TAIL			
	VERTICAL SMT			

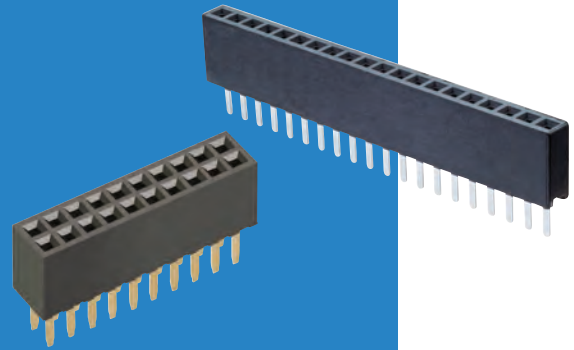
DOUBLE ROW		FEMALE				
		VERTICAL PC TAIL	HORIZONTAL PC TAIL	VERTICAL SMT	VERTICAL SMT Low Profile	
MALE	VERTICAL PC TAIL					
	HORIZONTAL PC TAIL					
	VERTICAL SMT					

All dimensions in mm.

Archer Connectors – M50

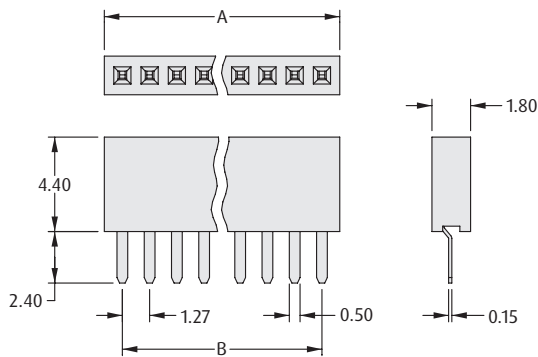
Female Vertical Throughboard

- Twin beam connector for higher durability.



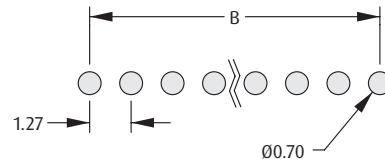
1.27mm (.050") PITCH

SINGLE ROW



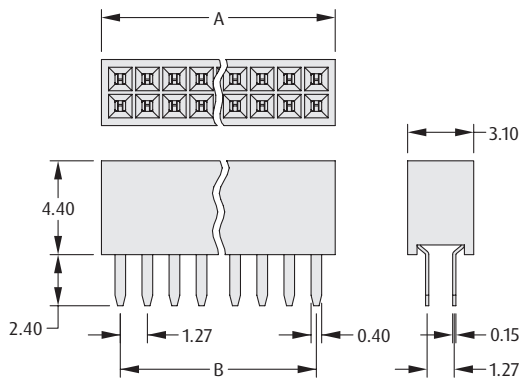
CALCULATION

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



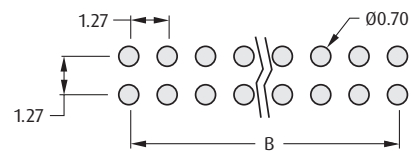
Recommended PC Board Pattern

DOUBLE ROW



CALCULATION

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



Recommended PC Board Pattern

HOW TO ORDER

SERIES CODE

M50 - 3 0 X XX XX

TYPE

0	Double Row
3	Single Row

FINISH

42	Gold + Tin (Single Row)
45	Gold (Double Row)

NO. OF CONTACTS PER ROW

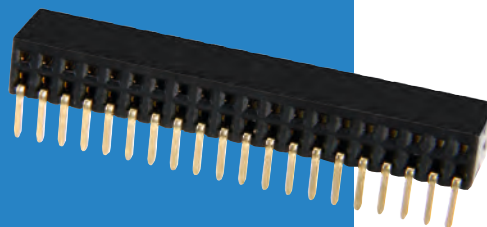
02 to 06, 08, 10, 20	Single Row
03 to 15, 20, 25, 50	Double Row

All dimensions in mm.

Archer Connectors – M50

Female Horizontal Throughboard

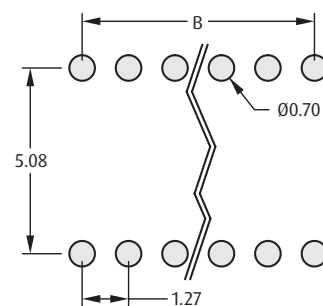
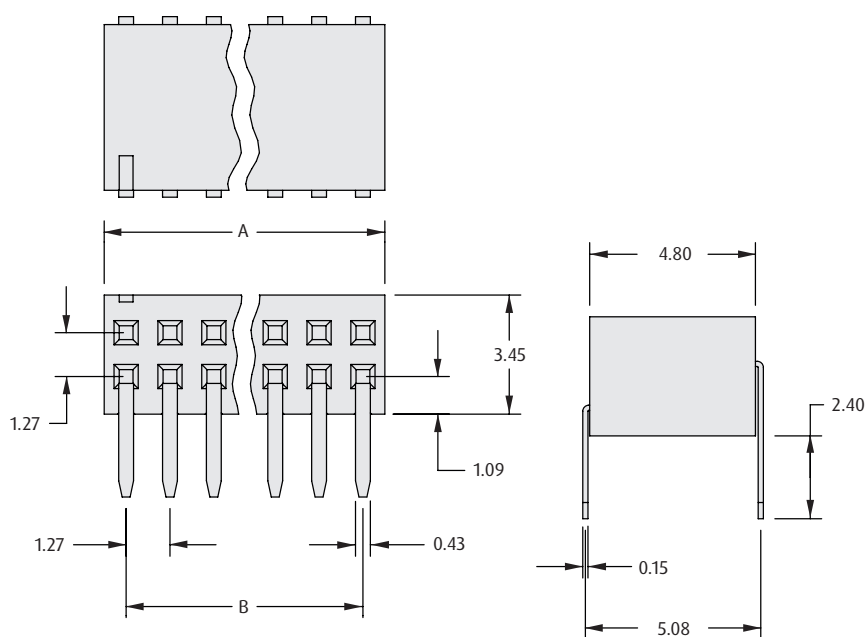
- Horizontal connector has two point solder fixing for connector rigidity.
- Twin beam connector for higher durability.



HORIZONTAL

CALCULATION

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



Recommended PC Board Pattern

HOW TO ORDER

M50 - 320 XX 45

SERIES CODE

FINISH

45 Gold

NO. OF CONTACTS PER ROW

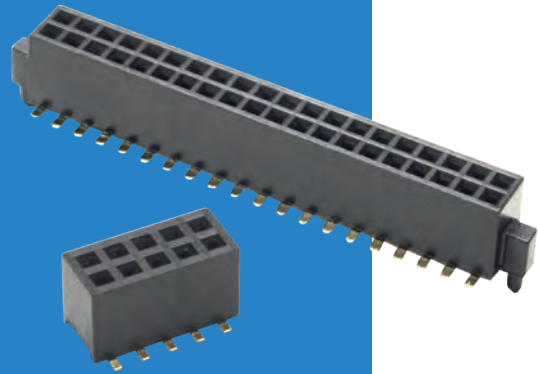
03 to 06, 08 to 10, 12, 15, 20

All dimensions in mm.

Archer Connectors – M50

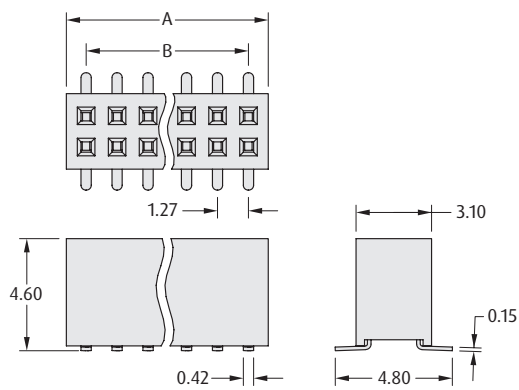
Female Vertical Surface Mount

- ❖ Locating pegs (posts) available to ensure correct positioning on the board.
- ❖ Alternative height connectors available on the following page.
- ❖ Dual entry connector can be used as either top or bottom entry.



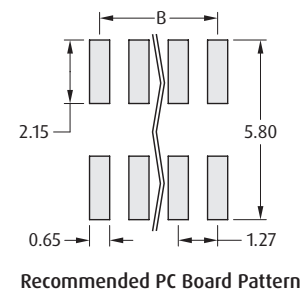
1.27mm (.050") PITCH

WITHOUT POST

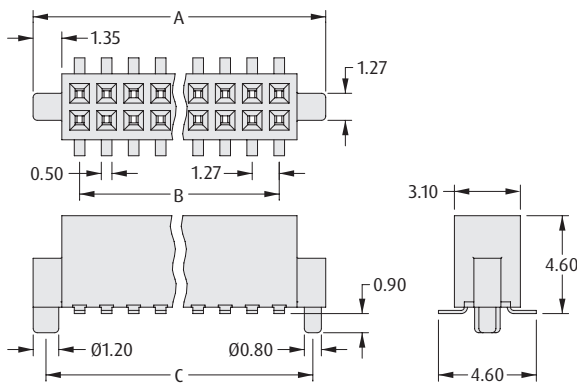


CALCULATION

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

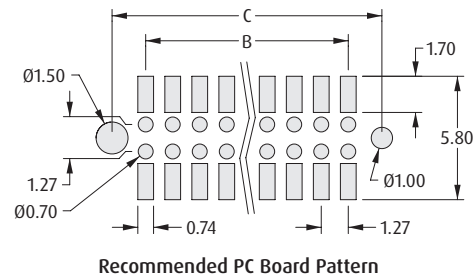


WITH POST, DUAL ENTRY



CALCULATION

A	$B + 4.37$
B	$1.27 \times (\text{No. of contacts per row} - 1)$
C	$B + 3.16$



HOW TO ORDER

SERIES CODE

M50 - 31 X XX XX

TYPE

0	Without Posts
1	With Posts

FINISH

42	Gold + Tin (With Posts)
45	Gold (Without Posts)

NO. OF CONTACTS PER ROW

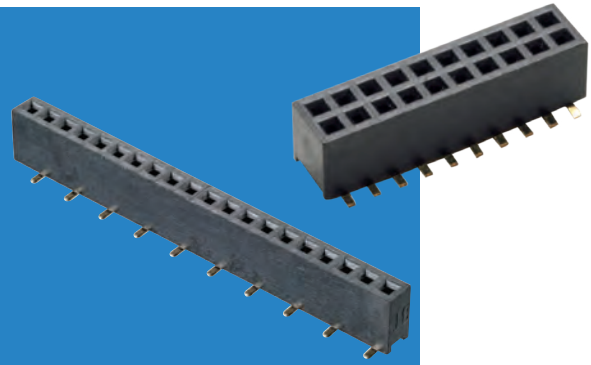
03 to 10, 12, 14, 20, 25, 30	Without Posts
05, 10, 25, 30	With Posts

All dimensions in mm.

Archer Connectors – M50

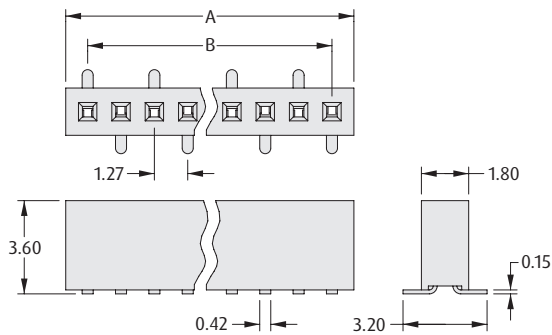
Female Vertical Surface Mount, Low Profile

- Lower profile surface mount connector with twin beam contacts for additional board-to-board height options.



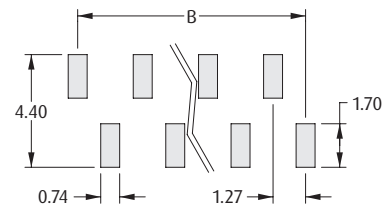
1.27mm (.050") PITCH

SINGLE ROW



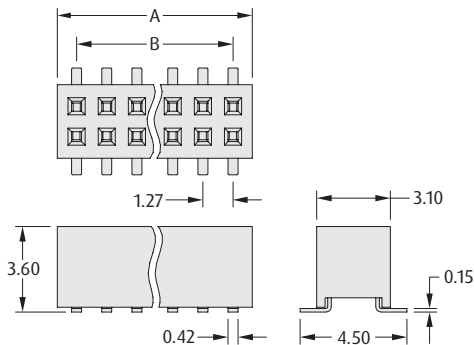
CALCULATION

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



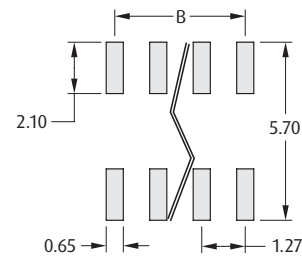
Recommended PC Board Pattern

DOUBLE ROW



CALCULATION

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



Recommended PC Board Pattern

HOW TO ORDER

M50 - 31 X XX XX X

SERIES CODE

TYPE

2	Double Row
4	Single Row

PACKAGING

R	Tape & Reeled (Single Row)
Blank	Loose

FINISH

45	Gold
-----------	------

NO. OF CONTACTS PER ROW

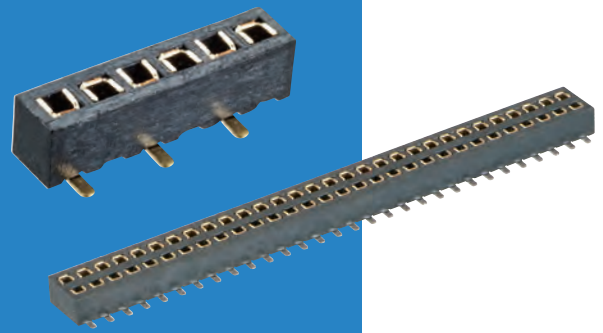
03 to 15, 20, 25, 30, 50	Double Row
02 to 06, 08, 10, 20	Single Row

All dimensions in mm.

Archer Connectors – M50

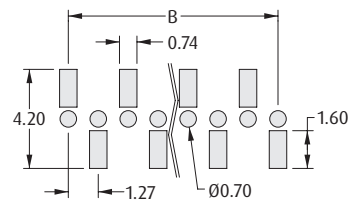
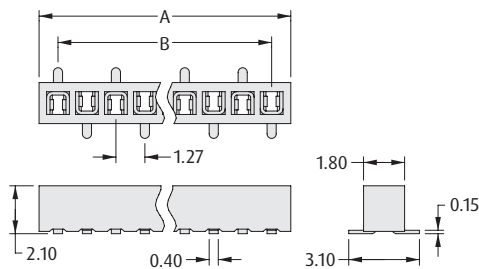
Female Vertical Surface Mount, Low Profile

- ❑ Locating pegs (posts) available on double row to ensure correct positioning on the board.
- ❑ Dual entry connectors can be used as either top or bottom entry.



1.27mm (.050") PITCH

SINGLE ROW

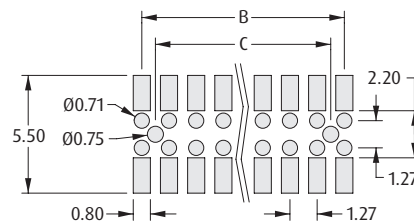
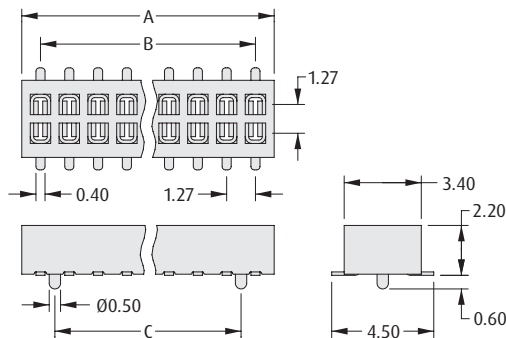


Recommended PC Board Pattern

CALCULATION

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

DOUBLE ROW WITH POSTS



Recommended PC Board Pattern

CALCULATION

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

HOW TO ORDER

M50 - 31 X XX XX X

SERIES CODE

TYPE

3	Single Row (without posts)
5	Double Row with posts

PACKAGING

R	Tape & Reeled (Single Row)
Blank	Loose

FINISH

42	Gold + Tin (Double Row)
45	Gold (Single Row)

NO. OF CONTACTS PER ROW

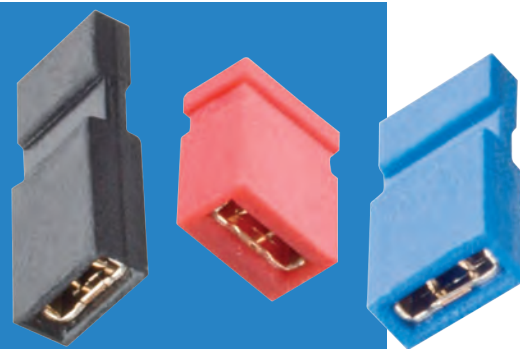
02 to 06, 08, 10, 20	Single Row
03, 05, 06, 08, 10, 12, 15, 20, 25	Double Row

All dimensions in mm.

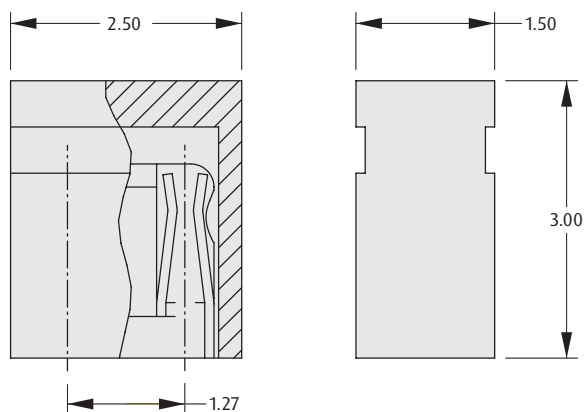
Archer Connectors – M50

Jumper Sockets

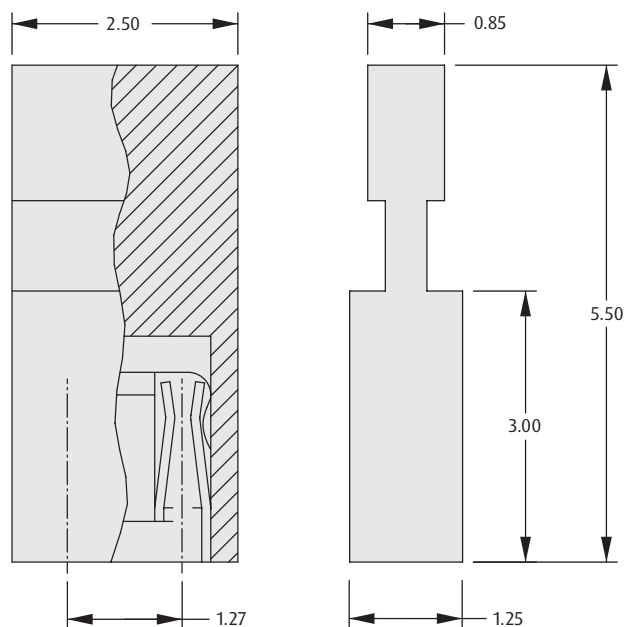
- ❖ Can be fitted and removed by hand, giving an alternative on-board programming method to DIP switches.
- ❖ Suitable for use with male M50 pin headers.
- ❖ Choice of colors available.
- ❖ Closed top with handle available for easier handling, placing and removing.



CLOSED TOP



CLOSED TOP WITH HANDLE



HOW TO ORDER

SERIES CODE

M50 XXX 00 05

TYPE

Closed Top		Closed Top with Handle	
190	Black	200	Black
192	Red	202	Red
193	Blue	203	Blue

FINISH

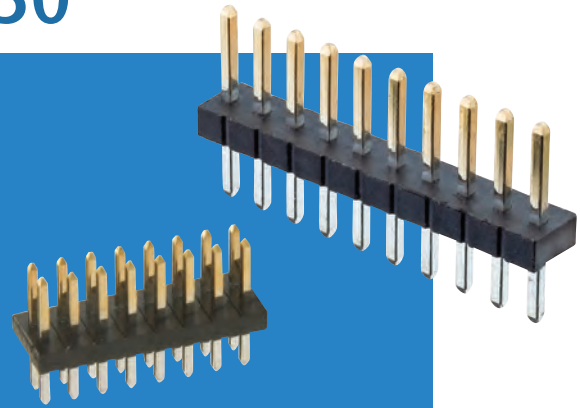
05	Gold
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All dimensions in mm.

Archer Connectors – M50

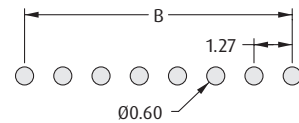
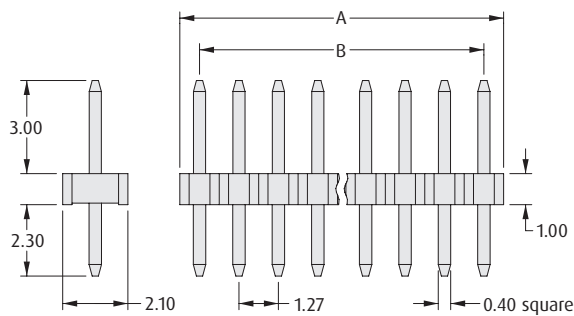
Male Vertical Throughboard

- Suitable for use with female connectors and jumper sockets.



1.27mm (.050") PITCH

SINGLE ROW

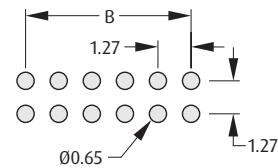
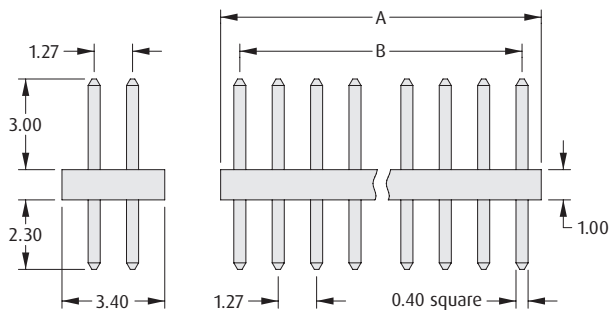


Recommended PC Board Pattern

CALCULATION

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

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M50 - 35 X XX 42

SERIES CODE

TYPE

0	Double Row
3	Single Row

FINISH

42 Gold + Tin

NO. OF CONTACTS PER ROW

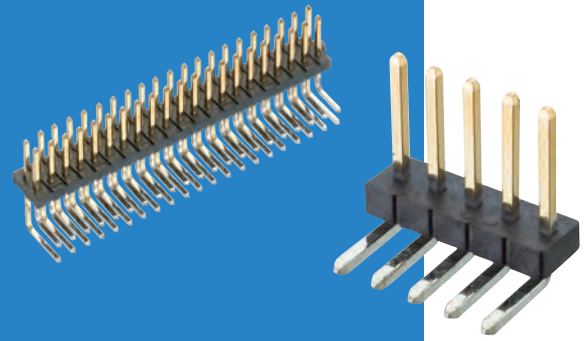
05 to 08, 10, 12, 14, 15, 20, 25, 50	Double Row
02 to 06, 08, 10, 20	Single Row

All dimensions in mm.

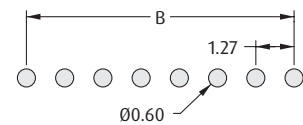
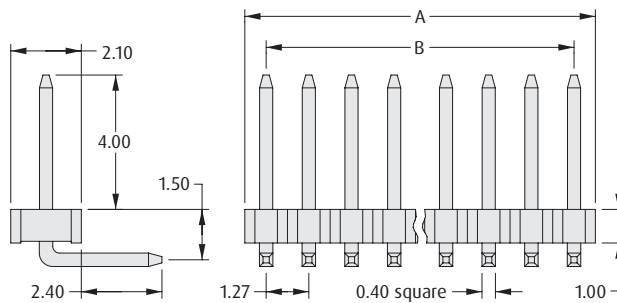
Archer Connectors – M50

Male Horizontal Throughboard

- Suitable for use with female connectors and jumper sockets.



SINGLE ROW

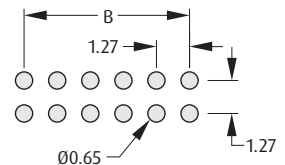
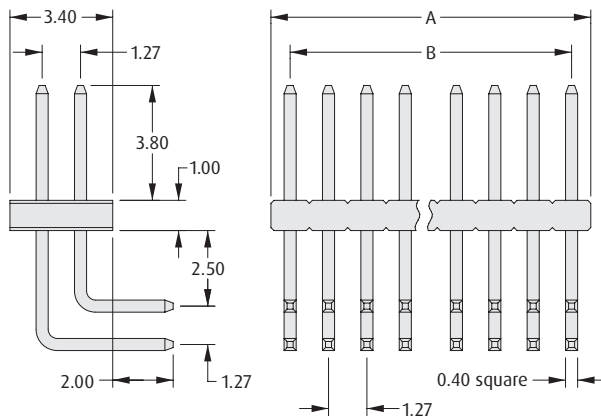


Recommended PC Board Pattern

CALCULATION

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

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M50 - 39 X XX 42

SERIES CODE

TYPE

0	Double Row
3	Single Row

FINISH

42	Gold + Tin
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NO. OF CONTACTS PER ROW

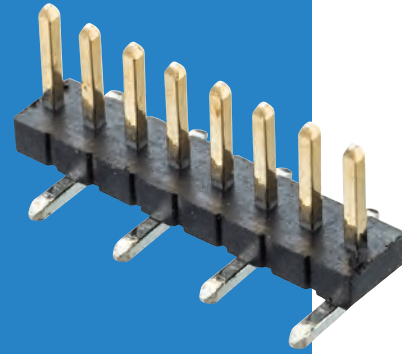
02, 05, 06, 08, 10, 12, 15, 20, 25, 50	Double Row
02 to 06, 08, 10, 20	Single Row

All dimensions in mm.

Archer Connectors – M50

Male Vertical Surface Mount Single Row

- ❖ Suitable for use with female connectors and jumper sockets.
- ❖ Tape and Reel packaging option includes Pick and Place cap for automated assembly.

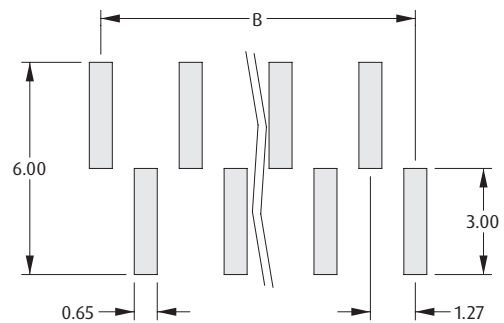
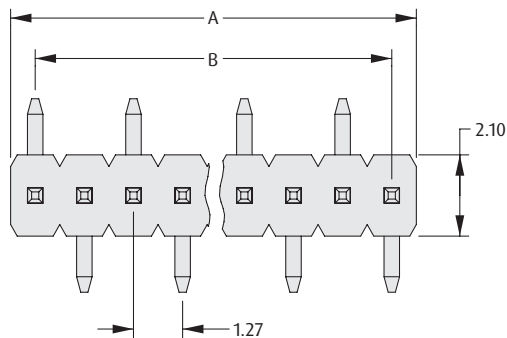


1.27mm (.050") PITCH

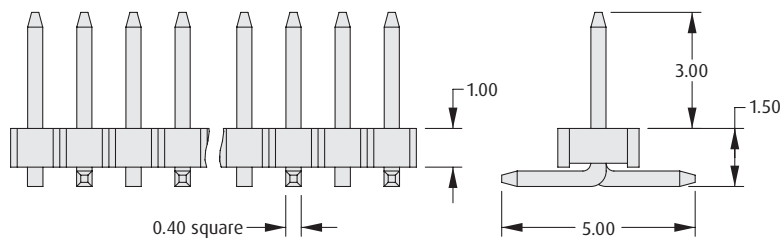
SINGLE ROW

CALCULATION

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



Recommended PC Board Pattern



HOW TO ORDER

M50 - 363 XX 42 X

SERIES CODE

NO. OF CONTACTS PER ROW

02 to 06, 08, 10, 20

PACKAGING

Blank	Loose
R	Tape & Reeled

FINISH

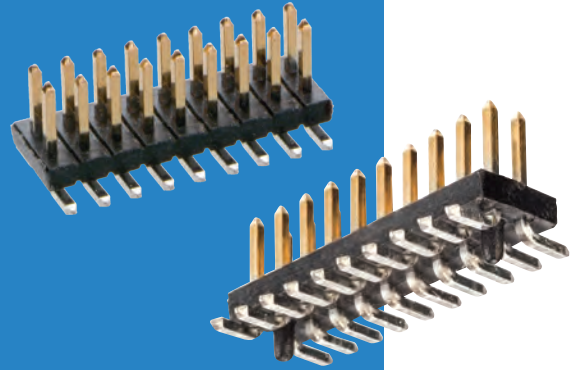
42	Gold + Tin
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All dimensions in mm.

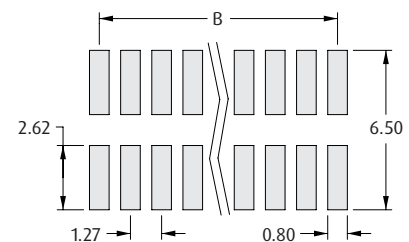
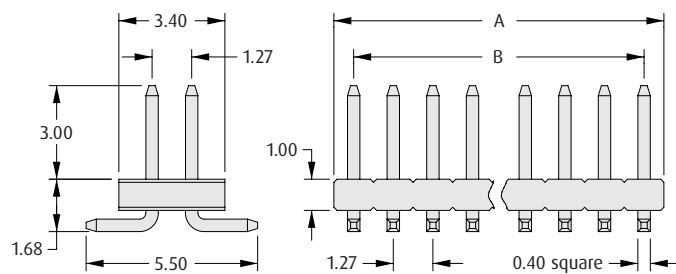
Archer Connectors – M50

Male Vertical Surface Mount Double Row

- ❖ Suitable for use with female connectors and jumper sockets.
- ❖ Available with or without location posts.
- ❖ Tape and Reel packaging option includes Pick and Place cap for automated assembly.

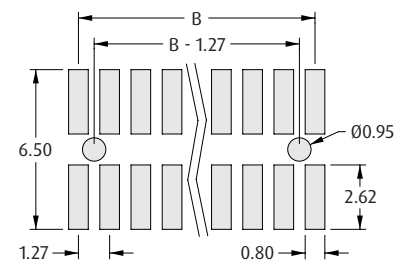
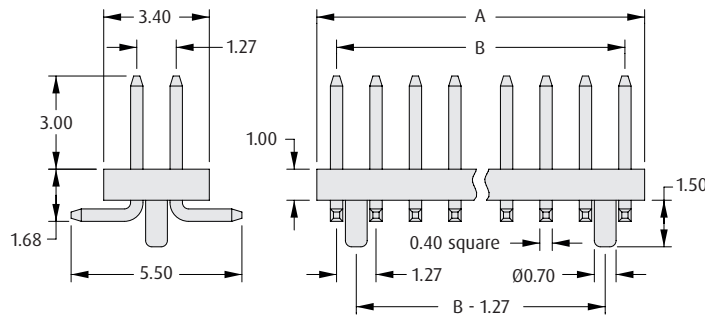


WITHOUT POSTS



Recommended PC Board Pattern

WITH POSTS



Recommended PC Board Pattern

CALCULATION

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

HOW TO ORDER

M50 - 36 X XX 42 X

SERIES CODE

TYPE

0	Without Posts
1	With Posts

NO. OF CONTACTS PER ROW

02, 03, 05 to 10, 12, 15, 20, 25, 30, 50	Without Posts
05 to 08, 10, 12, 15, 20, 25	With Posts

PACKAGING

Blank	Loose
R	Tape & Reeled (check website for available sizes)

FINISH

42	Gold + Tin
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All dimensions in mm.

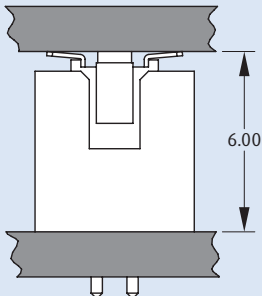
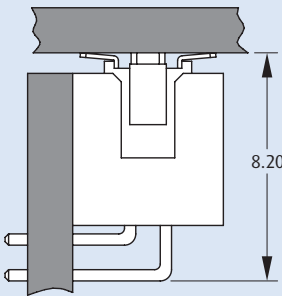
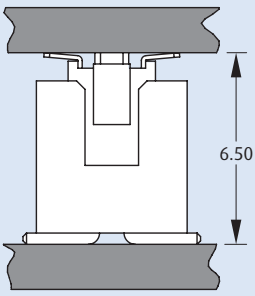
Archer Connectors – Polarized Specification

➤ 1.27mm pitch male and female connectors, for board-to-board connection with polarization.

➤ Materials		➤ Mechanical	
Housings:	High Temperature Plastic UL94V-0	Durability:	100 operations
Contacts:	Copper Alloy	Insertion force (max):	2.0N per contact
Finish:	Gold	Withdrawal force (min):	0.15N per contact
➤ Electrical		➤ Environmental	
Current:	1A per contact	Operating temperature:	-40°C to +105°C
Voltage proof:	300V AC, 500V DC for 1 minute	Solderability:	245°C for 5 seconds
Contact resistance:	30mΩ max	Soldering heat resistance:	260°C for 10 seconds
Insulation resistance:	500MΩ min		

1.27mm (.050") PITCH

Mating Profiles

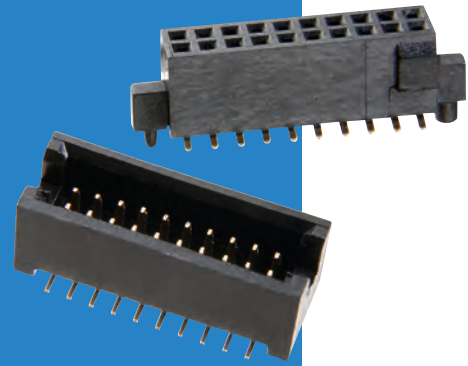
	MALE		
	VERTICAL THROUGHBOARD	HORIZONTAL THROUGHBOARD	VERTICAL SMT
FEMALE VERTICAL SMT			

All dimensions in mm.

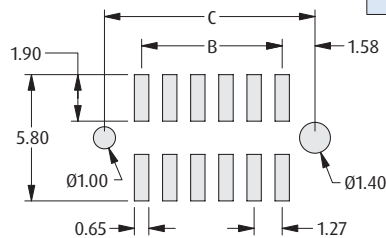
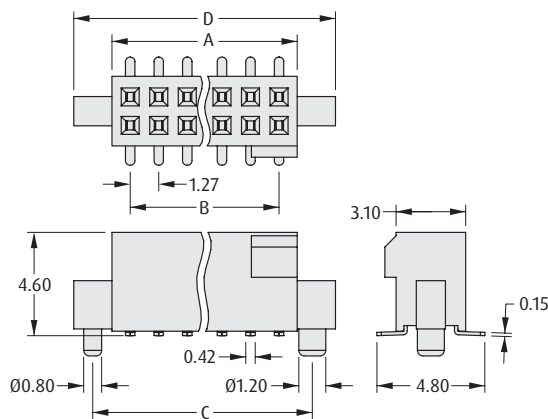
Archer Connectors – Polarized

Vertical Surface Mount

- ❖ Mating connectors in Surface Mount format.
- ❖ Female connector is also suitable for use with male PC Tail connectors on the following page.
- ❖ Polarization to prevent mis-mating.
- ❖ Locating pegs of different sizes ensure correct orientation and positioning on the board.
- ❖ Shrouded for additional pin protection.



FEMALE

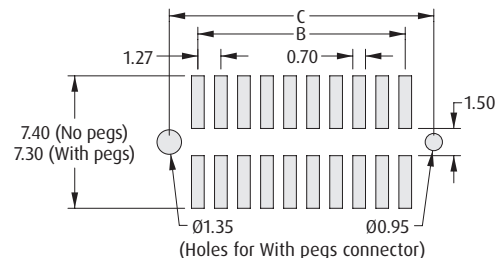
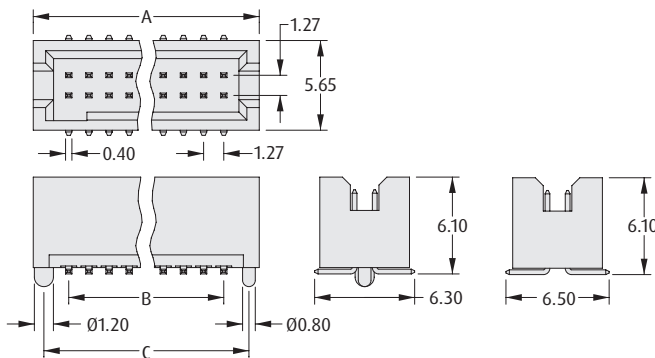


Recommended PC Board Pattern

CALCULATION

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

MALE



Recommended PC Board Pattern

CALCULATION

A	$B + 4.47$
B	$1.27 \times (\text{No. of contacts per row} - 1)$
C	$B + 3.15$

HOW TO ORDER

SERIES CODE

TYPE

430	Female
490	Male without pegs
491	Male with pegs

NO. OF CONTACTS PER ROW

05 to 08, 10, 12, 15, 19, 20, 25	Female
05, 07, 08, 10, 12, 14, 15, 20, 25	Male without pegs
05 to 08, 10, 12, 15, 20, 25	Male with pegs

PACKAGING

Blank	Loose
R	Tape & Reeled (check website for available sizes)

FINISH

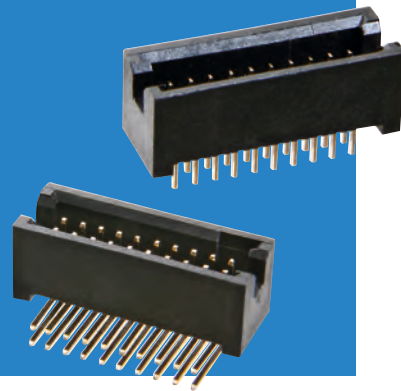
45	Gold
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All dimensions in mm.

Archer Connectors – Polarized

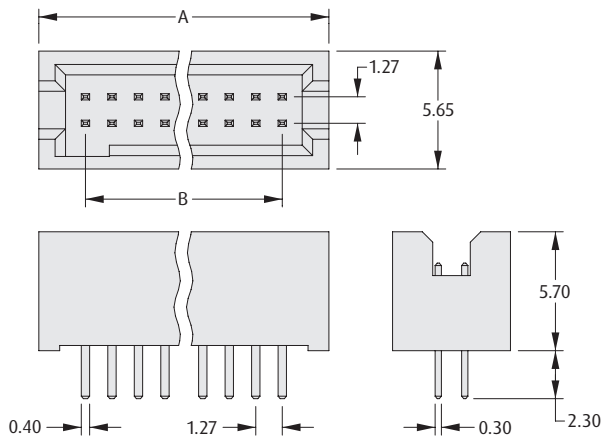
Male Throughboard

- Throughboard male connectors suitable for use with female connector M50-430 Series, shown on previous page.
- Polarization to prevent mis-mating.
- Shrouded for additional pin protection.

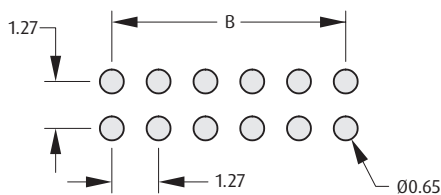
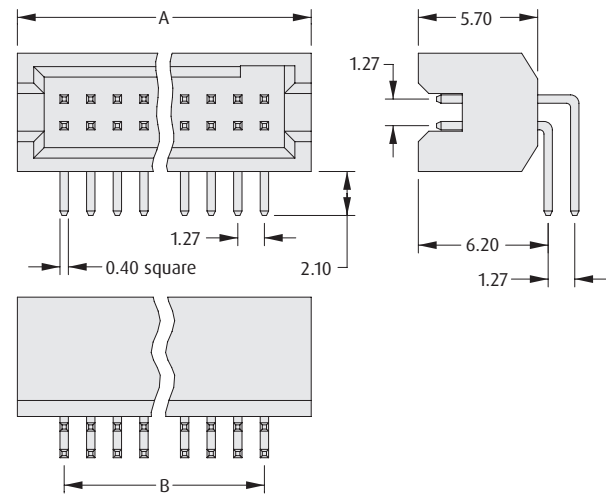


1.27mm (.050") PITCH

VERTICAL



HORIZONTAL



Recommended PC Board Pattern

CALCULATION

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

HOW TO ORDER

M50 - 4 X 0 XX 45

SERIES CODE

TYPE

7	Vertical
8	Horizontal

FINISH

45 Gold

NO. OF CONTACTS PER ROW

05, 08, 10, 15, 17, 20	Vertical
05 to 07, 10, 12, 15, 25	Horizontal

All dimensions in mm.

Archer Connectors – M50 IDC Specification

- 1.27mm pitch cable-to-board connectors, with latching and polarization.

Materials

Housings	
PCB Connectors:	LCP, UL94V-0
IDC Cable Connectors:	PBT, UL94V-0
Contacts:	
Copper Alloy	
Finish	
M50-380:	Gold on contact area
Others:	Gold on contact area, Tin on tails

Electrical

Current	
M50-330, 91X:	1A per contact
M50-355, 365:	1.75A per contact
M50-380, 90X:	0.5A per contact
Voltage proof	
M50-90X/91X:	300V DC for 1 minute
Others:	1,000V AC for 1 minute
Contact resistance:	
30mΩ max	
Insulation resistance	
M50-90X, 91X:	5MΩ min
Others:	1,000MΩ min

Mechanical

Durability:	100 operations
Insertion force (max):	1.0N per contact
Withdrawal force (min):	0.15N per contact

Environmental

Operating temperature	
PCB Connectors:	-55°C to +125°C
IDC Cable Connectors:	-40°C to +105°C
Cable Assembly:	-20°C to +105°C
Solderability:	
245°C for 5 seconds	
Soldering heat resistance:	
260°C for 10 seconds	

Mating Profiles

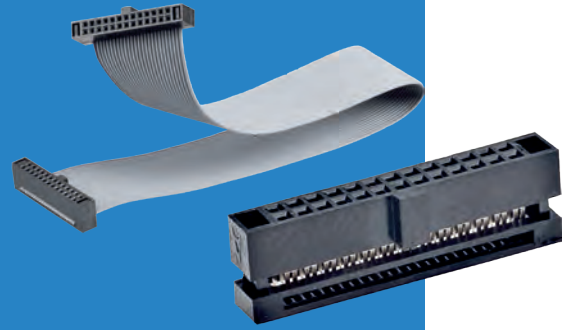
	MALE		
	VERTICAL THROUGHBOARD	VERTICAL SMT	CABLE
FEMALE CABLE			

All dimensions in mm.

Archer Connectors – M50 IDC

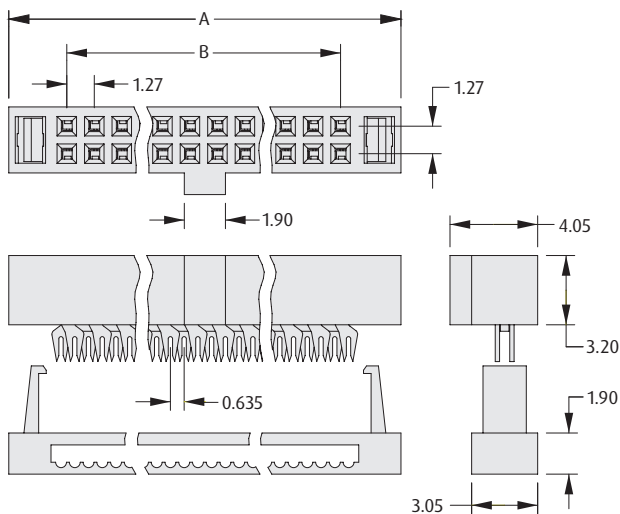
Female Cable Connector & Cable Assembly

- ❖ Suitable for use with male vertical latching connectors shown on the following page.
- ❖ IDC connection for fast termination of multiple contacts.
- ❖ Polarized to prevent mis-mating.
- ❖ Secure cable retention with positive latching to header.
- ❖ Standard cable assembly lengths from stock.
- ❖ Instruction sheet for Hand Tool is available at www.harwin.com/instructions.



1.27mm (.050") PITCH

FEMALE IDC



HAND TOOL



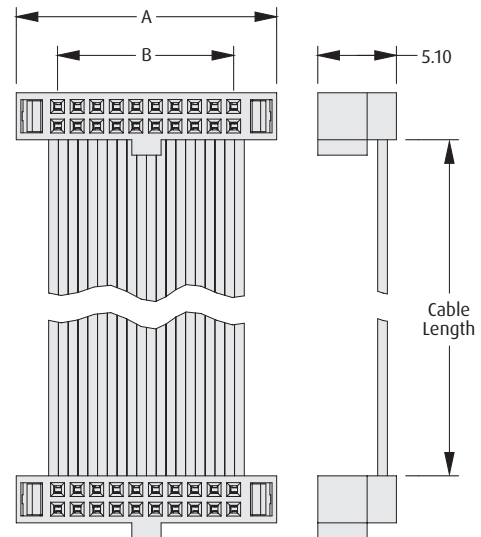
ORDER CODE
Z50-020

CALCULATION

A	$B + 5.47$
B	$1.27 \times (\text{No. of contacts per row} - 1)$

FEMALE-TO-FEMALE CABLE

- ❖ Uses 0.635mm pitch 30 AWG Ribbon cable to UL2678.
- ❖ Constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.



HOW TO ORDER

M50 - XXX XX 42

SERIES CODE

TYPE

330	Female IDC Connector
910	150mm Cable Assembly
911	300mm Cable Assembly

FINISH

42	Gold + Tin
-----------	------------

NO. OF CONTACTS PER ROW

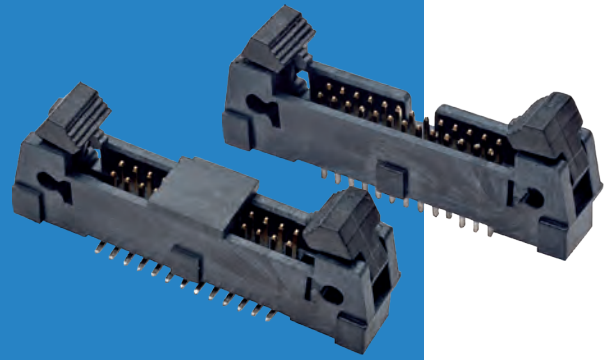
05, 10, 13, 17, 20, 25	All
06, 07, 08	M50-330 only

All dimensions in mm.

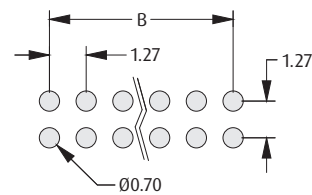
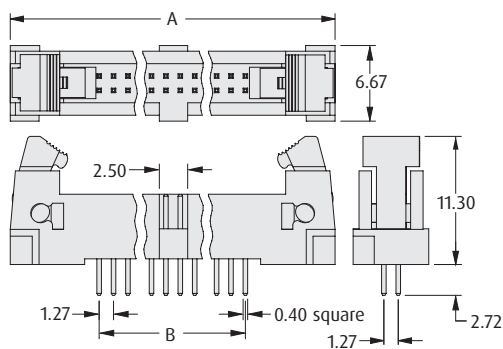
Archer Connectors – M50 IDC

Male Vertical Latching Connectors

- ❑ Suitable for use with female cable connectors shown on previous page.
- ❑ Surface mount option has locking pegs for location and retention.
- ❑ Shrouded for robust pin protection.
- ❑ Polarized to prevent mis-mating.
- ❑ Secure, positive latch & ejection system.
- ❑ Tape and Reel packaging option includes Pick and Place cap for automated assembly.



THROUGHBOARD

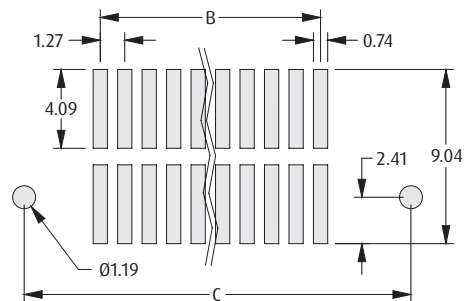
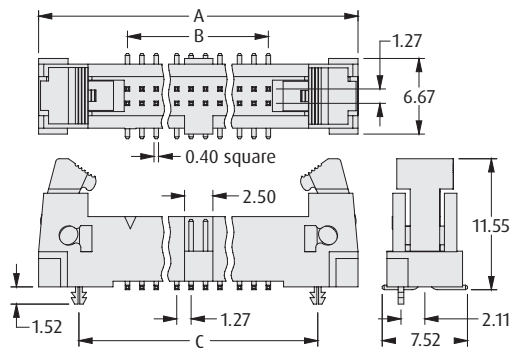


Recommended PC Board Pattern

CALCULATION

A	$B + 15.75$
B	$1.27 \times (\text{No. of contacts per row} - 1)$
C	$B + 8.64$

SURFACE MOUNT



Recommended PC Board Pattern

HOW TO ORDER

M50 - 3 X 5 XX 42 X

SERIES CODE

TYPE

5	Throughboard
6	Surface Mount

NO. OF CONTACTS PER ROW

05, 06, 08, 10, 13, 17, 20, 25	Throughboard
05 to 08, 10, 13, 17, 20, 25	Surface Mount

PACKAGING

R	Tape & Reeled (M50-365)
Blank	Loose (M50-355)

FINISH

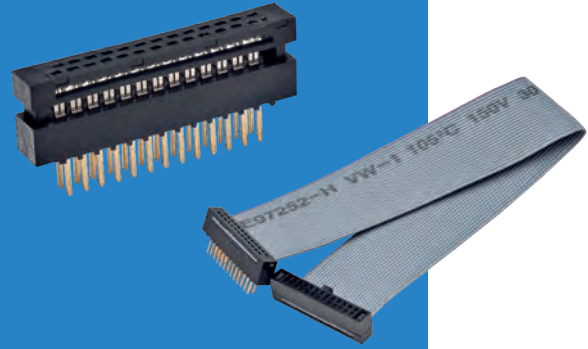
42	Gold + Tin
-----------	------------

All dimensions in mm.

Archer Connectors – M50 IDC

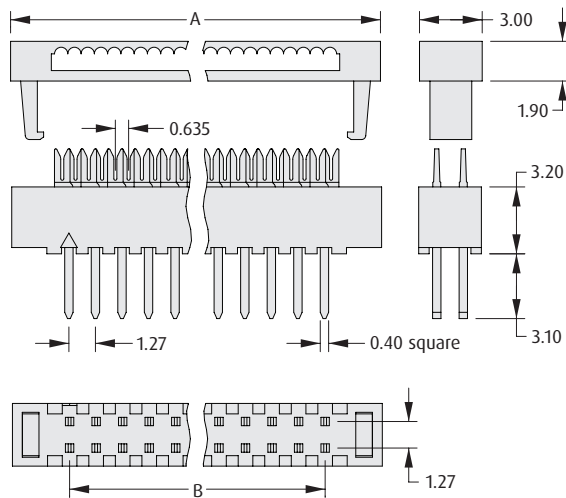
Male Cable Connector & Cable Assembly

- Male transitional cable connector suitable for soldering directly to PCB, permits cost effective cable to PCB attachment.
- IDC connection for fast termination of multiple contacts.
- Suitable for mating with other sockets from the Archer range.
- Low profile, small footprint.
- Instruction sheet for Hand Tool is available at www.harwin.com/instructions.



1.27mm (.050") PITCH

MALE IDC



HAND TOOL



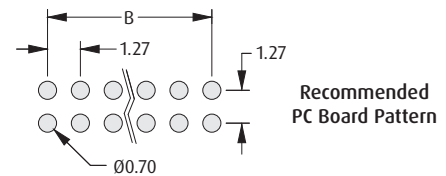
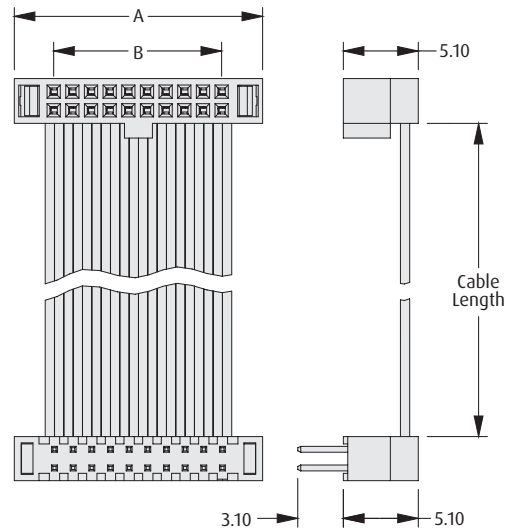
ORDER CODE
Z50-030

CALCULATION

A	$B + 5.47$
B	$1.27 \times (\text{No. of contacts per row} - 1)$

MALE-TO-FEMALE CABLE

- Uses 0.635mm pitch 30 AWG Ribbon cable to UL2678.
- Constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.



Recommended
PC Board Pattern

HOW TO ORDER

SERIES CODE

TYPE

380	Male IDC Connector
901	150mm Cable Assembly
902	300mm Cable Assembly

M50 - XXX XX 42

FINISH

42	Gold + Tin
-----------	------------

NO. OF CONTACTS PER ROW

05, 10, 13, 17, 20, 25	All
06, 07, 08	M50-380 only

All dimensions in mm.

Archer Connectors – M52 Specification

- 1.27mm x 2.54mm pitch male pin headers (with 0.46mm square pins) and female sockets, for vertical board-to-board connection.

Materials

Housings:	High Temperature Plastic UL94V-0
Contacts:	Copper Alloy
Finish:	Gold

Electrical

Current:	1A per contact
Voltage proof	
M52-500, 510:	500V AC, 1,000V DC for 1 minute
Others:	1,000V AC/DC for 1 minute
Contact resistance:	30mΩ max
Insulation resistance	1,000MΩ min

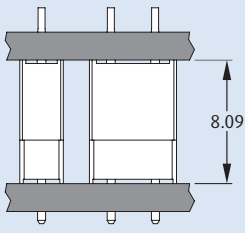
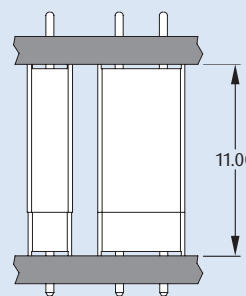
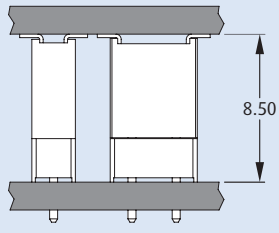
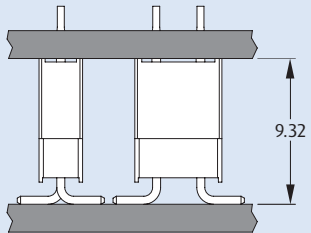
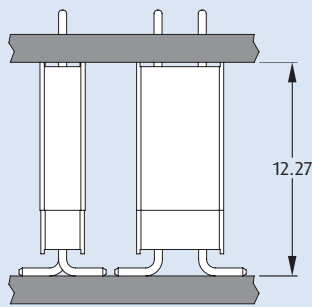
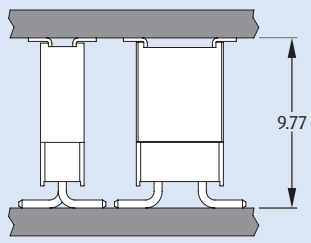
Mechanical

Durability:	300 operations
Insertion force (max)	
M52-500, 510:	1.0N per contact
Others:	1.5N per contact
Withdrawal force (min)	
M52-500, 510:	0.12N per contact
Others:	0.1N per contact
Vibration sensitivity:	50-2,000Hz, 3.13G, 45 minutes duration
Shock severity:	294m/s ² (30G) for 11ms

Environmental

Operating temperature:	-40°C to +105°C
Solderability:	245°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

Mating Profiles

		FEMALE		
		VERTICAL THROUGHBOARD (4.6mm Height)	VERTICAL THROUGHBOARD (8.5mm Height)	VERTICAL SMT
MALE	VERTICAL THROUGH-BOARD			
	VERTICAL SMT			

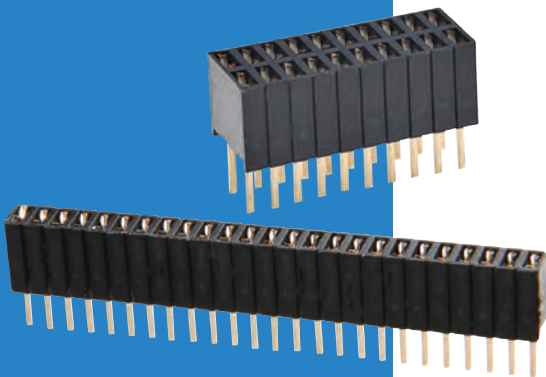
All dimensions in mm.

Archer Connectors – M52

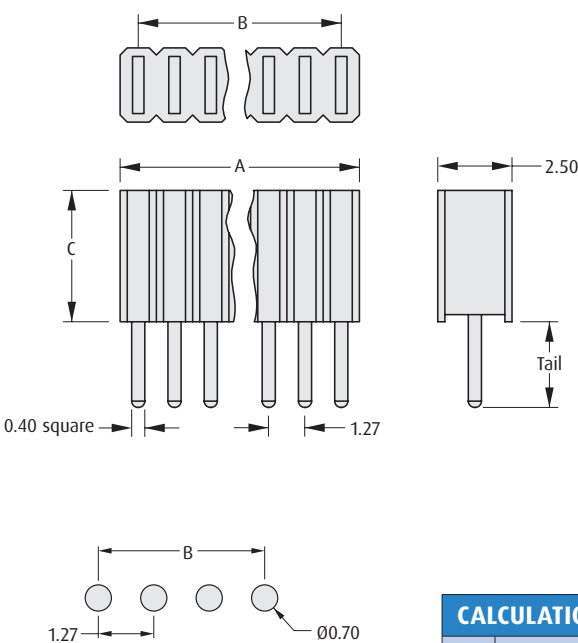
1.27mm (.050") PITCH

Female Vertical Throughboard

- ❖ Choice of connector height.
- ❖ Suitable for use with male connectors with 0.46mm square pins.



SINGLE ROW

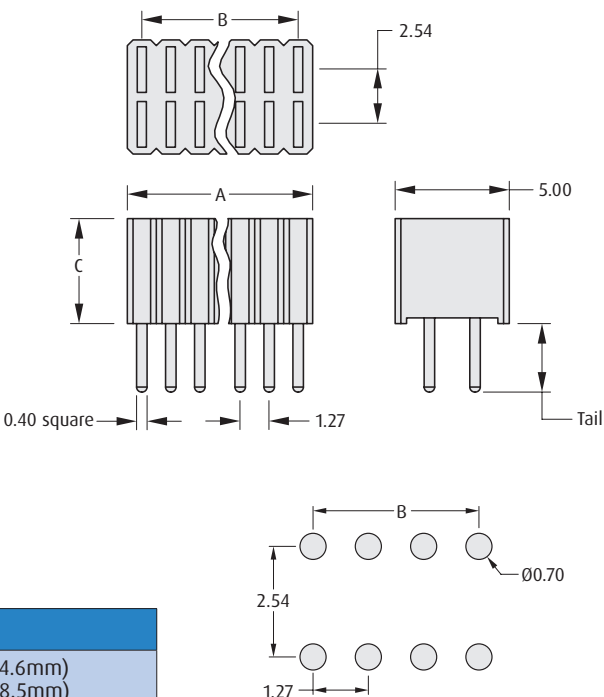


Recommended PC Board Pattern

CALCULATION

A	B + 1.67 (when C = 4.6mm) B + 1.27 (when C = 8.5mm)
B	1.27 x (No. of contacts per row - 1)

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M52 - 5 X X XX 45

SERIES CODE

NO. OF ROWS

0	Single Row
1	Double Row

HEIGHT

0	C = 4.6mm, Tail = 3.00mm
1	C = 8.5mm, Tail = 2.80mm

FINISH

45	Gold
-----------	------

NO. OF CONTACTS PER ROW

03 to 10, 12, 14 to 16, 20, 25, 40	Single, 4.6mm
03 to 10, 12, 15, 20, 23, 25	Single, 8.5mm
03 to 10, 12, 15, 20, 25, 30, 40	Double 4.6mm
03 to 10, 12, 15, 20, 23, 25	Double, 8.5mm

All dimensions in mm.

Archer Connectors – M52

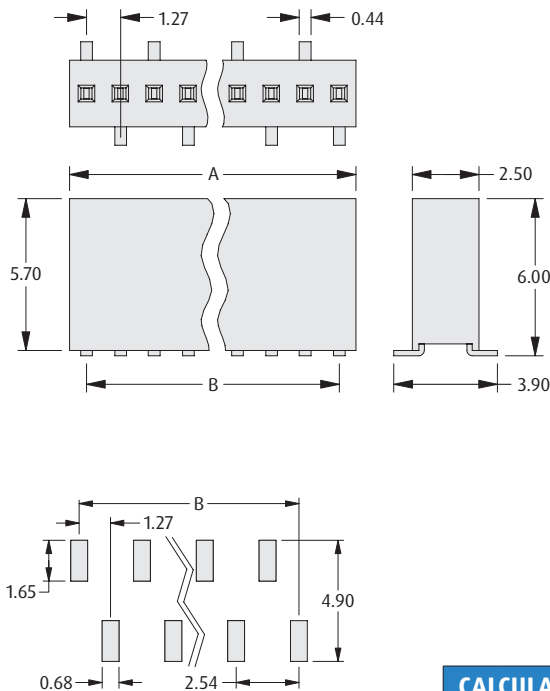
Female Vertical Surface Mount

- Suitable for use with male pin headers with 0.46mm square pins.
- Twin beam contact for cost-effective reliability.



1.27mm (.050") PITCH

SINGLE ROW

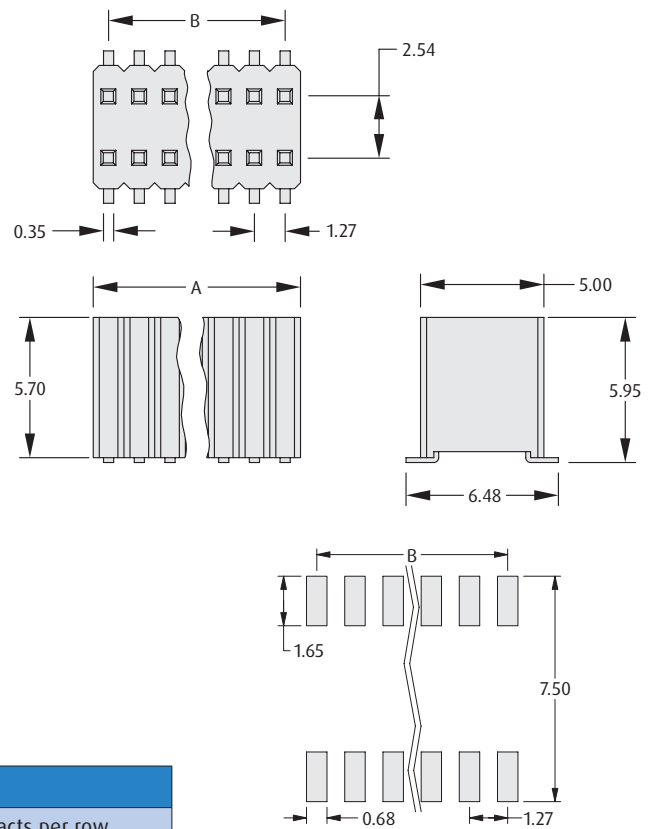


Recommended PC Board Pattern

CALCULATION

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

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M52 - 5 X 5 XX 45

SERIES CODE

TYPE

0	Single Row
1	Double Row

FINISH

45 Gold

NO. OF CONTACTS PER ROW

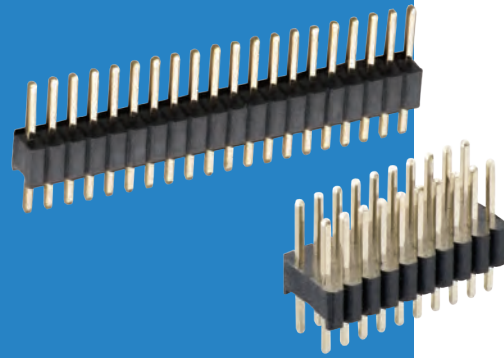
03 to 10, 12, 15, 20, 25

All dimensions in mm.

Archer Connectors – M52

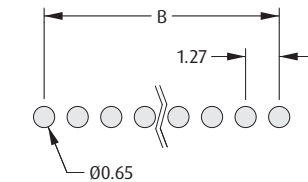
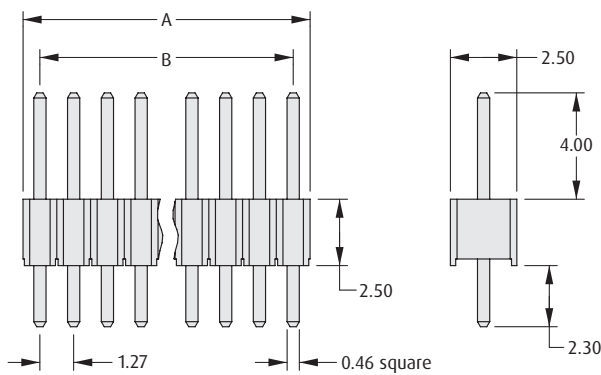
Male Vertical Throughboard

- Suitable for use with female connectors shown on previous page.



1.27mm (.050") PITCH

SINGLE ROW

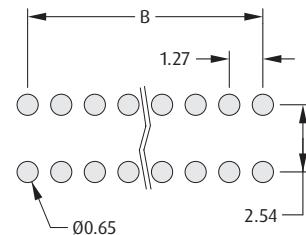
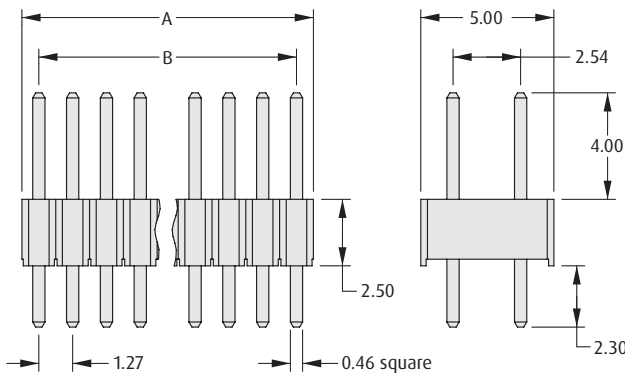


Recommended PC Board Pattern

CALCULATION

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

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M52 - 040023 X XX 45

SERIES CODE

TYPE

V	Single Row
W	Double Row

FINISH

45	Gold
-----------	------

NO. OF CONTACTS PER ROW

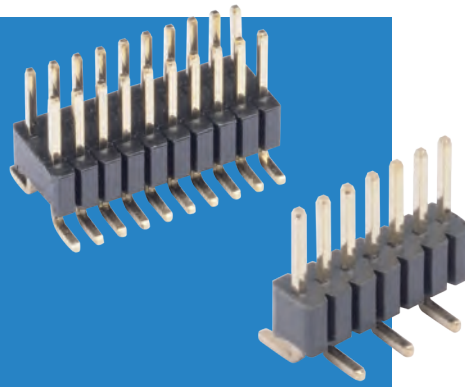
05, 10, 20, 25

All dimensions in mm.

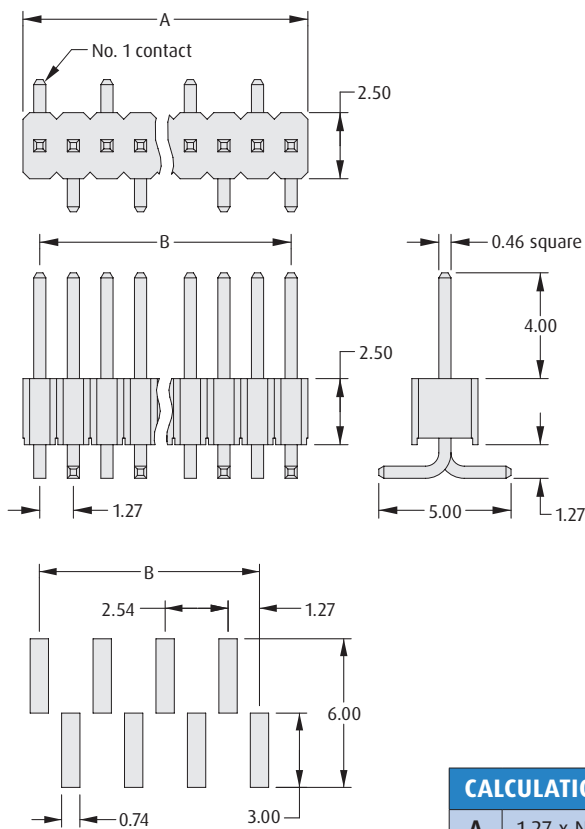
Archer Connectors – M52

Male Vertical Surface Mount

- Suitable for use with female connectors shown on previous page.



SINGLE ROW

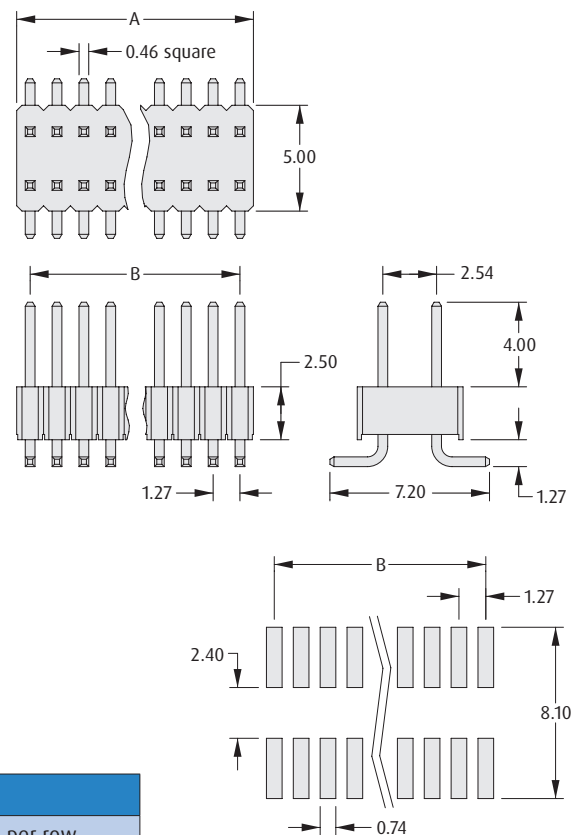


Recommended PC Board Pattern

CALCULATION

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

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M52 - 040000 X XX 45

SERIES CODE

TYPE

P	Single Row
S	Double Row

FINISH

45	Gold
-----------	------

NO. OF CONTACTS PER ROW

05, 10, 20, 25

All dimensions in mm.