
2.0 mm PITCH METRIC CONNECTOR(5-Row)

The best selection connector regarding PC-Board to PC-Board connection for telecommunication and control equipment those are required high performance and high density mounting.

Features

Meets IEC61076-4-104 standard

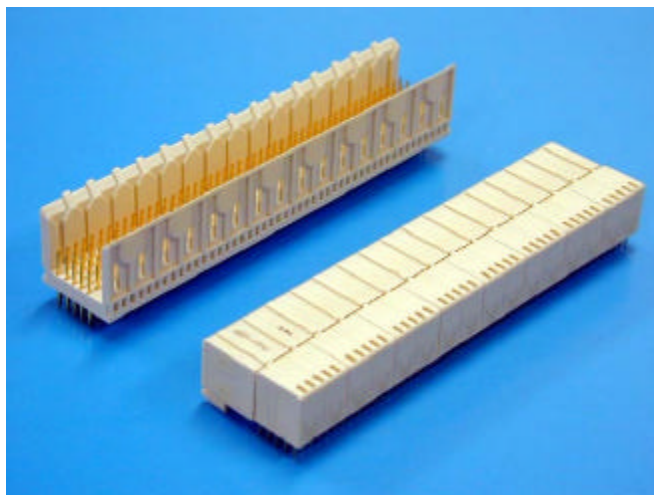
High density mounting with 2 mm pitch pin arrangement

Number of pins : 30, 60, 120 and 240

Available for multi-connection construction considering circuit protection function

Application

Interface between PC-Boards for Telephone exchanger, transmission and measuring equipment



For correct use

Please avoid to use under temperature, voltage and current over specification.

If it is used by incorrect method, there is possibility of abnormal heat generating or fire.

Note : The specification may be changed later.

Specification

Items	F type(Female)	M type(Male)
Electrical characteristics		
Dielectric withstanding voltage	AC1000V 1 minute	
Insulation resistance	5000Mohms min. DC100V	
Contact resistance	45 mohms max.	
Rated current	1A/pin	
Mechanical characteristics		
Connector total insertion force	240 pins 150 N max. 120 pins 75 N max. 60 pins 37.5 N max. 30 pins 18.75 N max.	
Connector total withdrawal force	240 pins 33.75 N min. 120 pins 16.87 N min. 60 pins 8.43 N min. 30 pins 4.21 N min.	
Gauge hold force	0.14 N min. (at 0.5W×0.485t gauge)	--
Number of insertion and withdrawal	100 cycles max. no carrying current	
Connector total press-in force	--	240 pins 38 kN max. 120 pins 19 kN max. 60 pins 10 kN max. 30 pins 5 kN max.
Press fit terminals hold force	--	20 Nmin.

PART NUMBER SYSTEM

FB xxx **M** **SP** **1** - **A** - **S** **1**

1 2 3 4 5 6 7 8

1. Series FB

2. Number of pins 30,60,120,240 pins

3. Kinds M Male connector, F Female connector

4. PC-Board mounting SP(straight pin press fit connection), RP(right angle pin press fit connection), SH(straight pin through-hole soldering connection), RH(right angle pin through-hole soldering connection)

5. Cable connector pin length : 1(2.9 mm), 2(4.3 mm), 3(11.8 mm), 4(13.6 mm), 5(15.6 mm), 6(17.0 mm)

6. Gold plating thickness 0.8 micron meter min.

7. Header connecting pin length 1(5.0 mm), 2(5.75 mm), 3(6.50 mm), 4(7.25 mm), 5(8.00 mm), S(3 step sequence)

8. Design procedure Design procedure of 3 step sequence type

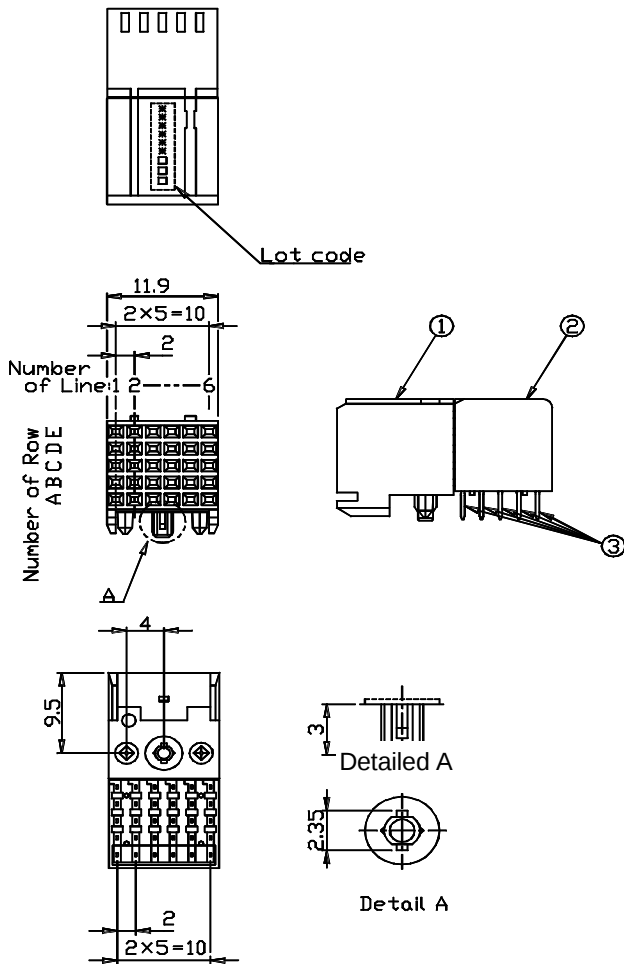
Type

Type	Part number	Number of pins	Dimensions Fig.No	Available PC-board dimensions Fig.No
F-type -Female-	FB30FRH-A	30	1-1	3
	FB60FRH-A	60	1-2	
	FB120FRH-A	120	1-3	
	FB240FRH-A	240	1-4	
M type - Male -	FB30MSP2-A-1	30	2-1	4
	FB30MSP2-A-2	30	2-2	
	FB30MSP4-A-1	30	2-3	
	FB30MSP4-A-2	30	2-4	
	FB60MSP2-A-1	60	2-5	
	FB60MSP4-A-1	60	2-6	
	FB120MSP2-A-1	120	2-7	
	FB120MSP2-A-S1	120	2-8	
	FB120MSP4-A-S1	120	2-9	
	FB240MSP2-A-1	240	2-10	
	FB240MSP4-A-1	240	2-11	
	FB240MSP2-A-S1	240	2-12	
	FB240MSP4-A-S1	240	2-13	

Dimensions

Fig. 1-1

FB30FRH-A

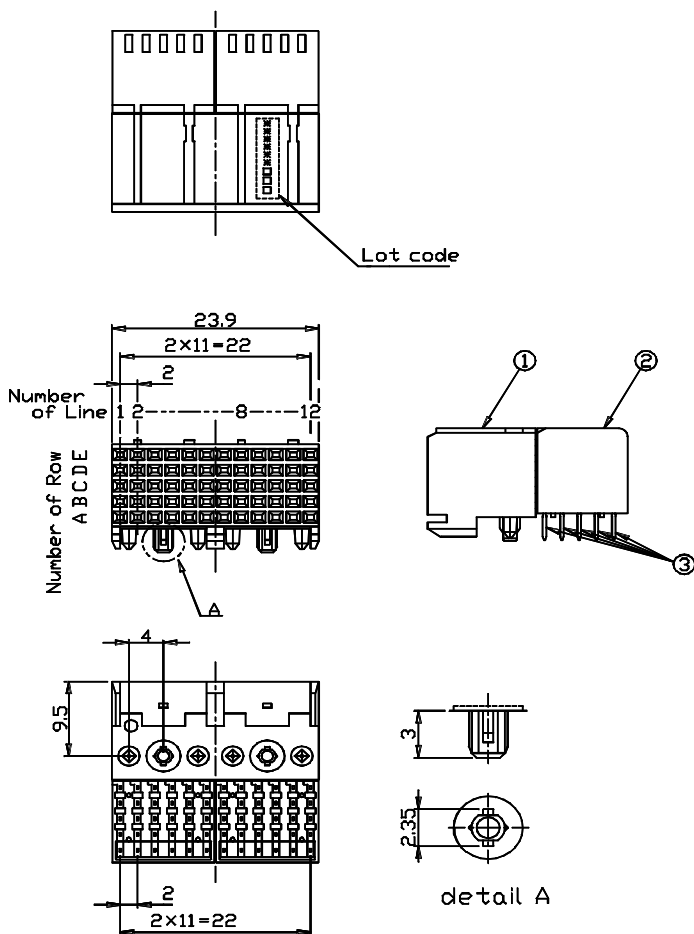


Piece No.	Part number	Material	Quantity
1	FB-30FA housing	LCP(UL94V-0)	1
2	FB-FA locator	LCP(UL94V-0)	1
3	FB-FA contact	Phosphor bronze	5×6 (30)

Dimensions

Fig. 1-2

FB60FRH-A

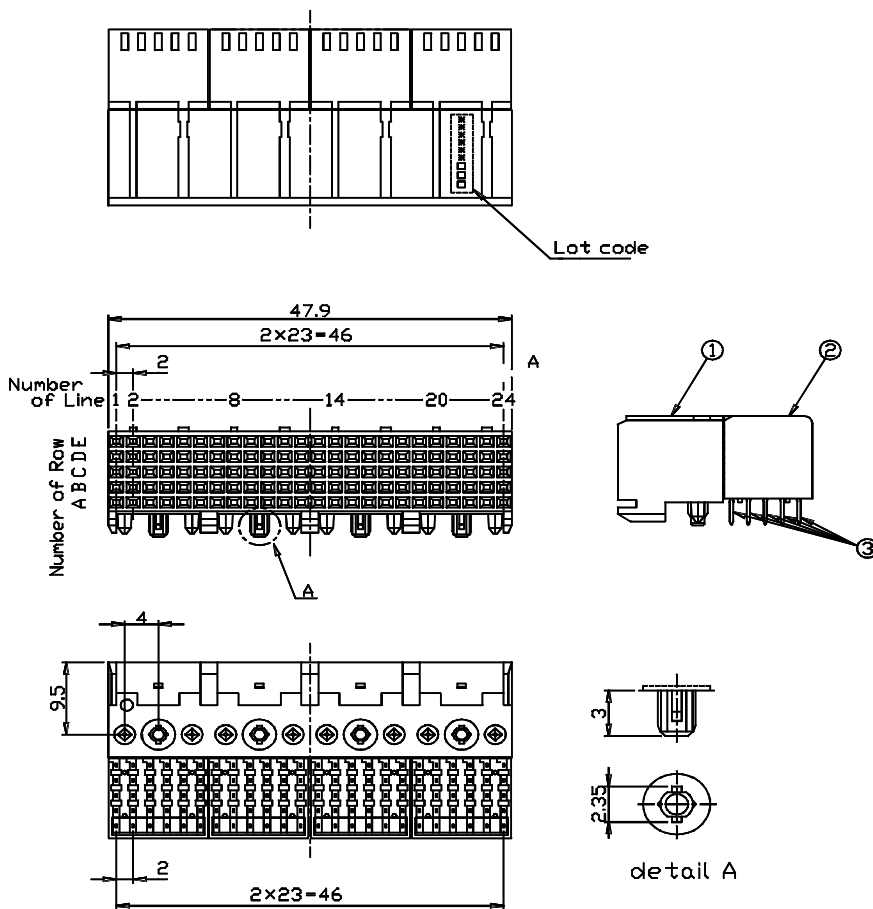


Piece No.	Part number	Material	Quantity
1	FB-60FA housing	LCP(UL94V-0)	1
2	FB-FA locator	LCP(UL94V-0)	2
3	FB-FA contact	Phosphor bronze	5×12 (60)

Dimensions

Fig. 1-3

FB120FRH-A



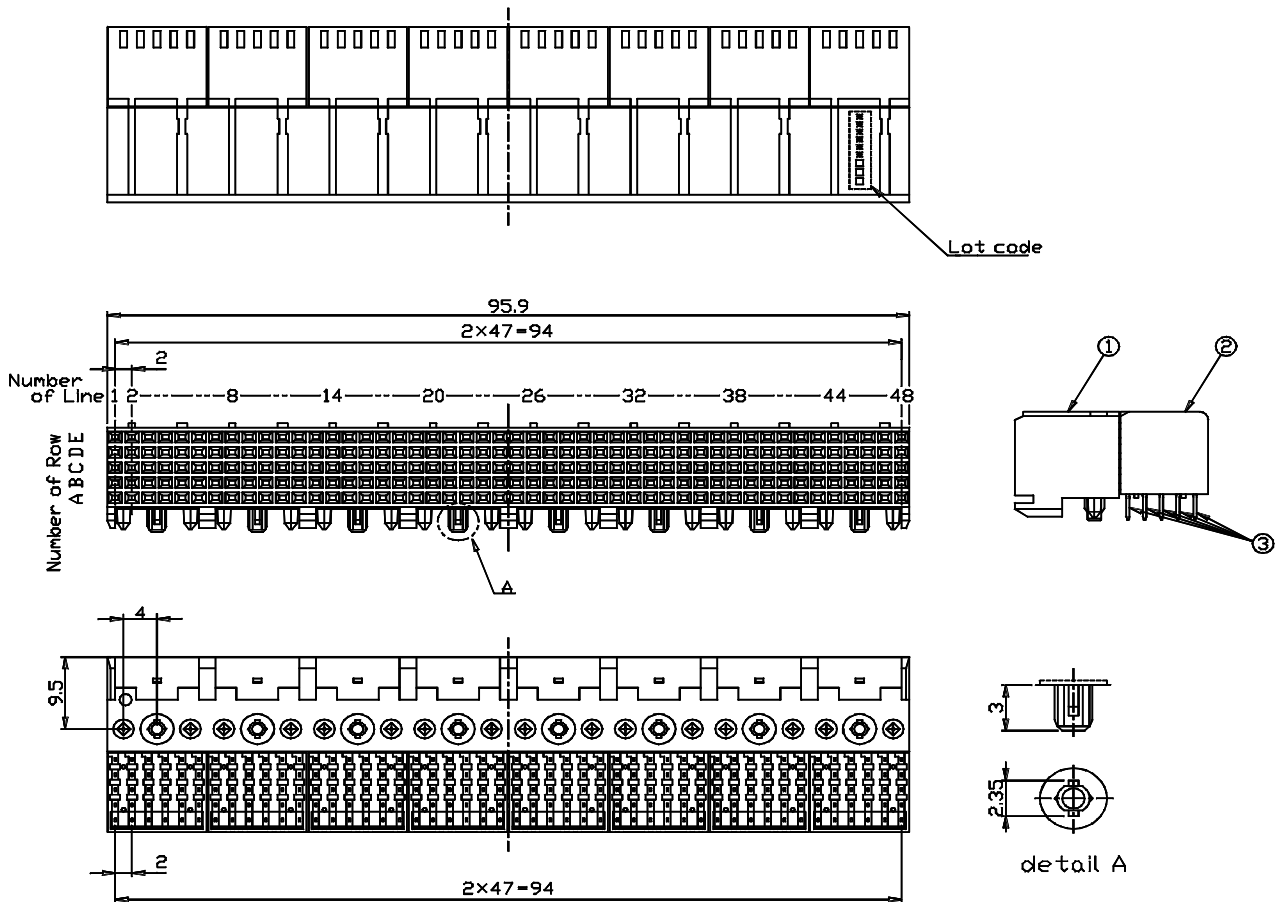
Piece No.	Part number	Material	Quantity
1	FB-120FA housing	LCP(UL94V-0)	1
2	FB-FA locator	LCP(UL94V-0)	4 or 1*
3	FB-FA contact	Phosphor bronze	5x24 (120)

*Note – The quantity varies according to size of locator.

Dimensions

Fig.1-4

FB240FRH-A



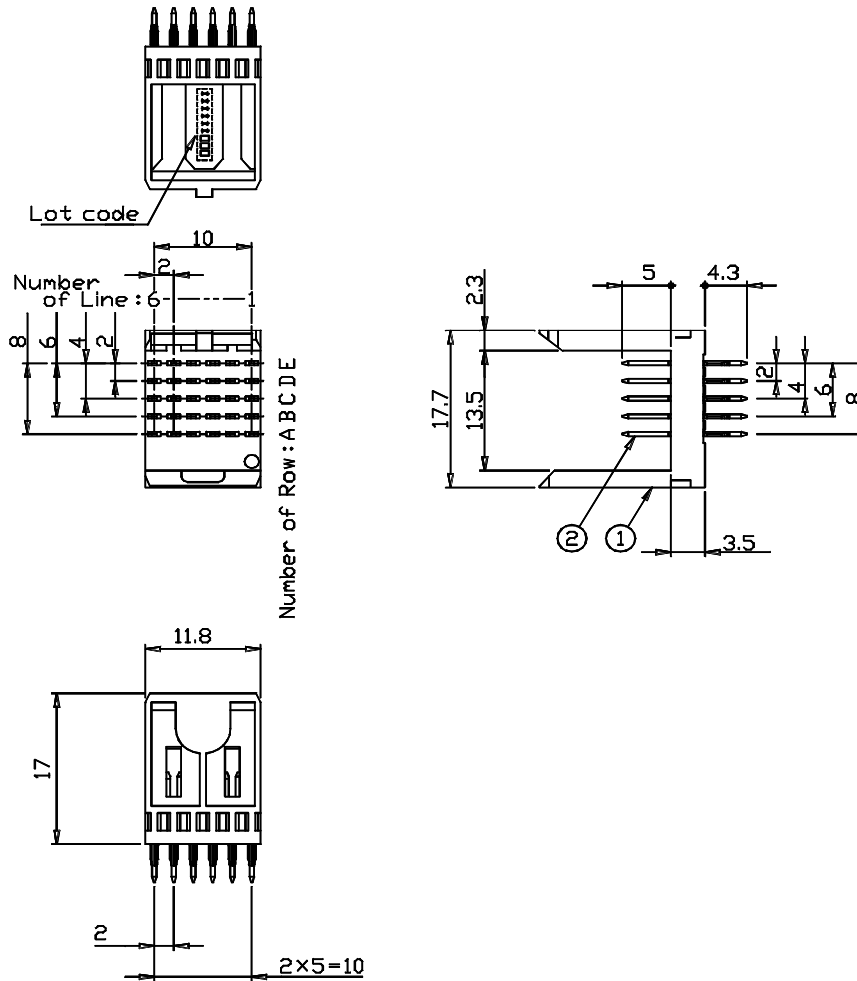
Piece No.	Part No.	Material	Quantity
1	FB-240FA housing	LCP(UL94V-0)	1
2	FB-FA locator	LCP(UL94V-0)	8 or 2 *
3	FB-FA contact	Phosphor bronze	5×48 (240)

*Note - The quantity varies according to size of locator.

Dimensions

Fig. 2-1

FB30MSP2-A-1

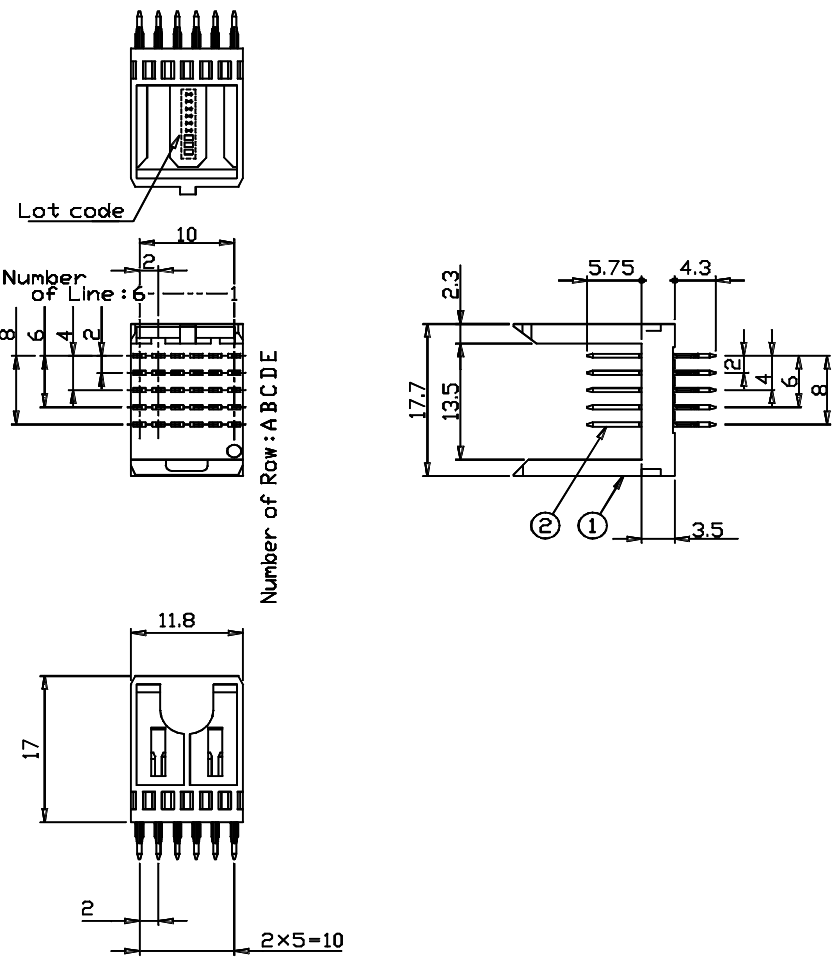


Piece No.	Part number	Material	Quantity
1	FB30MA housing	LCP(UL94-V0)	1
2	FB-MA contact 12	Phosphor bronze	30

Dimensions

Fig. 2-2

FB30MSP2-A-2

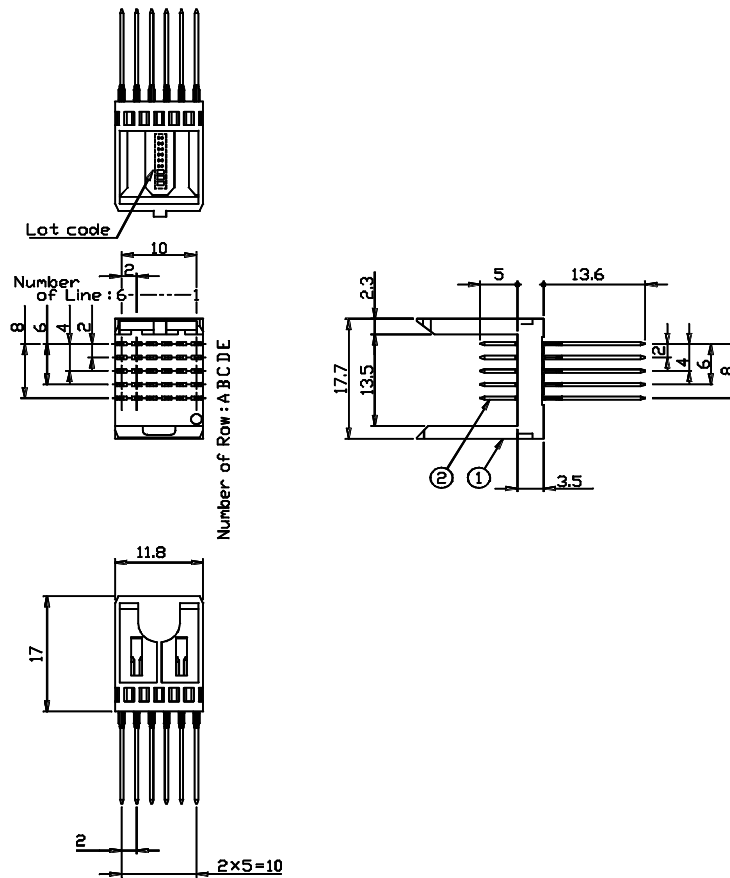


Piece No.	Part number	Material	Quantity
1	FB30MA housing	LCP(UL94-V0)	1
2	FB-MA contact 22	Phosphor bronze	30

Dimensions

Fig. 2-3

FB30MSP4-A-1



Piece No.	Part number	Material	Quantity
1	FB30MA housing	LCP(UL94-V0)	1
2	FB-MA contact 14	Phosphor bronze	30

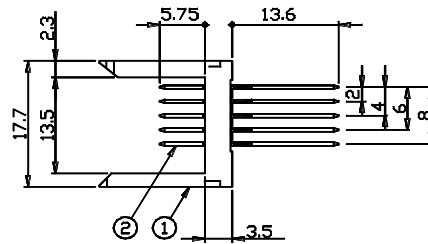
Fig. 2-4

Technical drawings of the connector showing top, side, and front views with dimensions and labels.

Top View: Shows the connector with 10 pins. A label "Lot code" points to a specific area on the top surface.

Side View: Shows the connector with dimensions: 10 (width), 2 (pin height), and 6 (total height). A label "Number of Line : 6" points to the internal structure.

Front View: Shows the connector with dimensions: 11.8 (width), 17 (height), and 2 (pin height). A label "Number of Row : A B C D E" points to the rows of pins. A label "2x5=10" indicates the total number of pins.

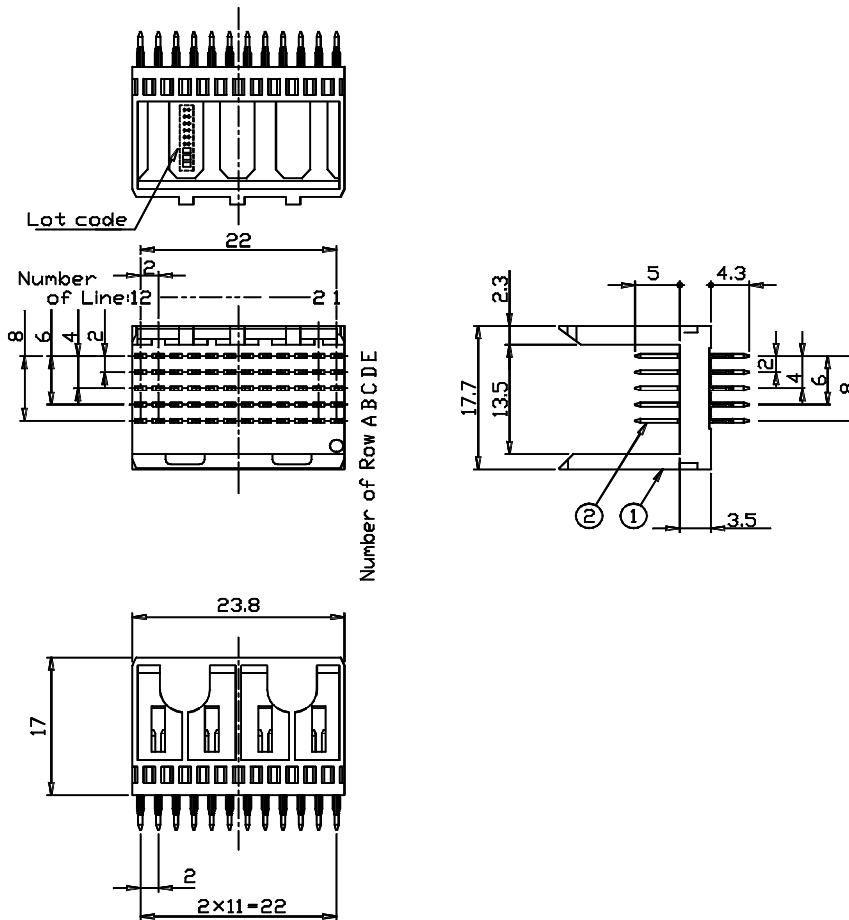


Piece No.	Part number	Material	Quantity
1	FB30MA housing	LCP(UL94-V0)	1
2	FB-MA contact 24	Phosphor bronze	30

Dimensions

Fig. 2-5

FB60MSP2-A-1

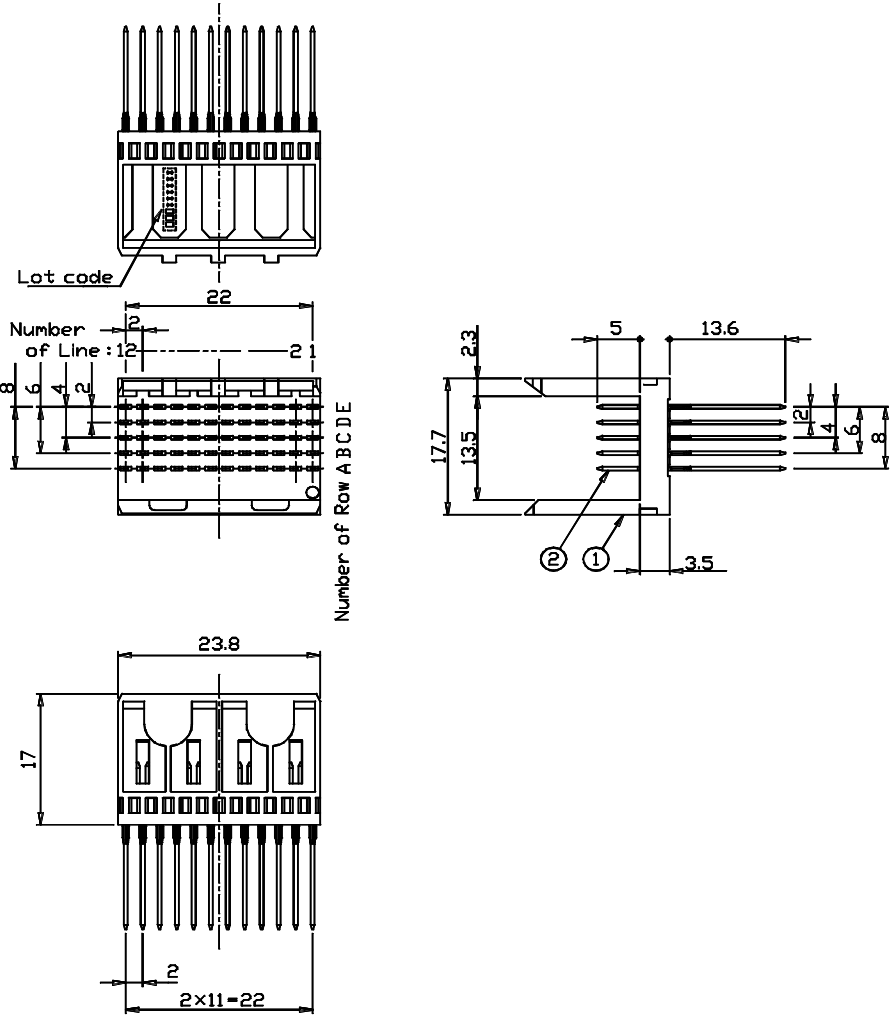


Piece No.	Part number	Material	Quantity
1	FB60MA housing	LCP(UL94-V0)	1
2	FB-MA contact 12	Phosphor bronze	60

Dimensions

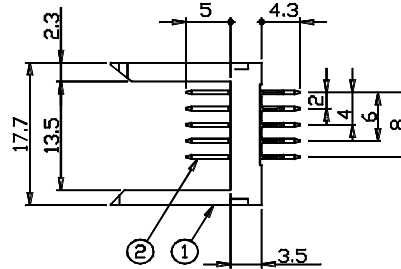
Fig. 2-6

FB60MSP4-A-1



Piece No.	Part number	Material	Quantity
1	FB60MA housing	LCP(UL94-V0)	1
2	FB-MA contact 14	Phosphor bronze	60

Fig. 2-7

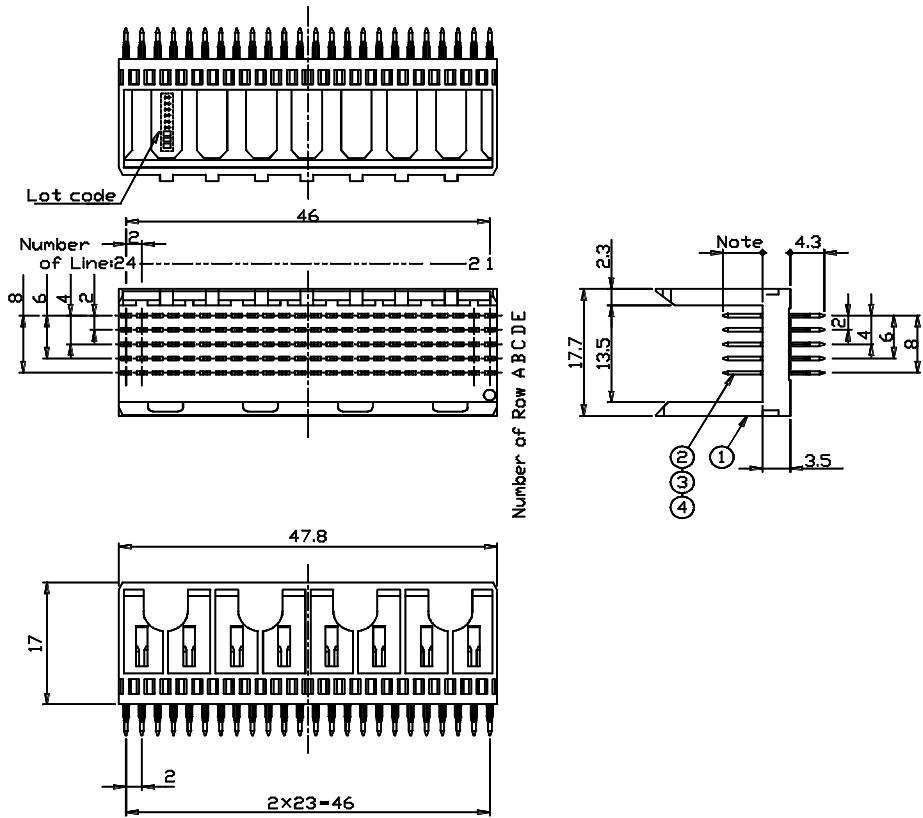


Piece No.	Part number	Material	Quantity
1	FB120MA housing	LCP(UL94-V0)	1
2	FB-MA contact 12	Phosphor bronze	120

Dimensions

Fig. 2-8

FB120MSP2-A-S1



Piece No.	Part number	Material	Quantity
1	FB120MA housing	LCP(UL94-V0)	1
2	FB-MA contact 12	Phosphor bronze	90
3	FB-MA contact 22	Phosphor bronze	20
4	FB-MA contact 32	Phosphor bronze	10

Note) contact sequence
Configuration (front view)

Contact length -

- 01: 5.00mm(FB-MA contact 12)
- 02: 5.75mm(FB-MA contact 22)
- 03: 6.50mm(FB-MA contact 32)

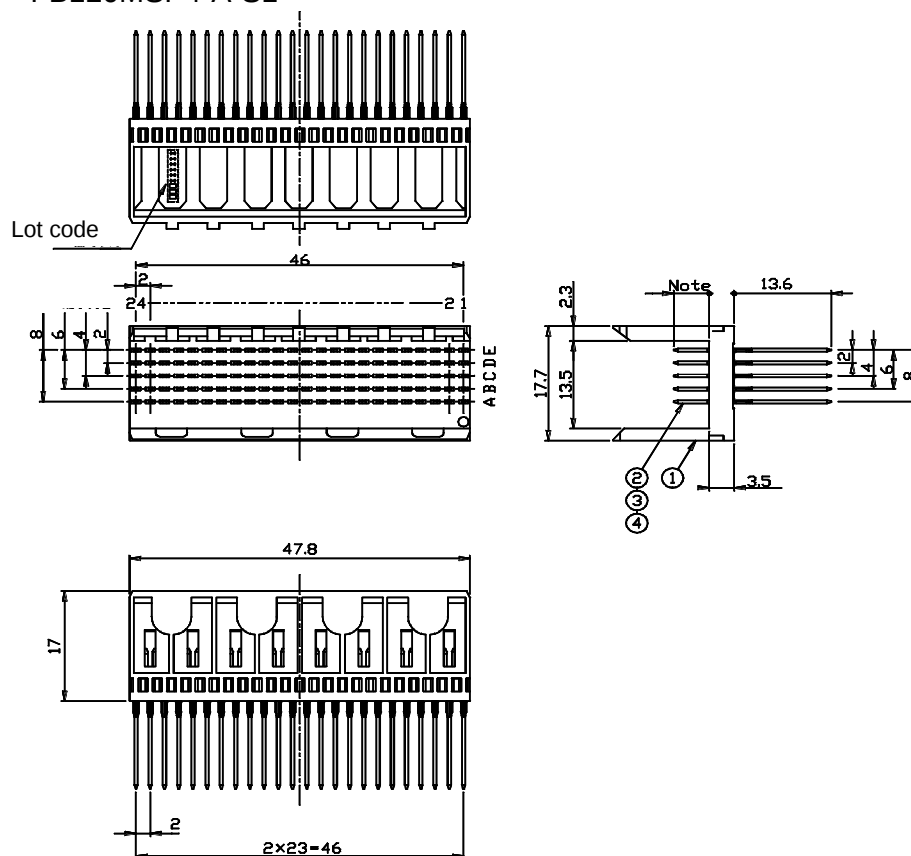
Contact Line Number							
24	23	22	21-4	3	2	1	
03	02	02	01	02	02	03	E
03	02	02	01	02	02	03	D
03	02	02	01	02	02	03	C
03	02	02	01	02	02	03	B
03	02	02	01	02	02	03	A

Contact Row

Dimensions

Fig. 2-9

FB120MSP4-A-S1



Piece No.	Part number	Material	Quantity
1	FB120MA housing	LCP(UL94-V0)	1
2	FB-MA contact 14	Phosphor bronze	90
3	FB-MA contact 24	Phosphor bronze	20
4	FB-MA contact 34	Phosphor bronze	10

Note) Contact sequence
Configuration (front view)

Contact length :

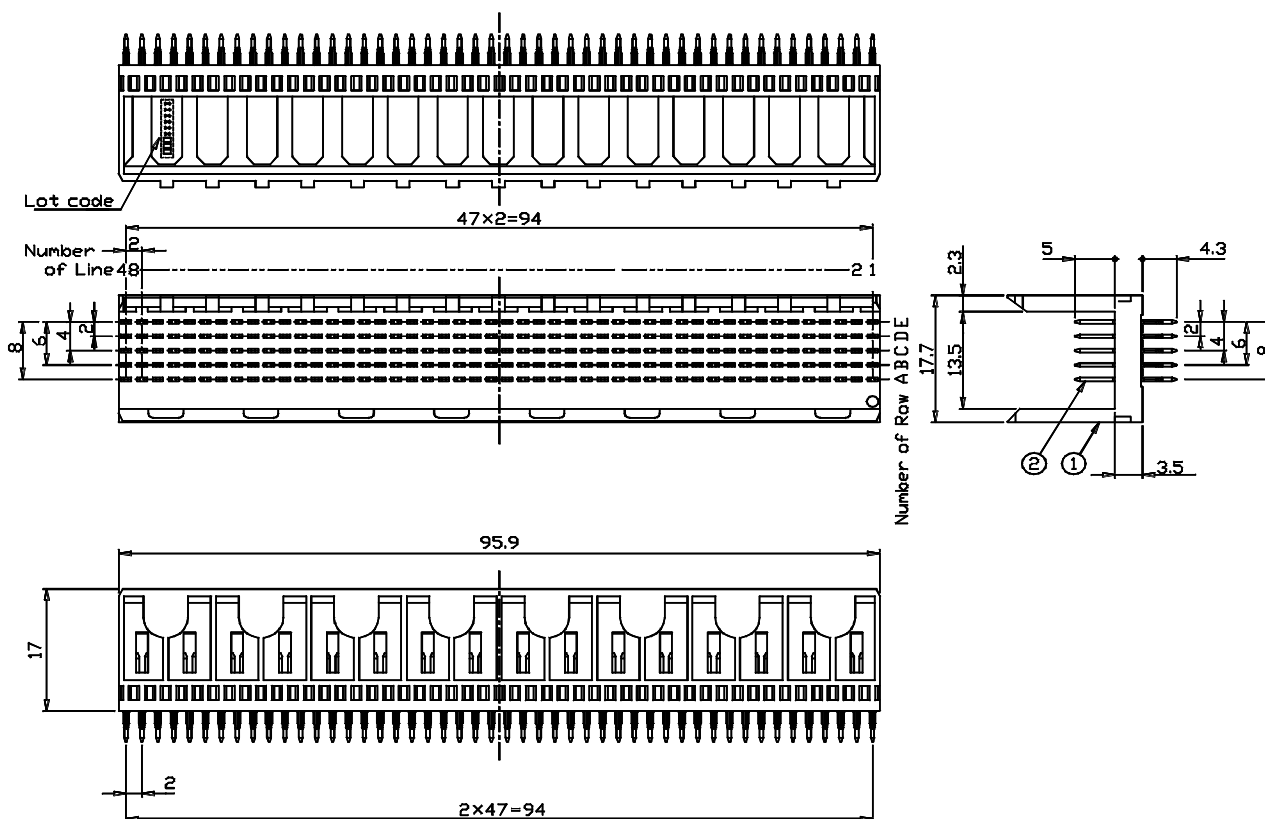
- 01: 5.00 mm (FB-MA contact 14)
- 02: 5.75 mm (FB-MA contact 24)
- 03: 6.50 mm (FB-MA contact 34)

Contact Line Number							
24	23	22	21-4	3	2	1	
03	02	02	01	02	02	03	E Contact Row
03	02	02	01	02	02	03	D
03	02	02	01	02	02	03	C
03	02	02	01	02	02	03	B
03	02	02	01	02	02	03	A

Dimensions

Fig. 2-10

FB240MSP2-A-1

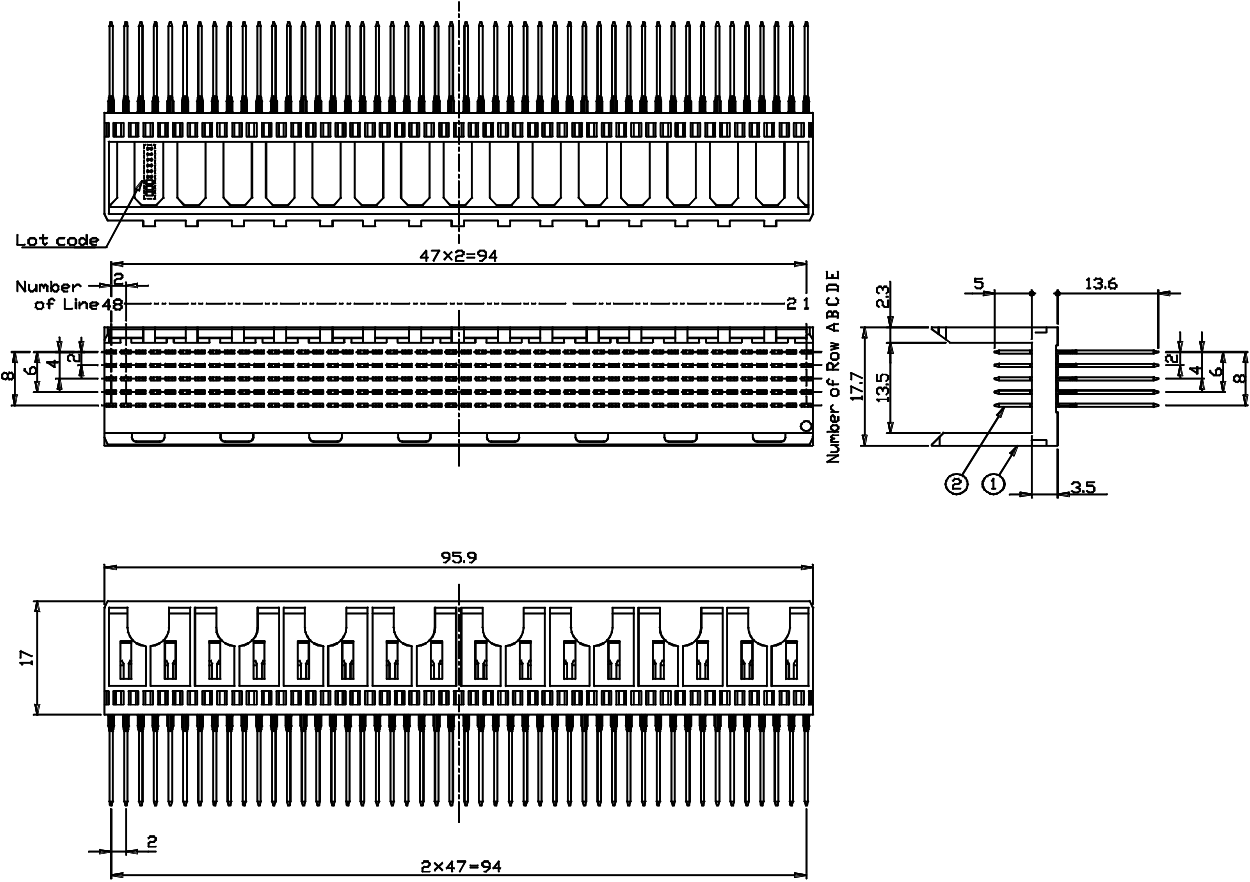


Piece No.	Part number	Material	Quantity
1	FB240MA housing	LCP(UL94-V0)	1
2	FB-MA contact 12	Phosphor bronze	240

Dimensions

Fig. 2-11

FB240MSP4-A-1

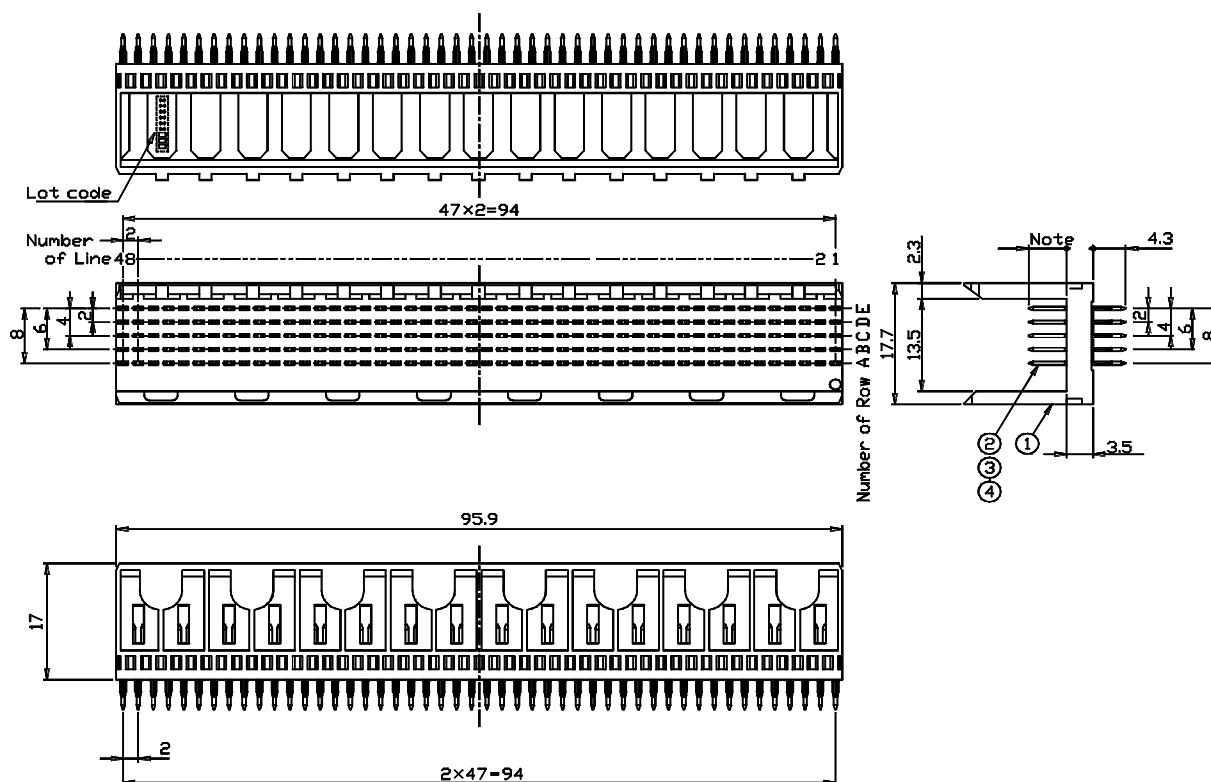


Piece No.	Part number	Material	Quantity
1	FB240MA housing	LCP(UL94-V0)	1
2	FB-MA contact 14	Phosphor bronze	240

Dimensions

Fig. 2-12

FB240MSP2-A-S1



Piece No.	Part number	Material	Quantity
1	FB240MA housing	LCP(UL94-V0)	1
2	FB-MA contact 12	Phosphor bronze	210
3	FB-MA contact 22	Phosphor bronze	20
4	FB-MA contact 32	Phosphor bronze	10

Note) Contact sequence

Configuration (front view)

Contact length:

01: 5.00mm (FB-MA contact 12)

02: 5.75mm (FB-MA contact 22)

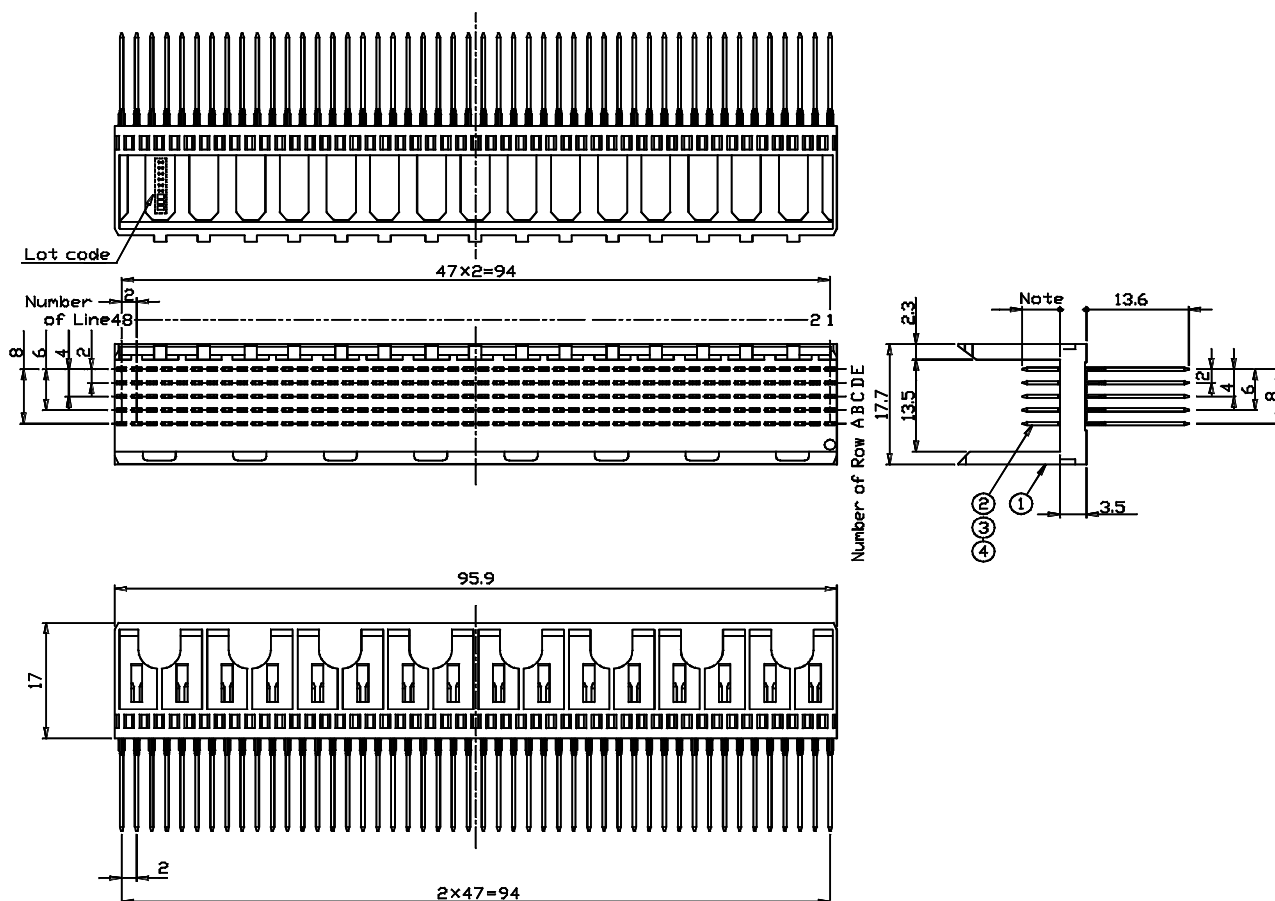
03: 6.50mm (FB-MA contact 32)

Contact Line Number							Contact Row
48	47	46	45-4	3	2	1	
03	02	02	01	02	02	03	
03	02	02	01	02	02	03	
03	02	02	01	02	02	03	
03	02	02	01	02	02	03	
							A
							B
							C
							D
							E

Dimensions

Fig. 2-13

FB240MSP4-A-S1



Piece No.	Part number	Material	Quantity
1	FB240MA housing	LCP(UL94-V0)	1
2	FB-MA contact 14	Phosphor bronze	210
3	FB-MA contact 24	Phosphor bronze	20
4	FB-MA contact 34	Phosphor bronze	10

Note) Contact sequence

Configuration (front view)

Contact length:

01: 5.00mm(FB-MA contact 14)

02: 5.75mm(FB-MA contact 24)

03: 6.50mm(FB-MA contact 34)

Contact Line Number							E D C B A	Contact Row
48	47	46	45-4	3	2	1		
03	02	02	01	02	02	03		
03	02	02	01	02	02	03		
03	02	02	01	02	02	03		