160401 ver.1.7

EHC CELLS

TEST CELL

COMB type CELL

WEDGE CELL

EHC

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《 TEST CELL 》

1. CELL

INDICATION & MARK

The expiration of EHC cell is 6 months

CONTENTS

《 COMB type CELL 》

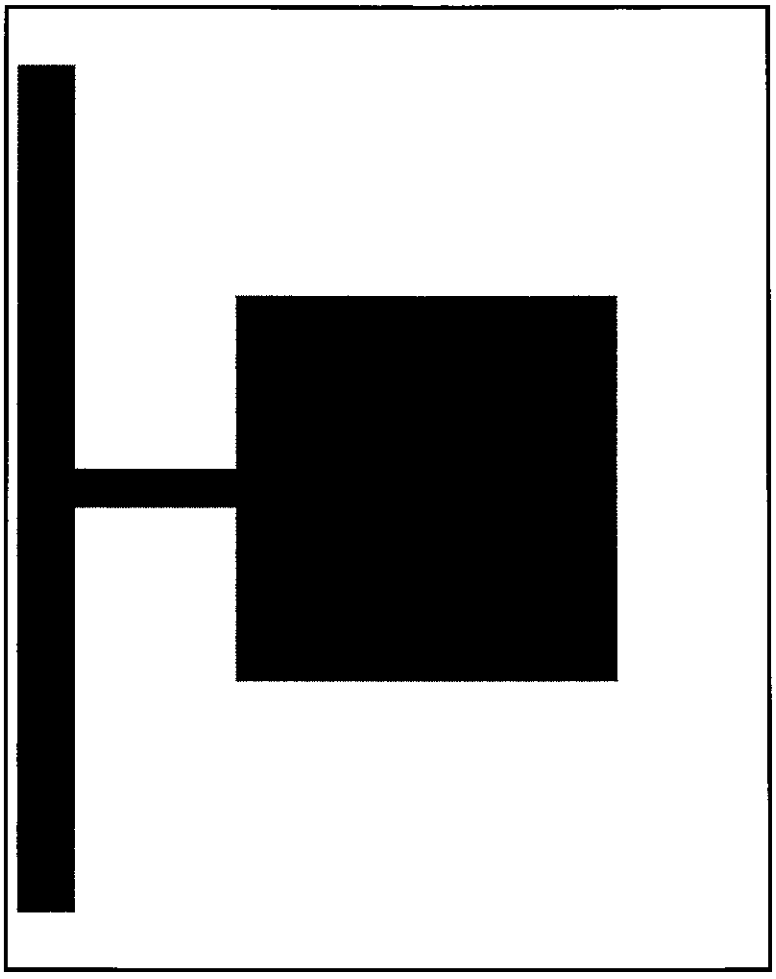
1. CELL

INDICATION & MARK

《WEDGE CELL》

INDICATION & MARK

TEST CELL



TEST CELL

INDICATION: KS RO - 02 / A 2 11 P 1 N S S 05 X

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

①【KS】MEANS TEST CELL

②【DIRECTION】【ANGLE】

MARK	◆DIRECTION	◇ANGLE
RT	HORIZONTAL	LEFT 90°
RS	HORIZONTAL	RIGHT 90°
RP	HORIZONTAL	180°
RO	HORIZONTAL	360°
Rt	HORIZONTAL	ONLY LOW
RZ	HORIZONTAL	NA
RX	HORIZONTAL	OPTIONAL
SZ	NA	NA
HH	VERTICAL	NA

◆ HORIZONTAL(POLYIMIDE)

- LX-1400 (HITACHI-KASEI)
- THICKNESS : WITHIN 200 Å

◆ VERTICAL(SURFACE-ACTIVE AGENT)

- CETYL-TRIMETHYL-AMMONIUM-BROMIDE

◆ FILM METHOD

- SPIN COURT

◇ RUBBING ROLL

- FIBER : POLYESTER
- FIBER LENGTH : 8mm
- ROLL DIAMETER : 58mm

◇ RUBBING CONDITION

- ROTATIONAL SPEED : 600rpm
- STAGE SPEED : 30mm/sec
- ROUND TRIP FREQUENCY : 3 TIMES

◇ RUBBING DIRECTION

- REFERENCE PAGE 9~13

③【CELL GAP】

MARK	CELL GAP
02	2 μm
03	3 μm
04	4 μm
05	5 μm
06	6 μm
07	7 μm
08	8 μm
09	9 μm
10	10 μm
15	15 μm
25	25 μm
50	50 μm

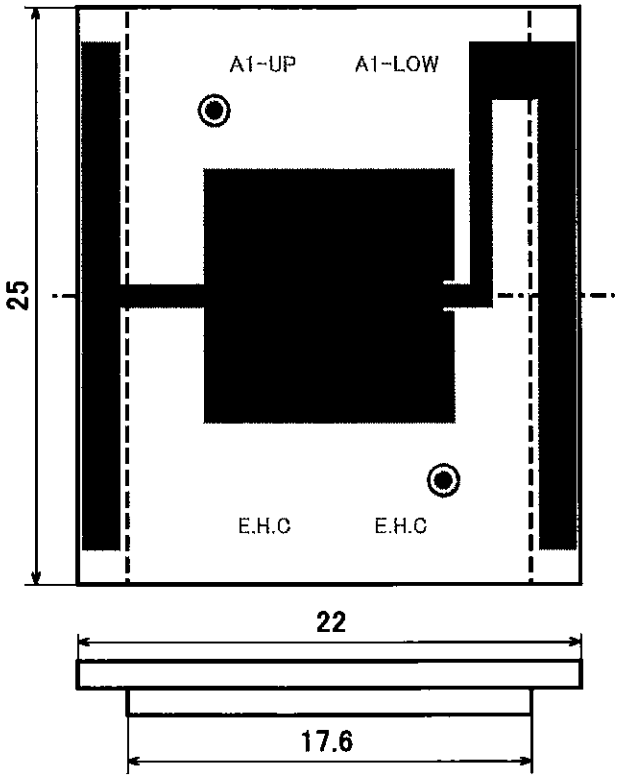
TEST CELL

INDICATION: KS RO - 02 / A 2 11 P 1 N S S 05 X

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

④【CELL TYPE】

A-type



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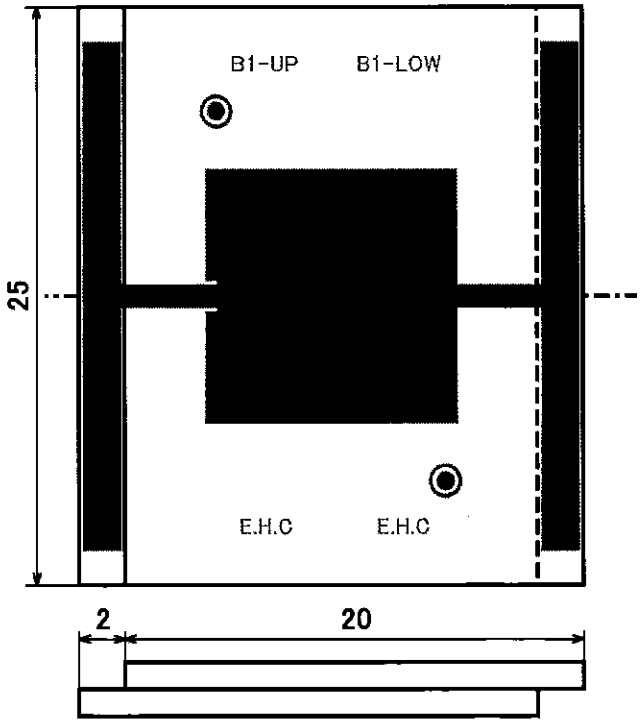
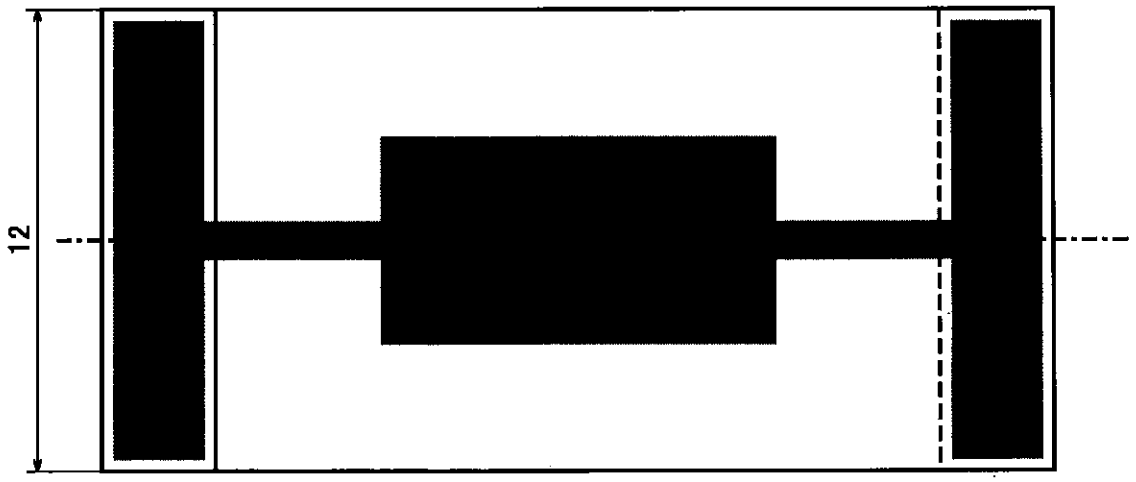


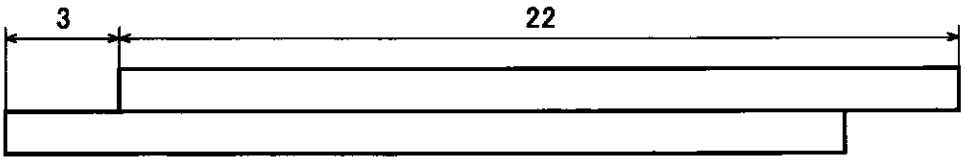
INDICATION KS RO - 02 / A 2 11 P 1 N S S 05 X

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

④【CELL TYPE】

D-type





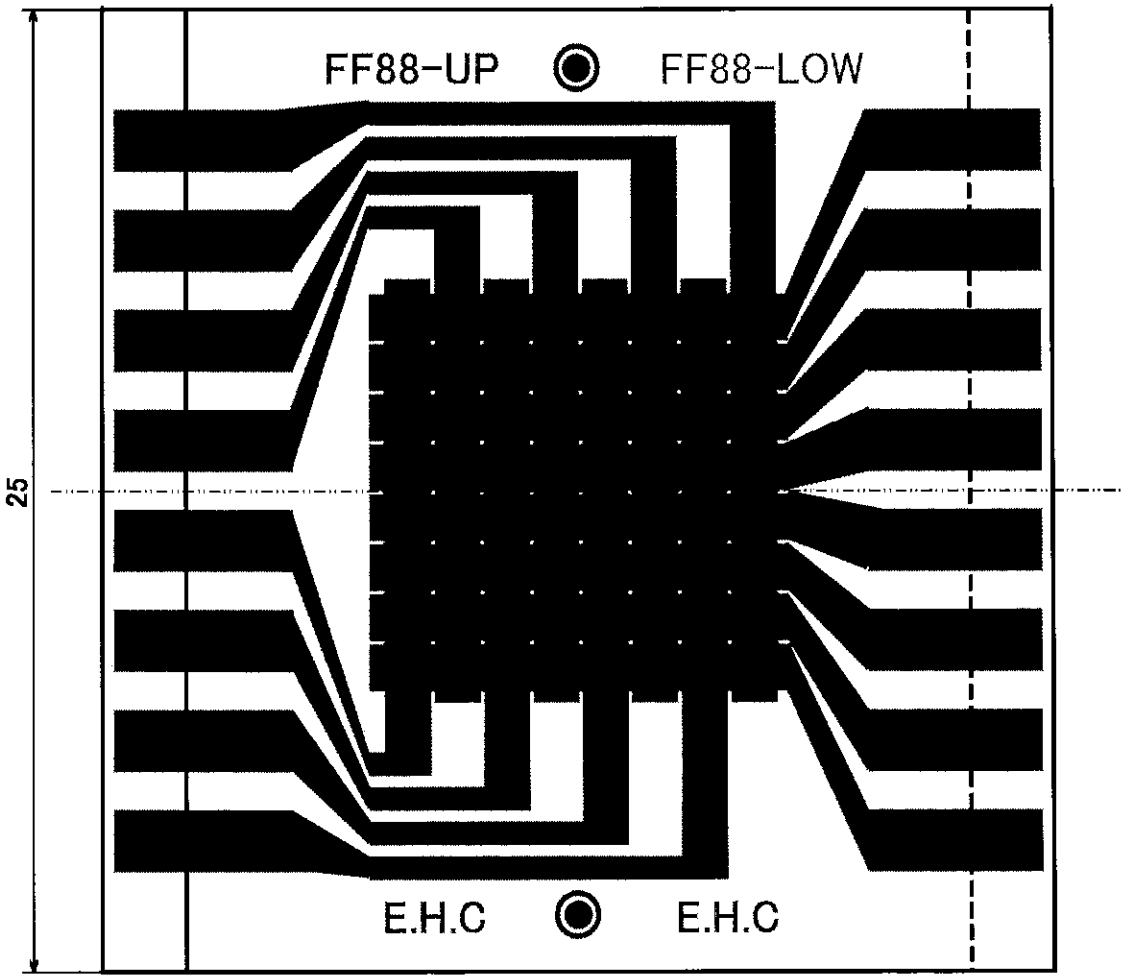
TEST CELL

INDICATION KS RO - 02 / A 2 11 P 1 N S S 05 X

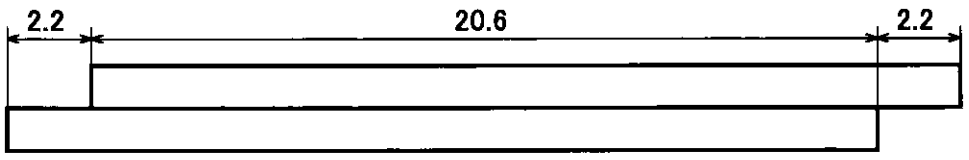
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

④【CELL TYPE】

FF(88)-type



VIEWING AREA : LINE (1.2×8) + SPACE (0.05×7)

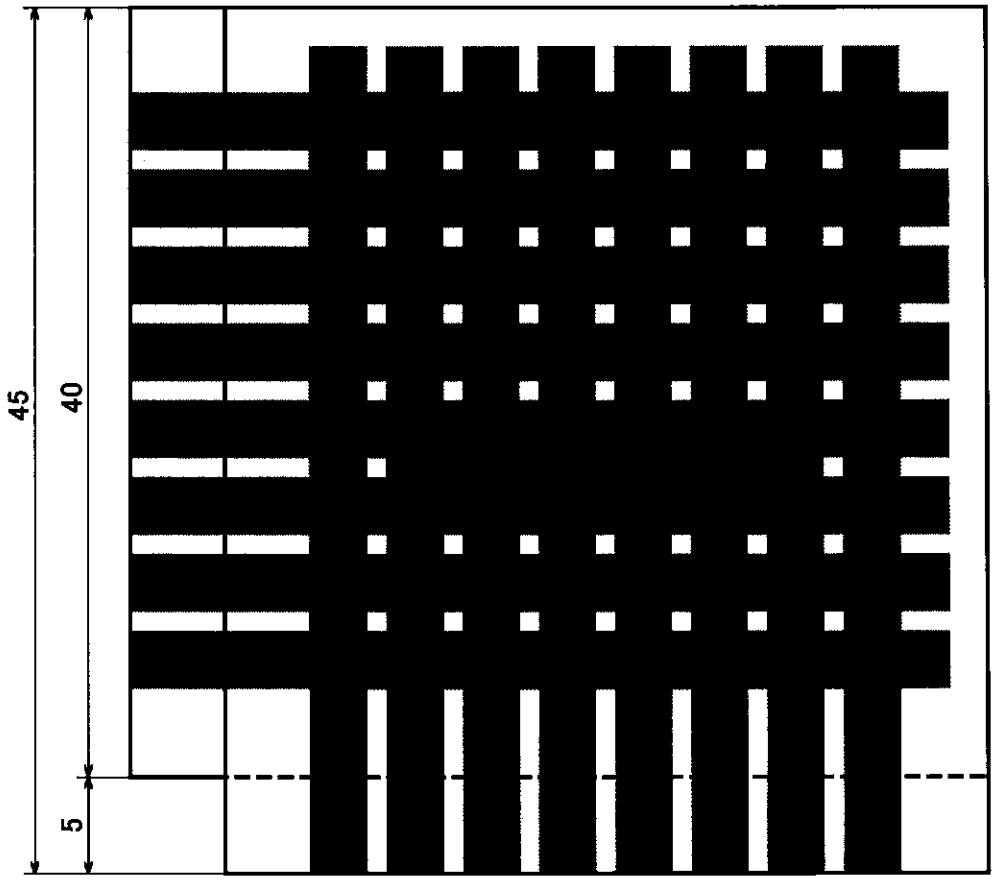


INDICATION KS RO - 02 / A 2 11 P 1 N S S 05 X

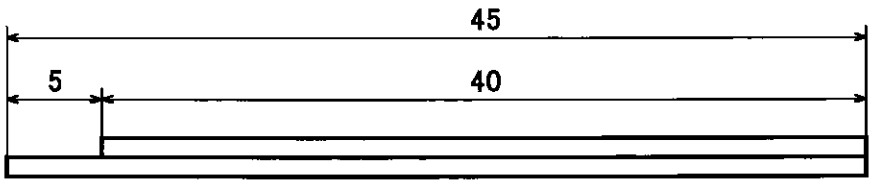
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

④【CELL TYPE】

DM(88)-type



VIEWING AREA : LINE (3.0×8) + SPACE (1.0×7)



INDICATION KS RO - 02 / A 2 11 P 1 N S S 05 X

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

⑤【VIEWING AREA】

MARK	VIEWING AREA
1	10mm × 10mm
2	5mm × 5mm
3	4mm × 4mm
5	NA
6	10mm × 5mm

(NOTE) IF YOU SELECT "FF(88)" "DM(88)", THE ABOVE-MENTIONED ITEM IS NOT APPLIED.

(NOTE) ITEM 6 IS ONLY Dtype.

⑥【GLASS THICKNESS】

MARK	GLASS THICKNESS
07	0.7mm
11	1.1mm

⑦【GLASS MATERIAL】

MARK	GLASS MATERIAL
P	SODA LIME
M	BOROSILICATE

⑧【ITO RESISTIVITY】

MARK	ITO RESISTIVITY	THICKNESS
1	WITHIN 100Ω	200~400Å
6	WITHIN 10Ω	1000~1600Å
7	NOT ITO	NOT ITO

● FILM METHOD IS SPUTTERING.

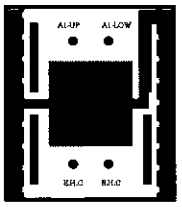
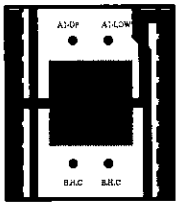
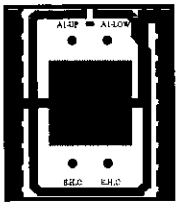
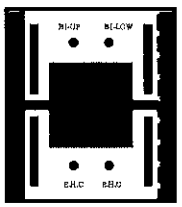
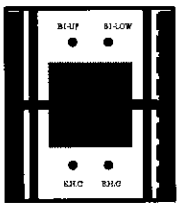
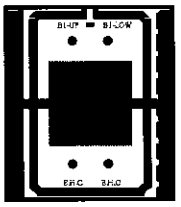
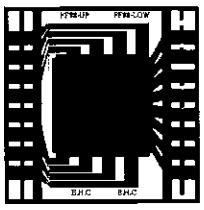
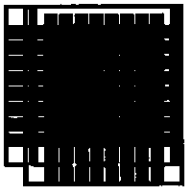
⑨【N】 MEANS NO INSULATION.

TEST CELL

INDICATION KS RO - 02 / A 2 11 P 1 N S S 05 X

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

⑩ 【SEALING FORM

MARK / CELL	S	T	C
	OPEN	2 HOLE	1 HOLE
A type			
B type			
D type			
FF(88) type			
DM(88) type			

(NOTE) SEALING FORM MIGHT CHANGE WITHOUT A PRIVIOUS

INDICATION KS RO - 02 / A 2 11 P 1 N S S 05 X

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

⑪【SEAL MATERIAL】

MARK	SEAL MATERIAL
S	EPOXY RESIN

⑫【05】MEANS CELL GAP ALLOWANCE ±0.5 μm.

CELL GAP	ALLOWANCE
2~4 μm	±0.5 μm
5~10 μm	±0.5 μm
	±1.5 μm
15 μm	±3 μm
25 μm	±5 μm
50 μm	±10 μm

(NOTE) 『05』 IS INDICATE. OTHERS IS NOT INDICATE.

(NOTE) IT IS APPLIED Atype、Btype、Dtype.

(NOTE) CELL GAP IS MEASURED BY IMPEDANCE MEASUREMENT METHOD.

⑬【X】MEANS EXCEPT STANDARD.

● DIRECTION FILM

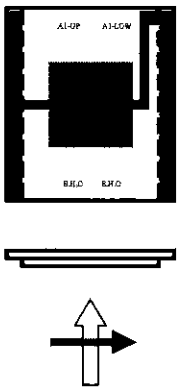
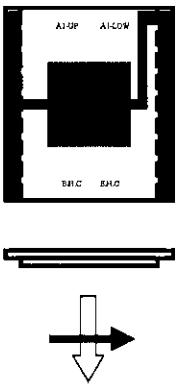
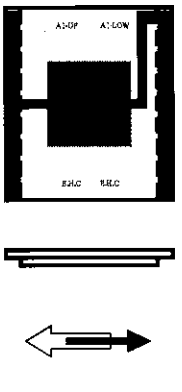
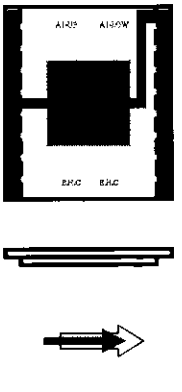
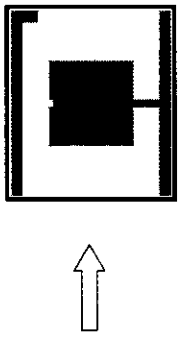
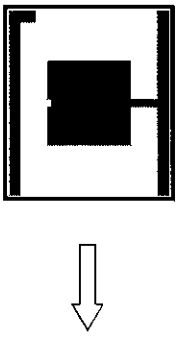
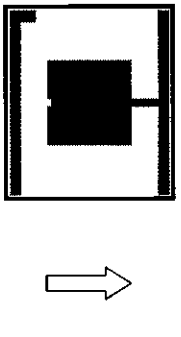
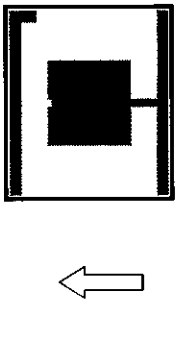
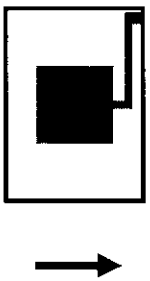
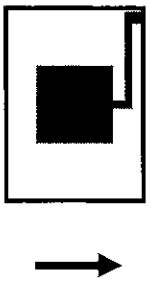
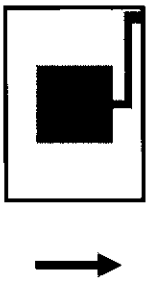
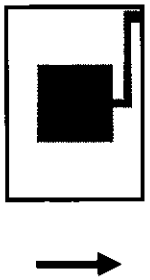
·PROVISION : CONTACT ABOUT COATING & BAKING CONDITION

● RUBBING CONDITION

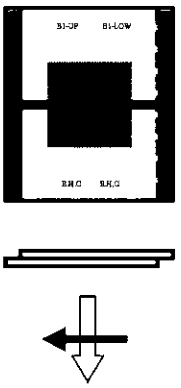
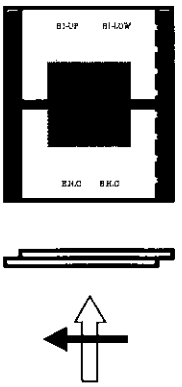
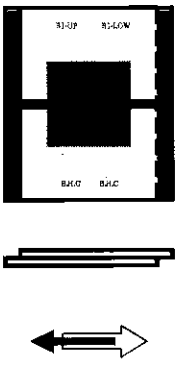
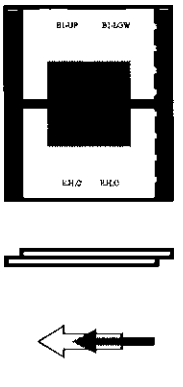
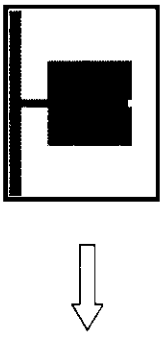
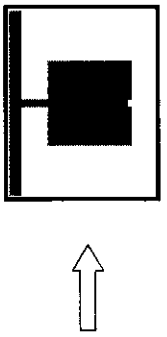
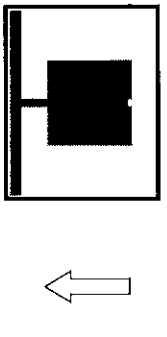
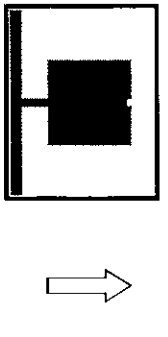
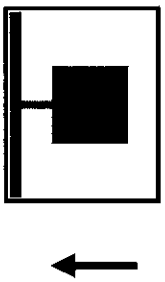
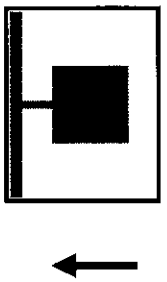
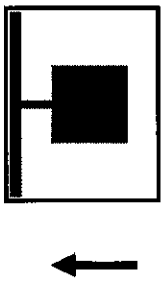
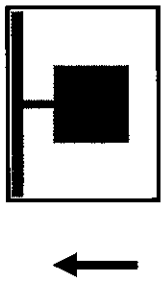
·CONDITION : ROTATIONAL-SPEED STAGE-SPEED ROUND-TRIP-FREQUENCY

·DIRECTION : ARBITRARY ANGLE

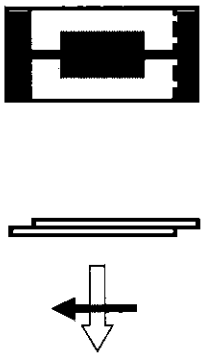
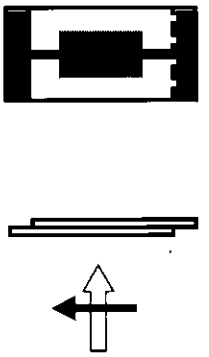
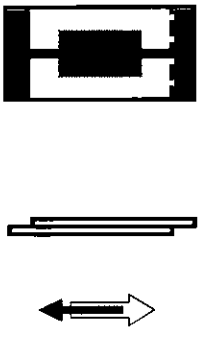
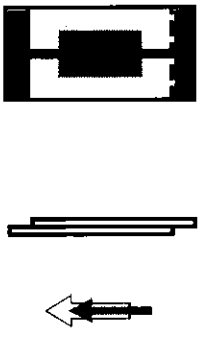
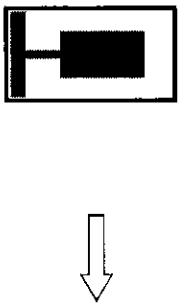
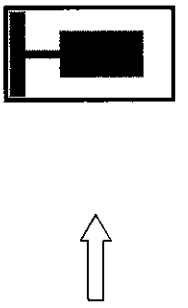
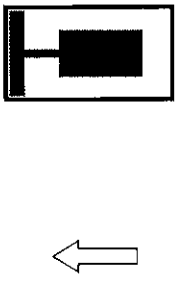
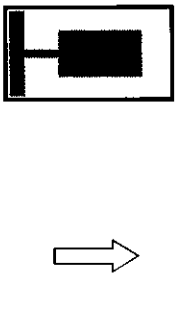
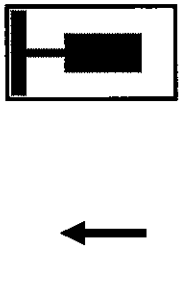
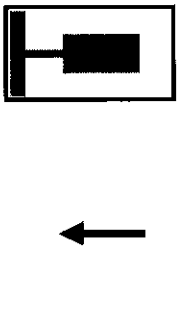
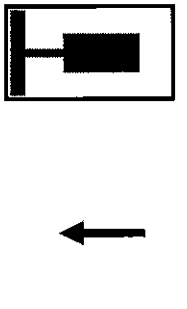
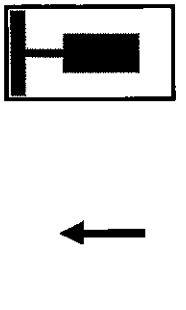
DIRECTION CHART·····A-type

MARK	RT	RS	RP	RO
ANGLE	LEFT 90°	RIGHT 90°	180°	360°
UNIT				
UP				
LOW				

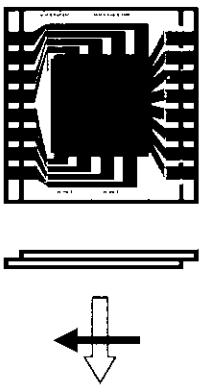
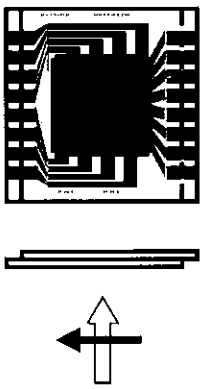
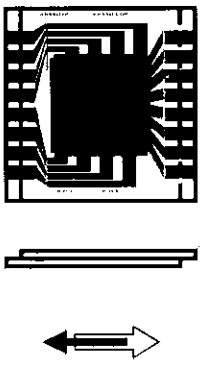
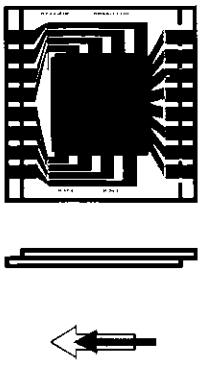
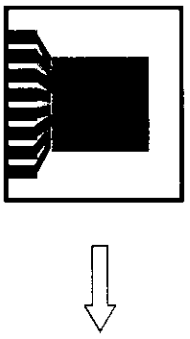
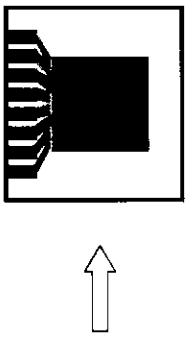
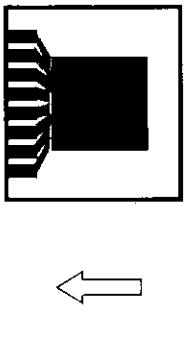
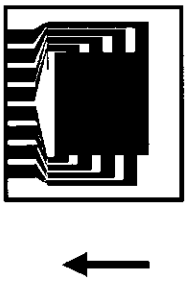
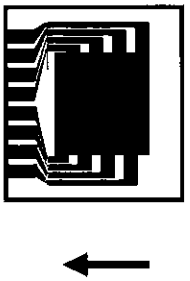
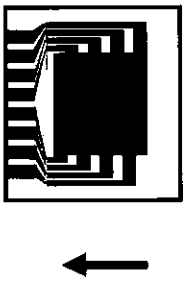
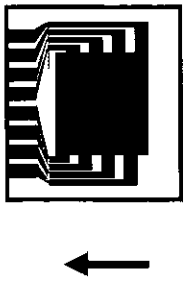
DIRECTION CHART·····B-type

MARK	RT	RS	RP	RO
ANGLE	LEFT 90°	RIGHT 90°	180°	360°
UNIT				
UP				
LOW				

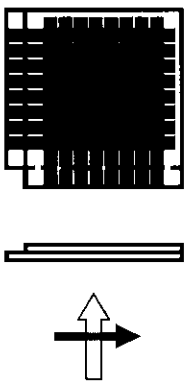
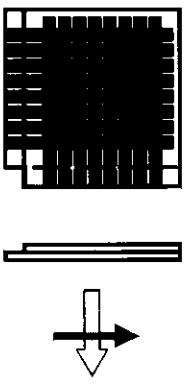
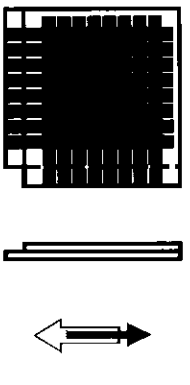
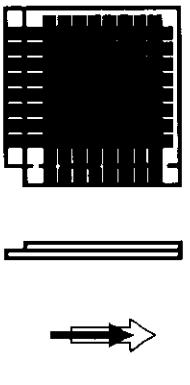
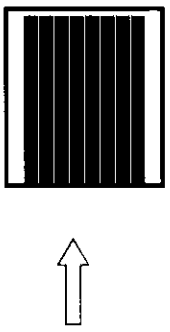
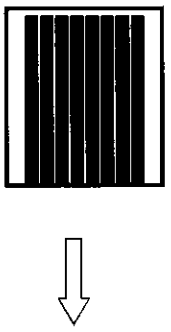
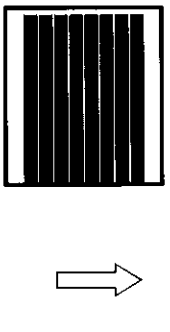
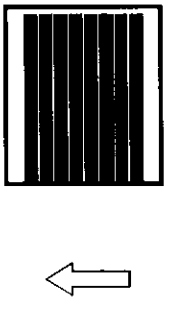
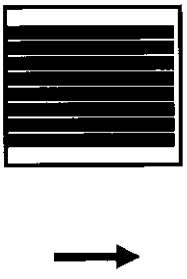
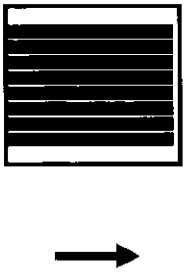
DIRECTION CHART·····D-type

MARK	RT	RS	RP	RO
ANGLE	LEFT 90°	RIGHT 90°	180°	360°
UNIT				
UP				
LOW				

DIRECTION CHART·····FF(88)-type

MARK	RT	RS	RP	RO
ANGLE	LEFT 90°	RIGHT 90°	180°	360°
UNIT				
UP				
LOW				

DIRECTION CHART·····DM(88)-type

MARL	RT	RS	RP	RO
ANGLE	LEFT 90°	RIGHT 90°	180°	360°
UNIT				
UP				
LOW				

PRISE LIST

Atype・Btype・Dtype

CELL GAP (μ m)	MINIMUM(PCS)	UNIT PRICE (JAP.YEN)	
		Atype	Btype・Dtype
2±0.5	30	1,460	1,360
3±0.5	30	1,360	1,260
4±0.5	50	910	810
5±0.5	50	810	710
5±1.5	50	760	660
6±0.5	100	710	610
6±1.5	100	610	510
7±0.5	100	660	560
7±1.5	100	590	490
8±0.5	100	610	510
8±1.5	100	580	480
9±0.5	100	610	510
9±1.5	100	580	480
10±0.5	100	610	510
10±1.5	100	580	480
15±3	100	760	660
25±5	50	1,060	960
50±10	50	1,310	1,210

※ PLEASE CONTACT EXCLUDING THE ABOVE-MENTIONED

PRICE LIST

EXCLUDING STANDARD

SEALING FORM	UNIT PRICE(JAP.YEN)
2 HOLE(CELL GAP 2～4μm)	250
2 HOLE(CELL GAP 5～6μm)	200
2 HOLE(CELL GAP 7～10μm)	100
2 HOLE(CELL GAP 15μm OR MORE)	250
1 HOLE(CELL GAP 2～4μm)	450
1 HOLE(CELL GAP 5～6μm)	300
1 HOLE(CELL GAP 7～10μm)	150
1 HOLE(CELL GAP 15μm OR MORE)	450

OTHERS	UNIT PRICE(JAP.YEN)
BOROSILICATE GLASS	60
VERTICAL(CETYL-TRIMETHYL-AMMONIUM-BROMIDE)	200
PROVIDED DIRECTION MATERIAL	200
RUBBING CONDITION	120
RUBBING DIRECTION	100
FF(88)	400
DM(88)	ESTIMATE
Non-direction film region is stripped	100

SUBSTRATE

ITO PATTERNED SUBSTRATE

NAME	SPECIFICATION	KIND	MINIMUM	UNIT PRICE (JPY)
ITO GLASS	STANDARD	SODA LIME	100 SETS	21,000
	TEST CELL A·BTYPE	BOROSILICATE	100 SETS	24,000
	FF(88)	SODA LIME	100 SETS	33,000
		BOROSILICATE	100 SETS	50,000
	DM(88)	SODA LIME	50 SHEETS	30,000
		BOROSILICATE	50 SHEETS	50,000
	SPECIAL SPEC.	ESTIMATE		

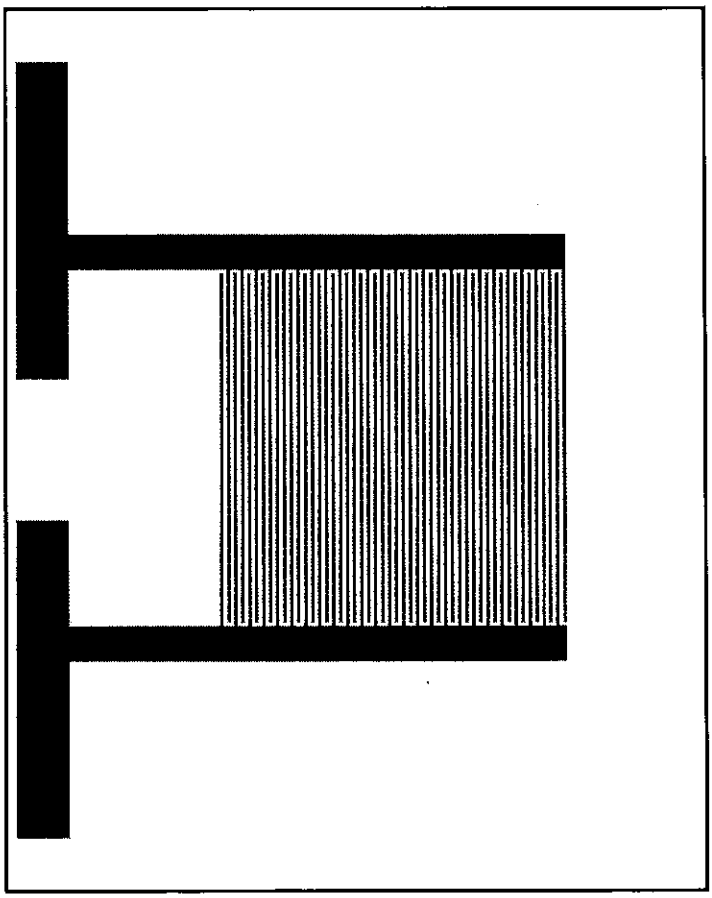
DIRECTION

NAME	SPECIFICATION	KIND	MINIMUM	UNIT PRICE (JPY)
DIRECTION FILM	STANDARD(HORIZONTAL) : entire surface coating	LX-1400 (HITACHI-KASEI)	100 SETS	6,000
	STANDARD(HORIZONTAL) : Non-direction film region is stripped	LX-1400 (HITACHI-KASEI)	100 SETS	16,000
	SURFACE-ACTIVE AGENT	CETYL-TRIMETHYL-AMMONIUM-BROMIDE	100 SETS	12,000
	PROVIDED DIRECTION MATERIAL	STANDARD FF(88)	100 SETS	18,000
		DM(88)	50 SHEETS	10,000

RUBBIMG

NAME	SPECIFICATION	KIND	MINIMUM	UNIT PRICE (JPY)
RUBBING	STANDARD	STANDARD (REFERENCE PAGE 9~10)	100 SETS	5,000
	FF(88)	SAME DIRECTION AS A PART	100 SETS	5,000
	DM(88)	SAME DIRECTION AS A PART	50 SHEETS	5,000

COMB type CELL



COMB type CELL

INDICATION: IS RO - 05 / B 7 07 M 6 N S S X

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

①【IS】 COMB type ELECTRODE

②【DIRECTION】【ANGLE】

MARK	◆DIRECTION	◇ANGLE
RP	POLYIMIDE	180°
RO	POLYIMIDE	360°
RX	POLYIMIDE	OPTIONAL
SZ	NA	NA

◆ POLYIMIDE

- LX-1400 (HITACHI CHEMICALS)
- COATING THICKNESS : WITHIN 200Å

◆ COATING METHOD

- SPIN COAT

◇ RUBBING CONDITION

- ROTATIONAL SPEED : 600rpm
- STAGE SPEED : 30mm/sec
- ROUND TRIP FREQUENCY : 3TIMES

◇ RUBBING ROLL

- FIBER :COTTON
- FIBER LENGTH : 2.5mm
- ROLL DIAMETER : 52mm

◇ RUBBING CONDITION

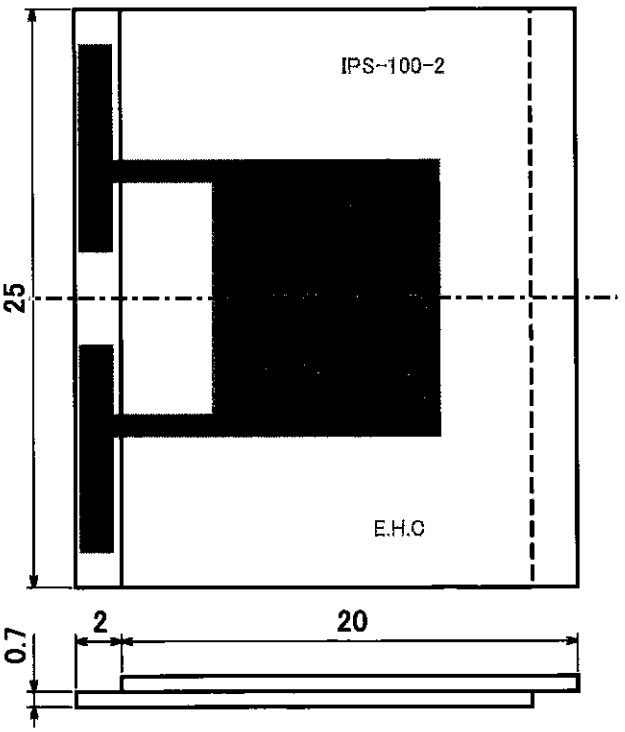
REFER TO PAGE4

③【CELL GAP】

MARK	CELL GAP
05	5μm
06	6μm
07	7μm
08	8μm
09	9μm
10	10μm

④ 【CELL TYPE】

B(COMB type)type



⑤【VIEWING AREA】

MARK	VIEWING AREA SIZE
7	9.99mm×10mm(L/S=10μm/10μm)

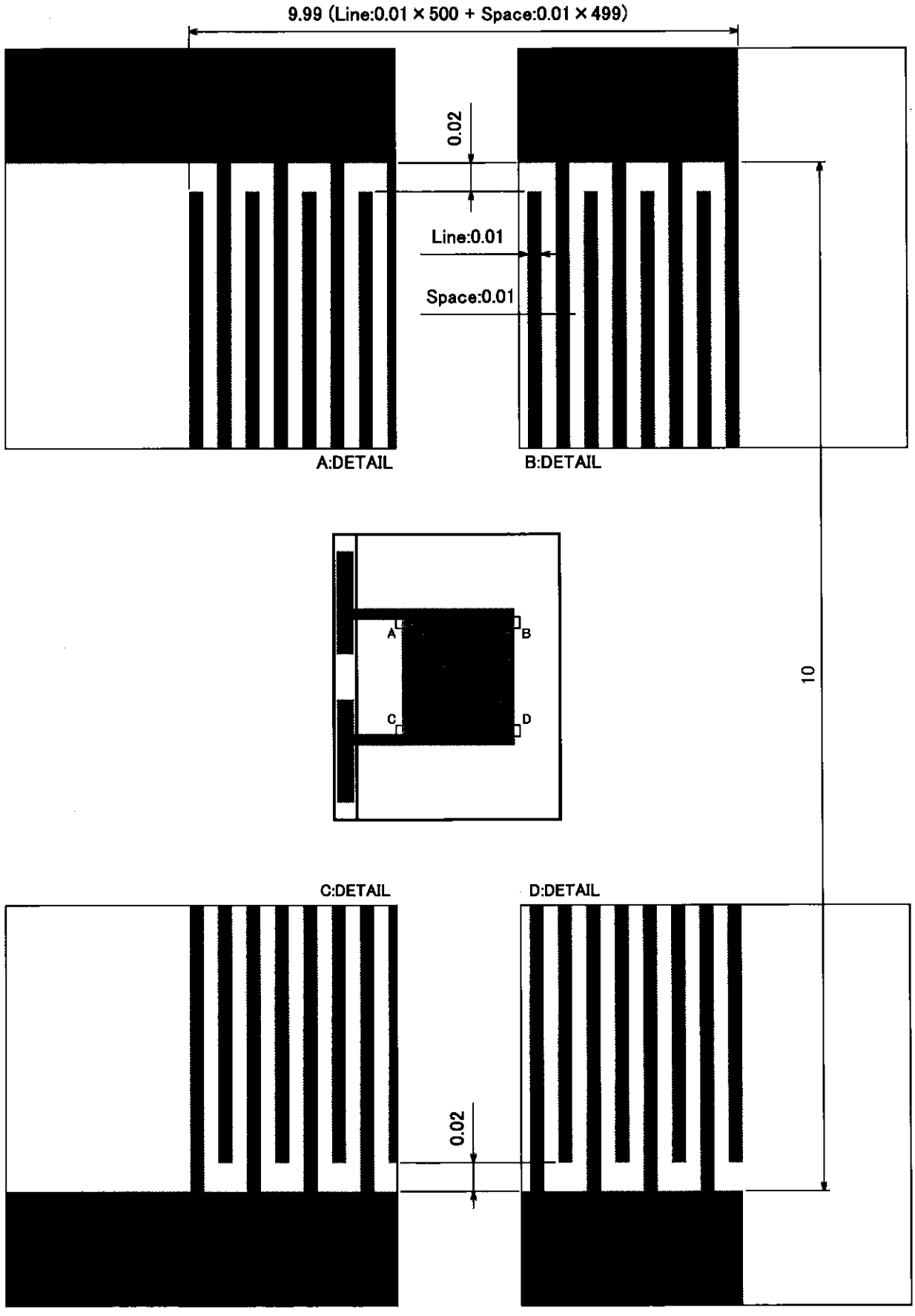
⑥【GLASS THICKNESS】

MARK	THICKNESS
07	0.7mm

⑦【GLASS MATERIAL】

MARK	GLASS MATERIAL
M	BOROSILICATE GLASS

DETAILS OF VIEWING AREA



COMB type CELL

INDICATION: IS RO - 05 / B 7 07 M 6 N S S X

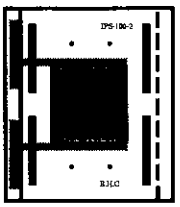
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

⑧【COUNTER SUBSTRATE】

MARK	COUNTER SUBSTRATE	ITO RESISTIVITY	THICKNESS
6	ITO	WITHIN 10Ω	1000~1600Å
7	BARE GLASS	NOT ITO	——
8	B107M6N	WITHIN 10Ω	1000~1600Å

⑨【N】 ITO NOT INSULATED

⑩【SEALING FORM】

MARK / CELL	S (OPEN)
B(COMB type) type	

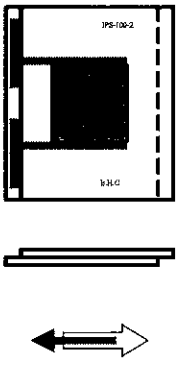
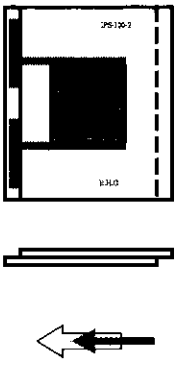
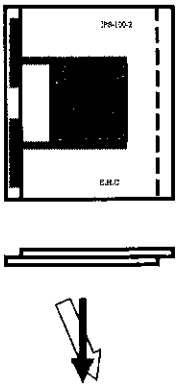
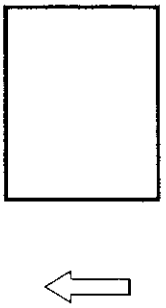
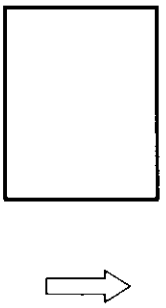
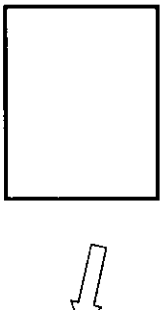
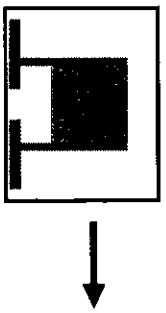
⑪【SEAL MATERIAL】

MARK	SEAL MATERIAL
S	Struct Bond (XN-21-S)
X	PROVIDED SEAL MATERIAL

⑫【X】 EXCEPT STANDARD

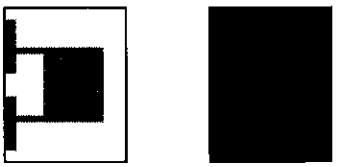
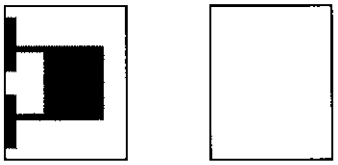
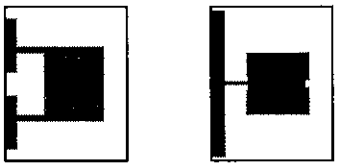
- DIRECTION
  - PROVIDED DIRECTION MATERIAL
- RUBBING CONDITION
  - CONDITION : ROTATION-SPEED , STAGE-SPEED, ROUND-TRIP-FREQUENCY
  - DIRECTION : ARBITRARY ANGLE
- SEALING FORM
  - TO BE DISCUSSED
- SEAL MATERIAL
  - TO BE DISCUSSED

DIRECTION CHART·····B (COMB type)-type

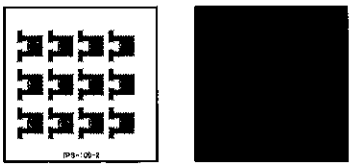
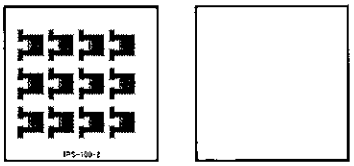
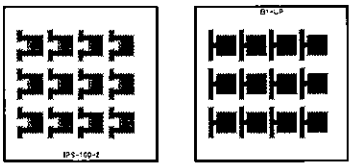
MARK	RP	RO	RX
ANGLE	180°	360°	X°
UNIT			
UP			
LOW			

GLASS SUBSTRATE

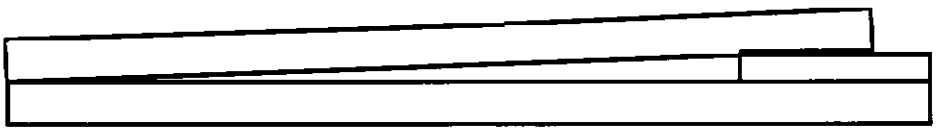
SINGLE SUBSTRATE

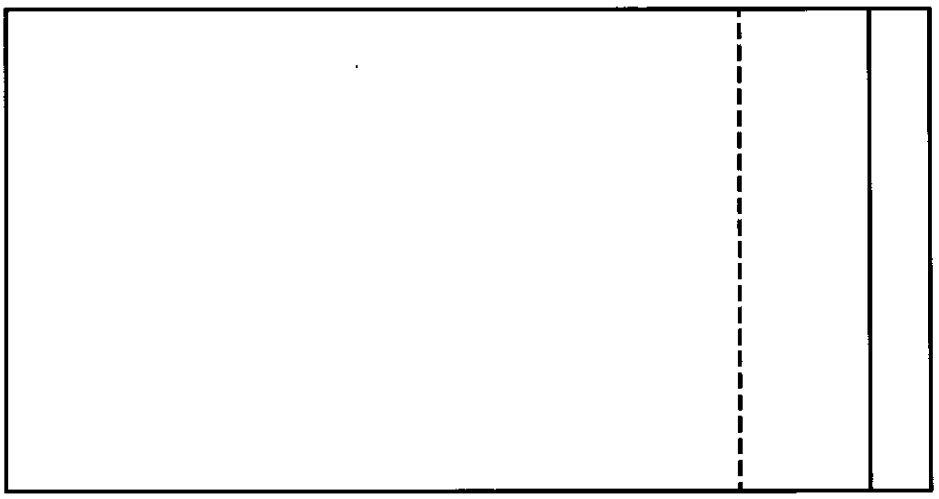
MODEL	TYPE OF COUNTER SUBSTRATE	SINGLE SUBSTRATES	MIN.UNIT SOLD	JP¥
SZ-B707M6N	ALL ITO(10Ω)		100set	100,000
SZ-B707M7N	BARE GLASS			
SZ-B707MBN	B107M6N(10Ω)			

□100 SUBSTRATE

MODEL	TYPE OF COUNTER SUBSTRATE	□100 SUBSTRATE UNIT	MIN.UNIT SOLD	JP¥
IPS-100/B707M6N	ALL ITO(10Ω)		30set	360,000
IPS-100/B707M7N	BARE GLASS			
IPS-100/B707MBN	B107M6N(10Ω)			

WEDGE CELL



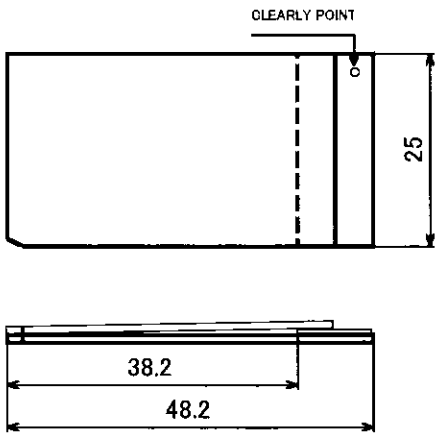
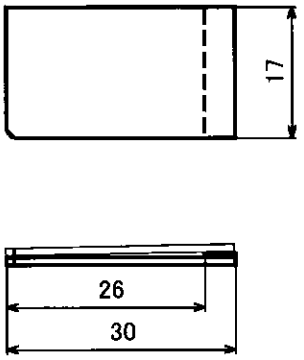


WEDGE CELL

INDICATION : KC RK - 07 X
① ② ③ ④

① 【KC】 MEANS WEDGE CELL

② 【SIZE】

MARK	RK	RS
SIZE		

(NOTE) GLASS MATERIAL IS SODA LIME. THICKNESS IS

③ 【SPACER THICKNESS】

MARK	THICKNESS	CLEARLY POINT
03	0.3mm	BLACK
05	0.5mm	BLUE
07	0.7mm	GREEN
11	1.1mm	RED

④ 【X】 MEANS EXCEPT STANDARD

● DIRECTION FILM

·PROVISION : CONTACT ABOUT COATING & BAKING CONDITION

● RUBBING CONDITION

·CONDITION : ROTATION-SPEED STAGE-SPEED ROUND-TRIP-FREQUENCY

·DIRECTION : ARBITRARY ANGLE

SPECIFICATION

DIRECTION FILM

◆ POLYIMIDE

- LX-1400(HITACHI-KASEI)

◆ FILM METHOD

- SPIN COURT

RUBBING

◆ RUBBING ROLL

- FIBER : POLYESTER
- FIBER LENGTH : 8mm
- ROLL DIAMETER : 58mm

◆ RUBBING CONDITION

- ROTATIONAL SPEED : 600rpm
- STAGE SPEED : 30mm/sec
- ROUND TRIP FREQ. : 3 TIMES

◆ RUBBING DIRECTION

- REFERENCE PAGE 19

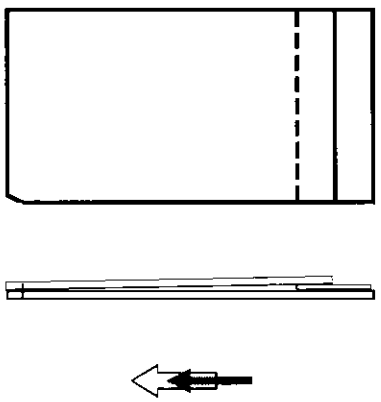
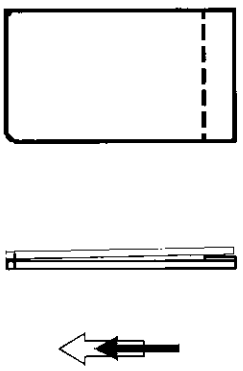
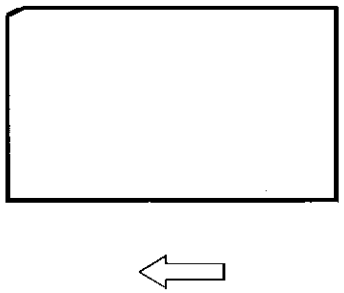
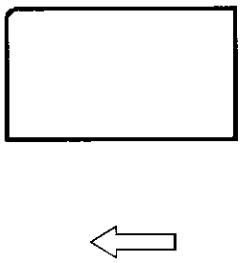
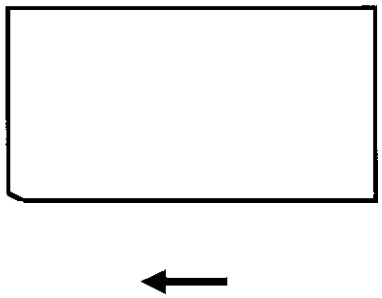
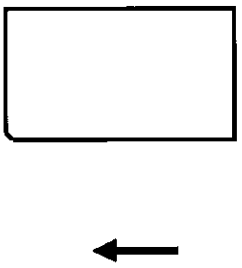
SEAL MATERIAL

◆ UV RESIN (ACRYLIC)

tan θ

SPACER THICKNESS	KCRK	KCRS	ALLOWANCE(%)
0.3mm	0.0079	0.0115	+10
0.5mm	0.0131	0.0192	+8
0.7mm	0.0183	0.0269	+7
1.1mm	0.0288	0.0423	+5

DIRECTION CHART

MARK	RK	RS
UNIT		
UP		
LOW		

PRICE LIST

NAME	MINIMUM(PCS)	UNIT PRICE(JAP.YEN)
KCRK-03	100	300
KCRK-05	100	280
KCRK-07	100	260
KCRK-11	100	240
KCRS-03	100	500
KCRS-05	100	500
KCRS-07	100	500
KCRS-11	100	500

EXCLUDING STANDARD

CONTENT OF CHAGE	UNIT PRICE(JAP.YEN)
DIRECTION MATERIAL	ESTIMATE
RUBBING CONDITION	
DIRECTION ANGLE	
GLASS MATERIAL	