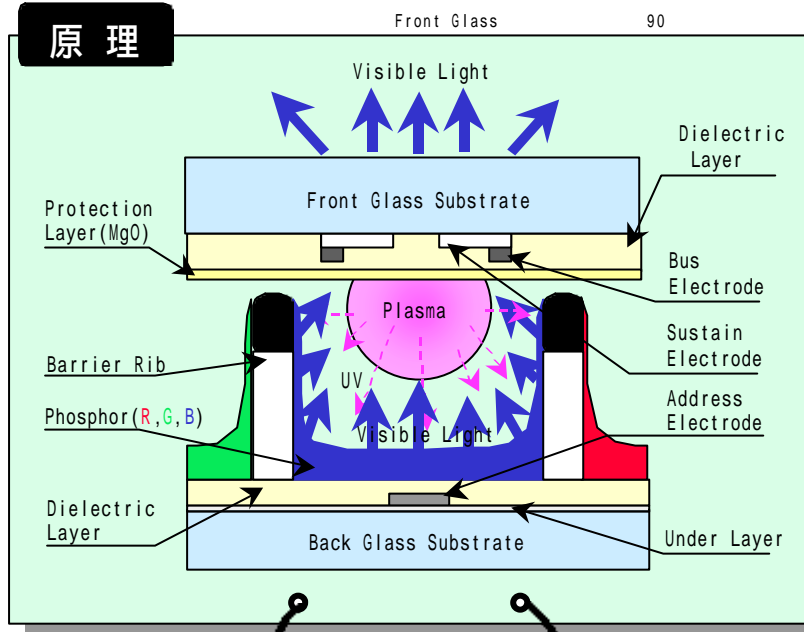


Plasma Display Panel

1. Plasma Display Panel Process

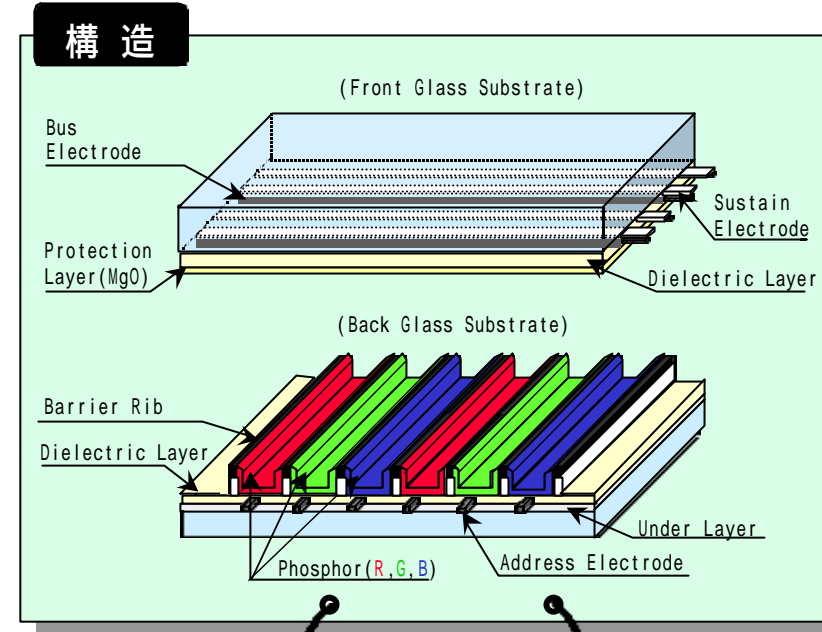
原理



動作

1. Glass Panel $\text{Ne} + \text{Xe} + \text{가}$
2. 가
3. Plasma $(\text{R}, \text{G}, \text{B})\text{가}$ /

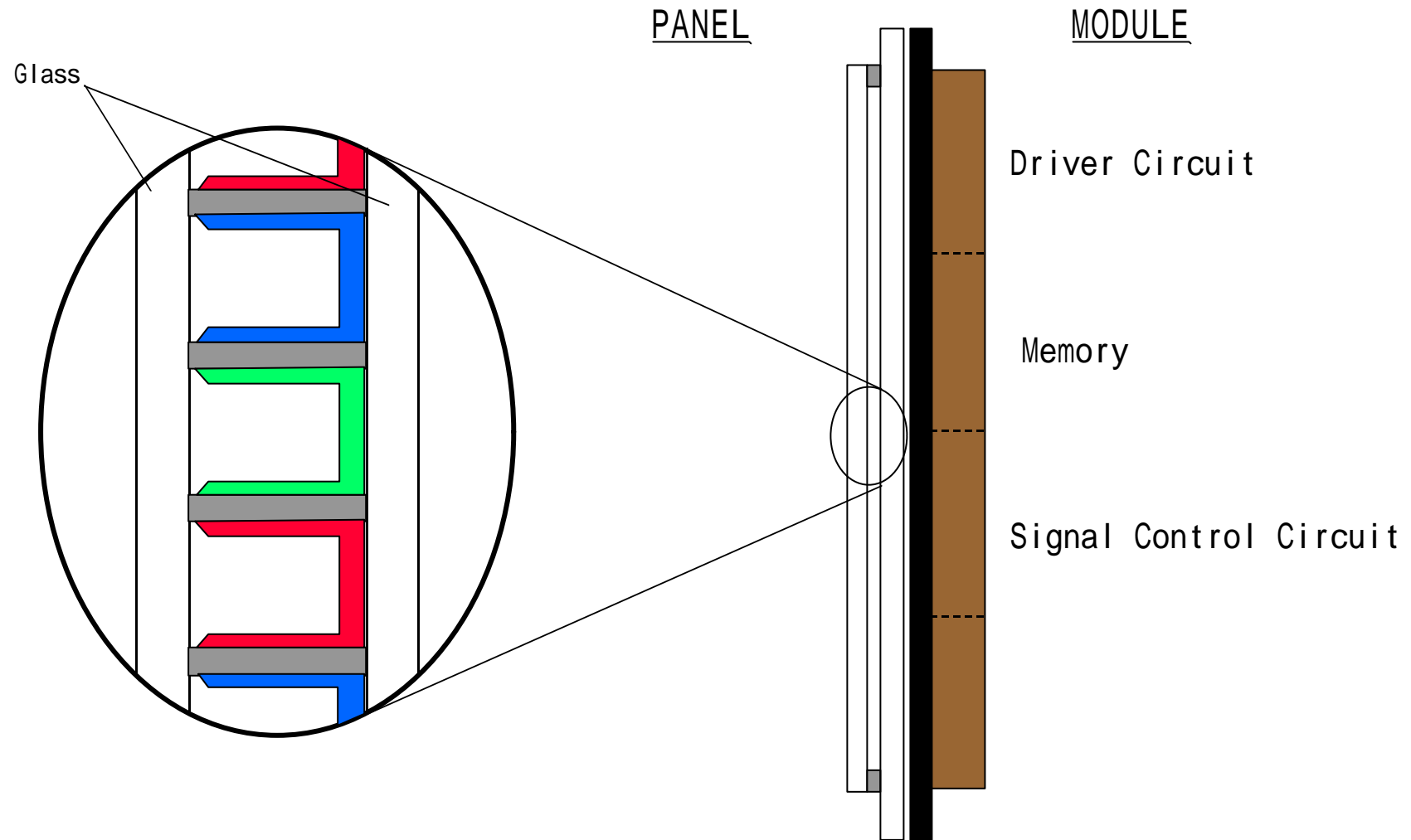
構造



特徴

AC PDP

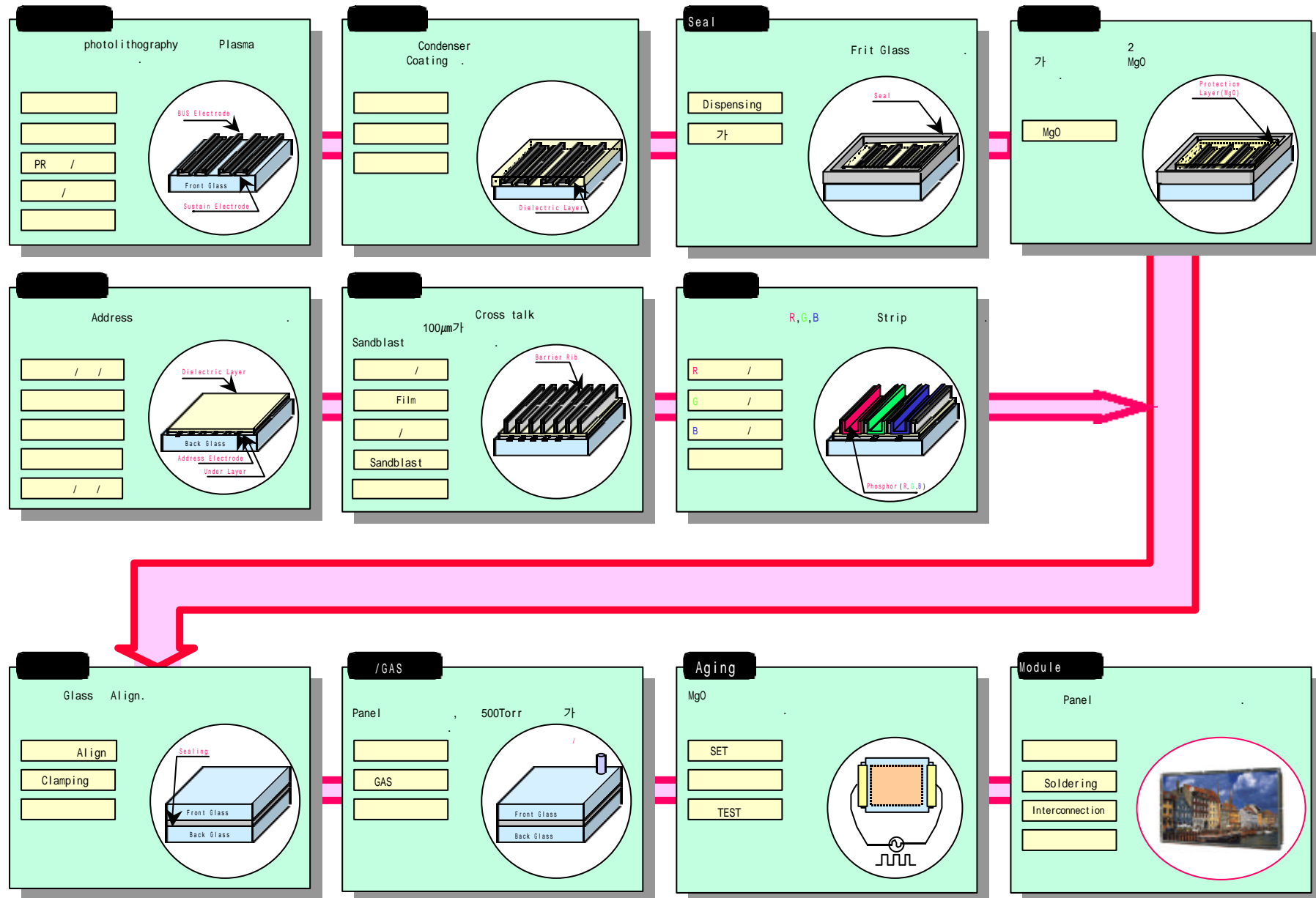
Glass Plasma
Condenser
Glass Address
가 Coating
Align Gas Panel
Module

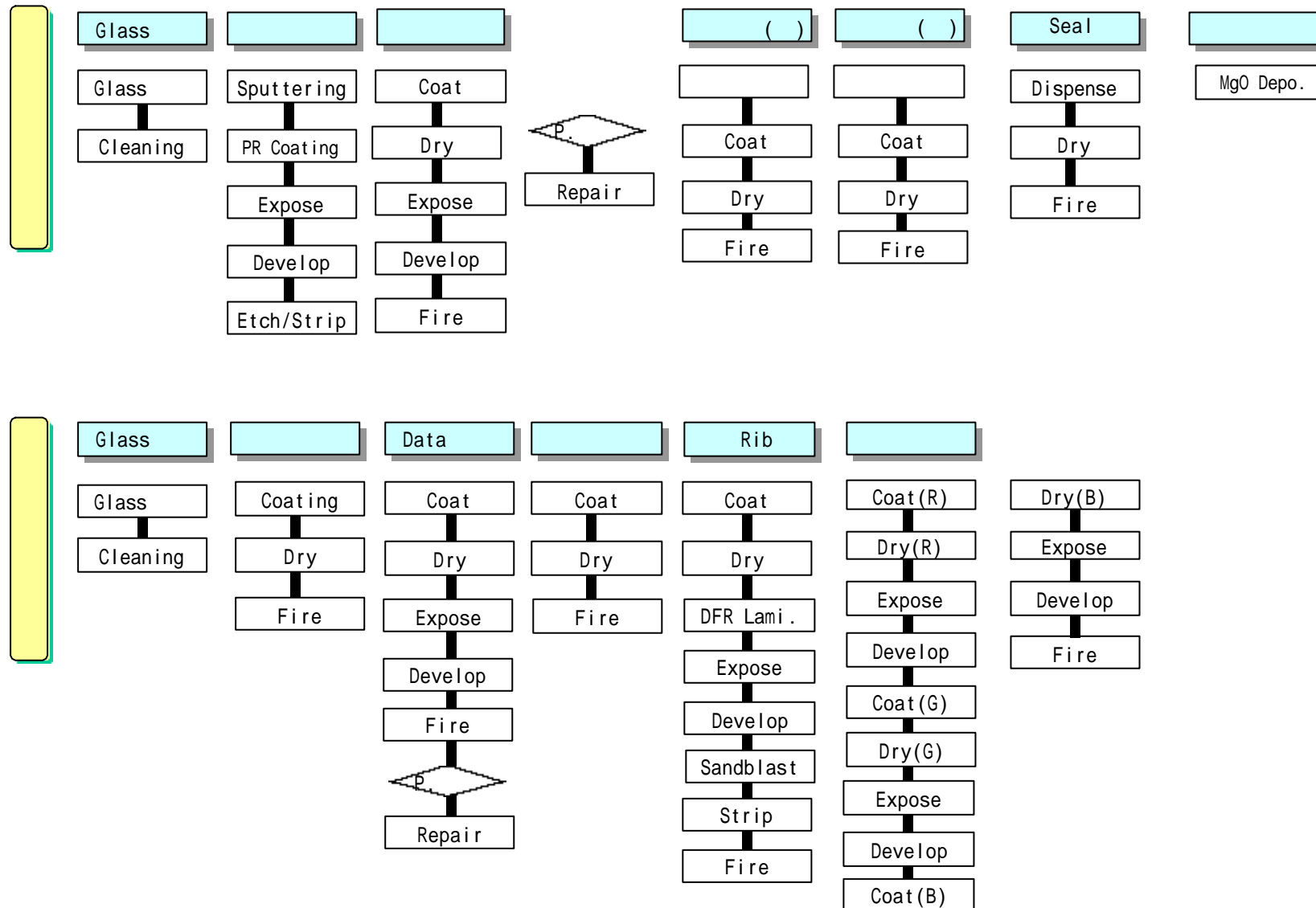


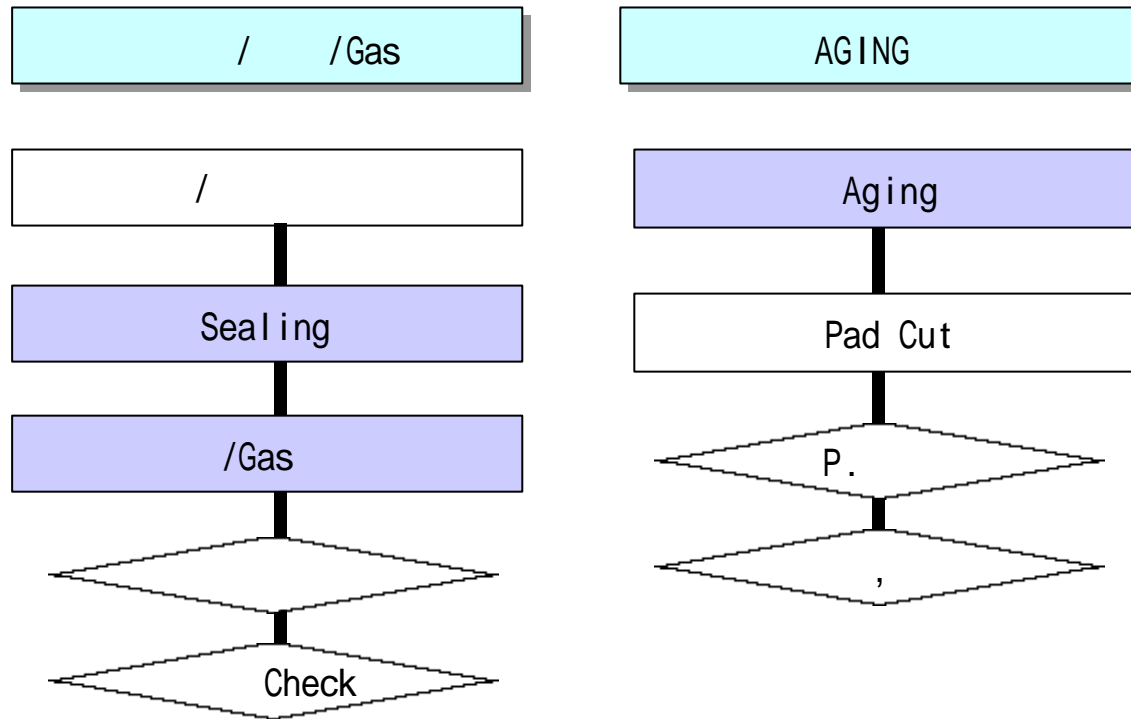
1. Plasma Display Panel

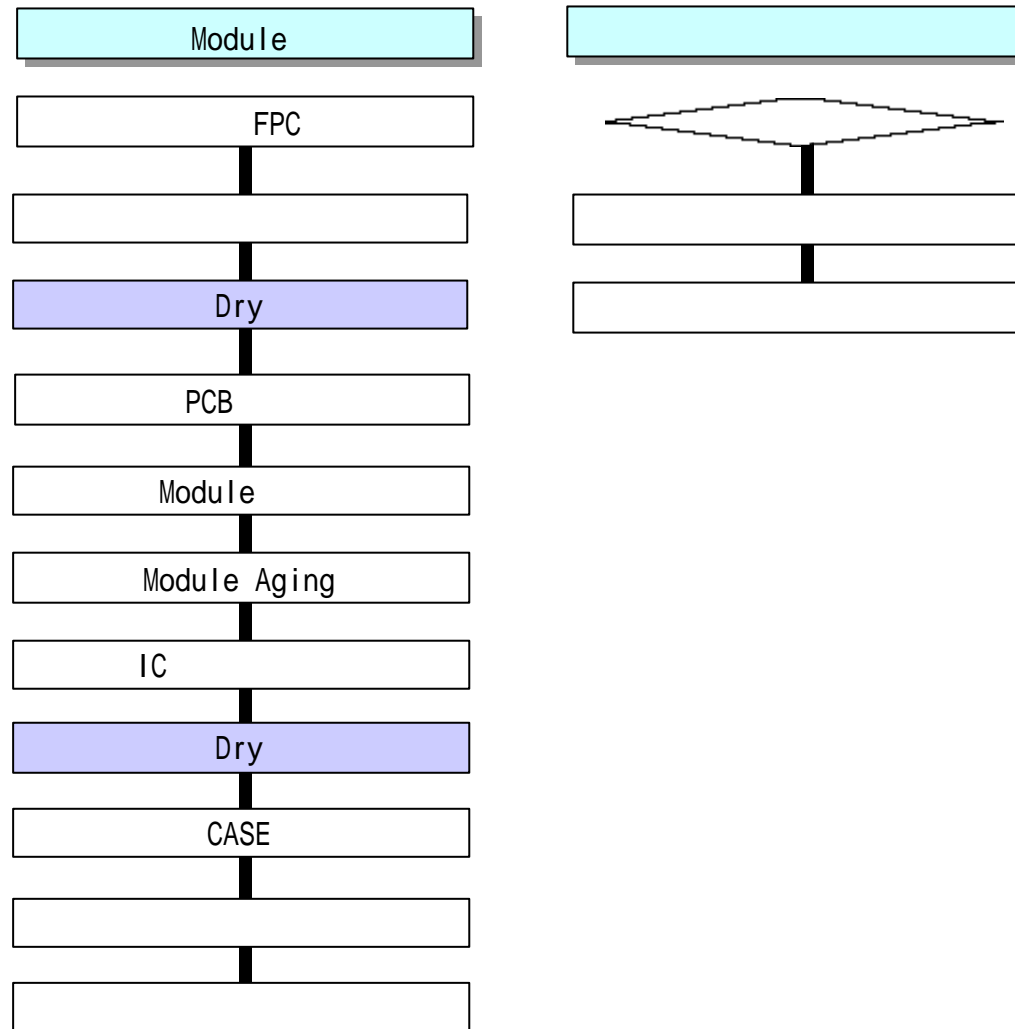
Process

PDP









2-1. Process

AC PDP 가 , Data Writing

Data ()

(Front Plate)

1. (Sustain): AC PDP Cell 가 ,

| (Sustain) | <ul style="list-style-type: none"> • • • • BUS • | <ul style="list-style-type: none"> • ITO(Indium Tin Oxide) <ul style="list-style-type: none"> - Sputter (가) - Ion Plating. - • SnO2(:NESA) <ul style="list-style-type: none"> - (CVD) | <ul style="list-style-type: none"> • ITO(Indium Tin Oxide) <ul style="list-style-type: none"> - Photoetching - Liftoff • SnO2(NESA) <ul style="list-style-type: none"> - Liftoff - Photoetching |
|-----------|---|---|--|

2. BUS : BUS

| BUS | <ul style="list-style-type: none"> • • • Uniformity • • Matching | <ul style="list-style-type: none"> • Cr/Cu/Cr, Cr/Al/Cr <ul style="list-style-type: none"> - Sputter • Paste(Ag) <ul style="list-style-type: none"> - , Coating • Paste(Ag) <ul style="list-style-type: none"> - Pattern | <ul style="list-style-type: none"> • Cr/Cu/Cr, Cr/Al/Cr <ul style="list-style-type: none"> - Photoetching - Liftoff • Paste. <ul style="list-style-type: none"> - Photo . • Paste. <ul style="list-style-type: none"> - Direct Pattern . |
|-----|---|---|--|

(Back Plate)

1. Address (Data) : Data writing.
- BUS

Lift Off

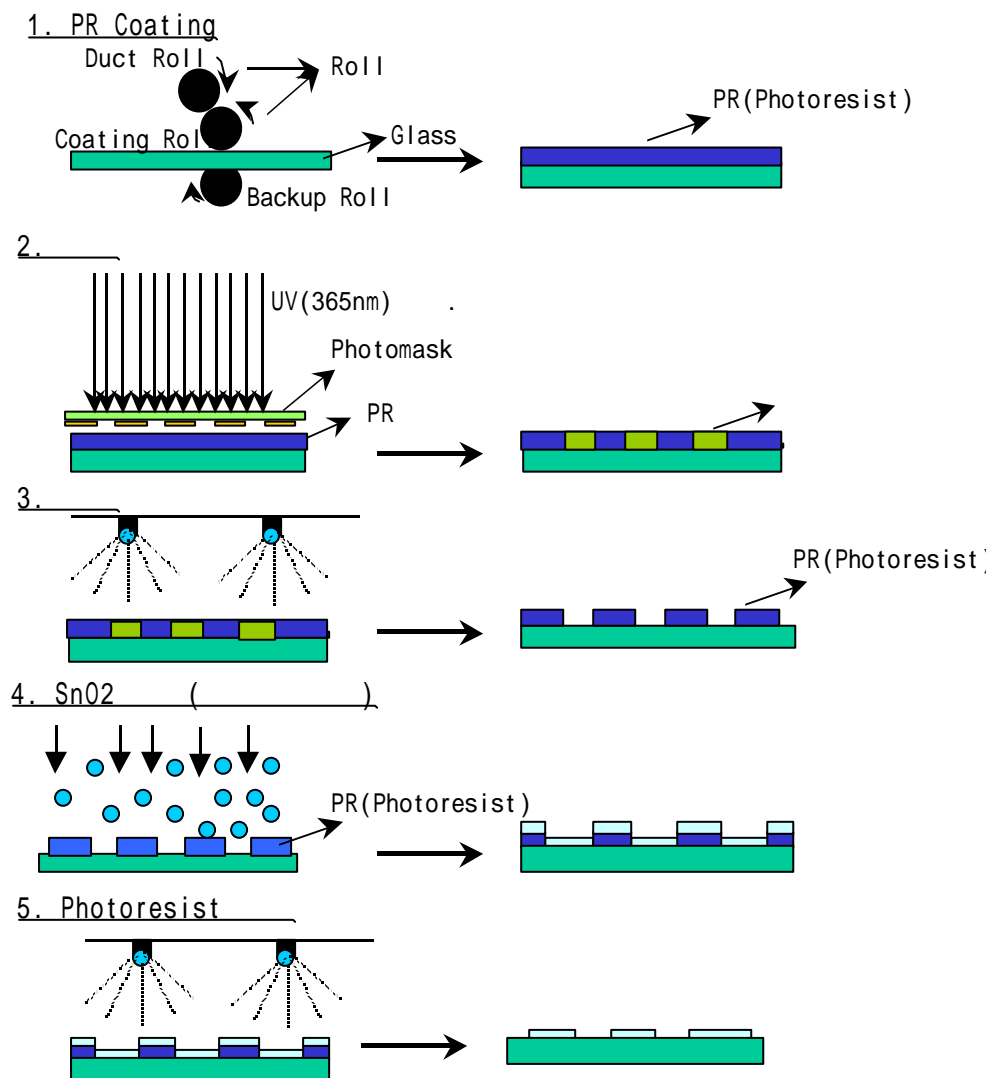


Photo Etching

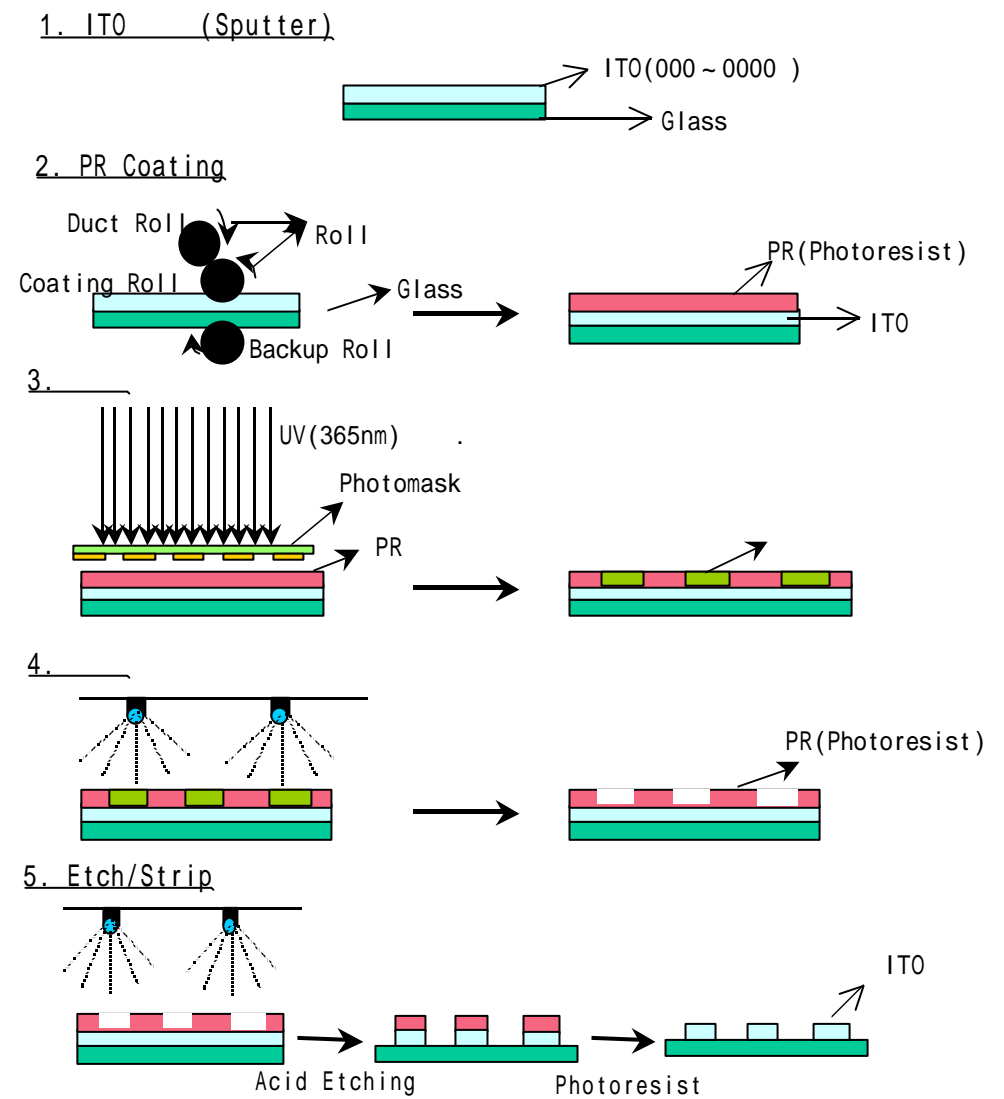
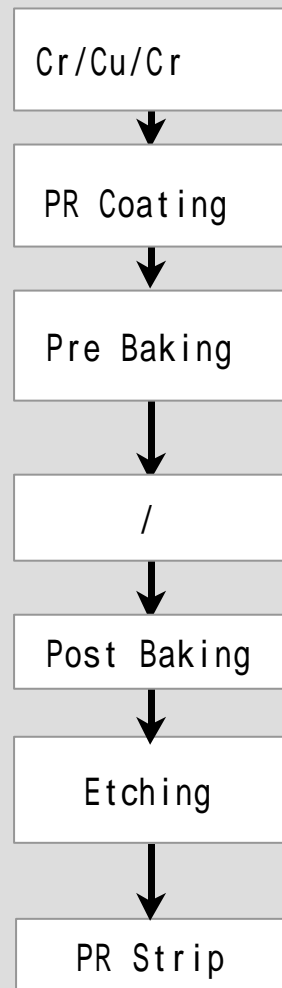
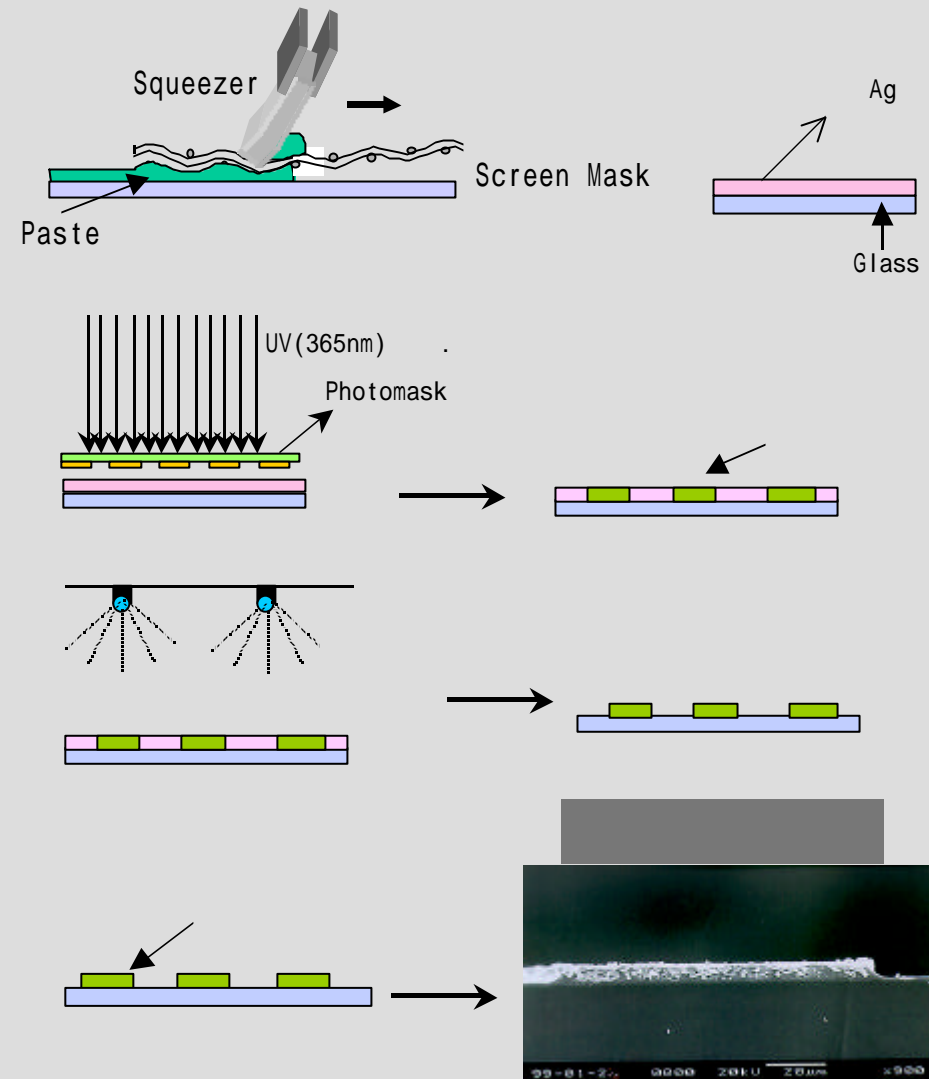


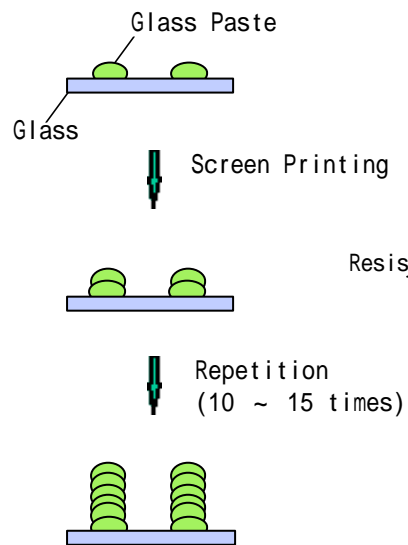
Photo Etching**(UV)PASTE**

, Coating

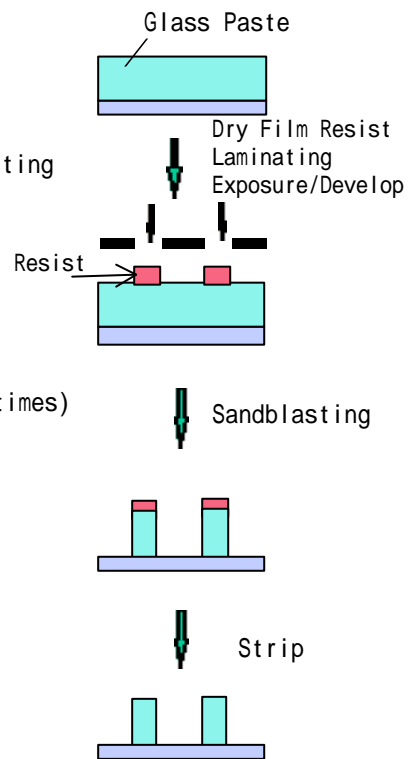


Red, Green, Blue

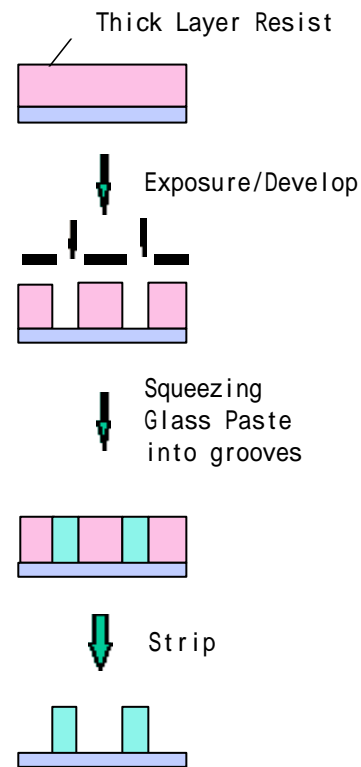
Screen Printing



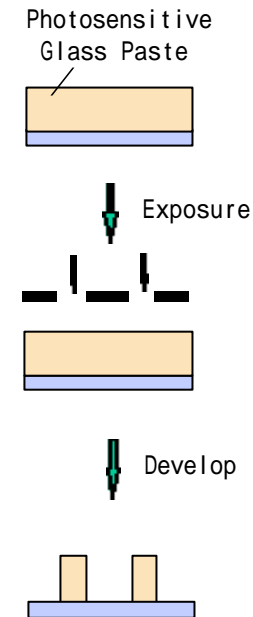
Sandblasting Method



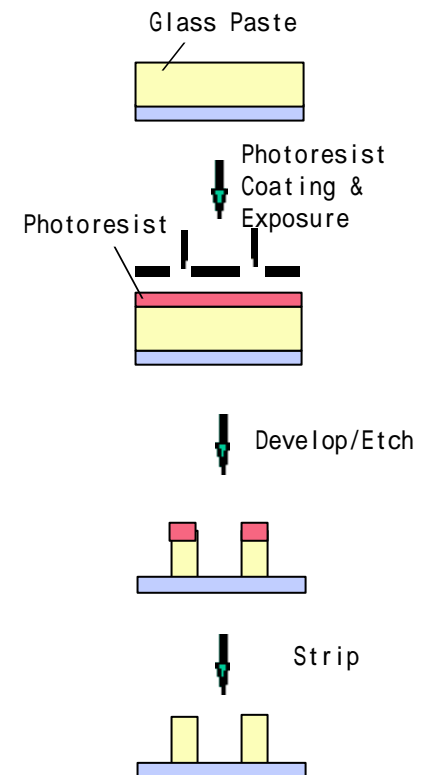
Squeezing Method



Photolithography Method



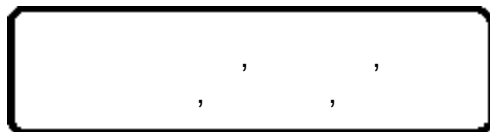
Direct Etching



Process



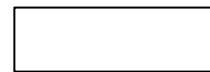
Condenser



| | | |
|-------------|-------------------------------|-----------|
| | | |
| Screen | Glass Paste (* ,) | |
| Dry Film | Glass Green Sheet (,) | Laminator |

* : Matching
: ,

Process Flow



•

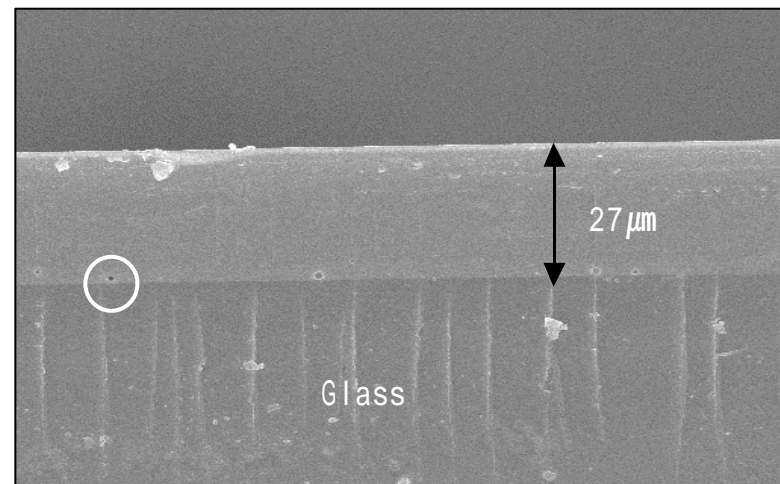
•

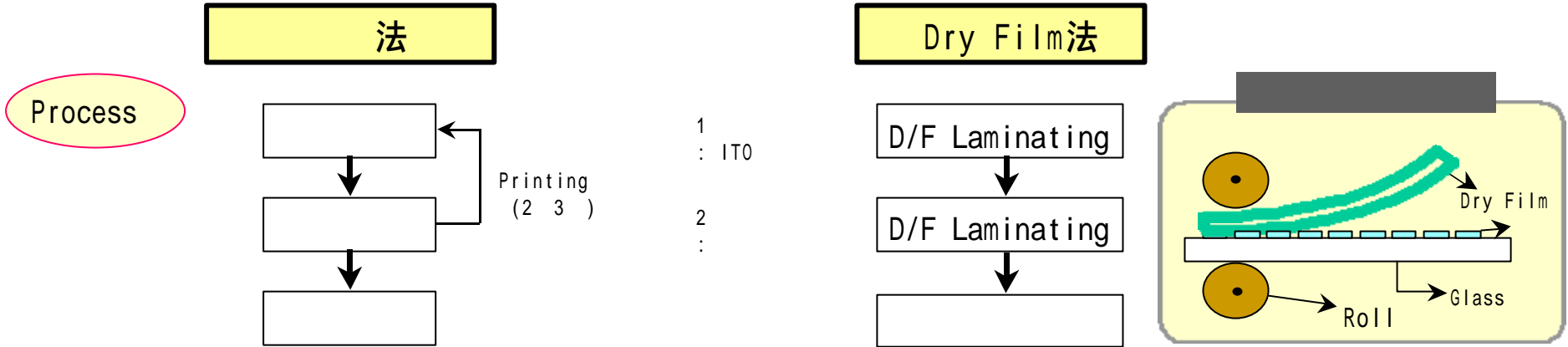
• Binder Burn-Out

•

•

(,)





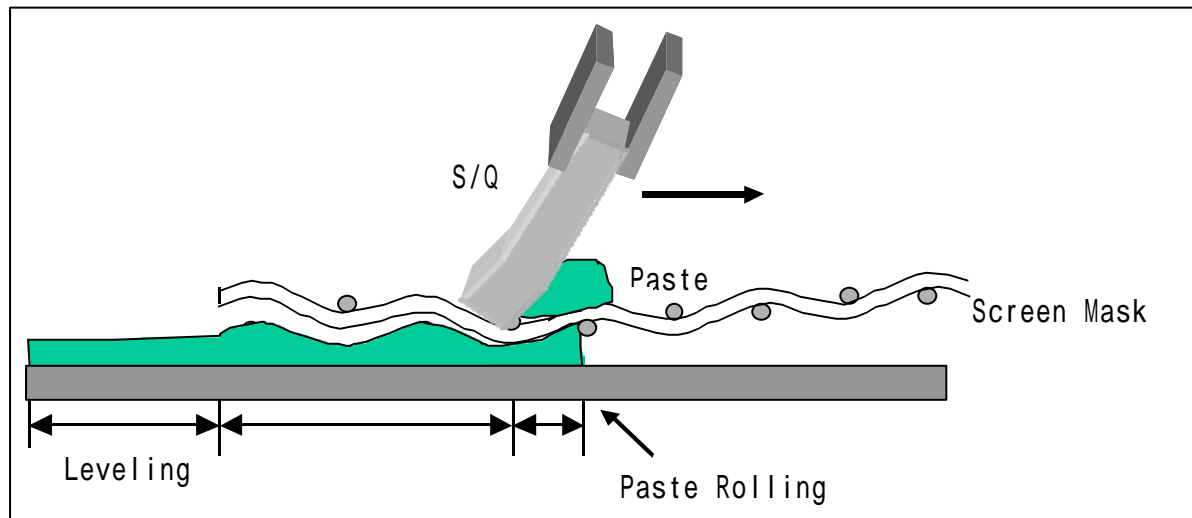
| | | |
|--|---|---|
| | <div><div>• 低 Cost</div><div>• 低</div></div> | <div><div>•</div><div>•</div><div>•</div></div> |
| | <div><div>•</div></div> | <div><div>• Cost가</div></div> |
| | <div><div>•</div><div>•</div><div>•</div></div> | <div><div>• Laminator</div><div>•</div></div> |

1. 印刷 工程 定義

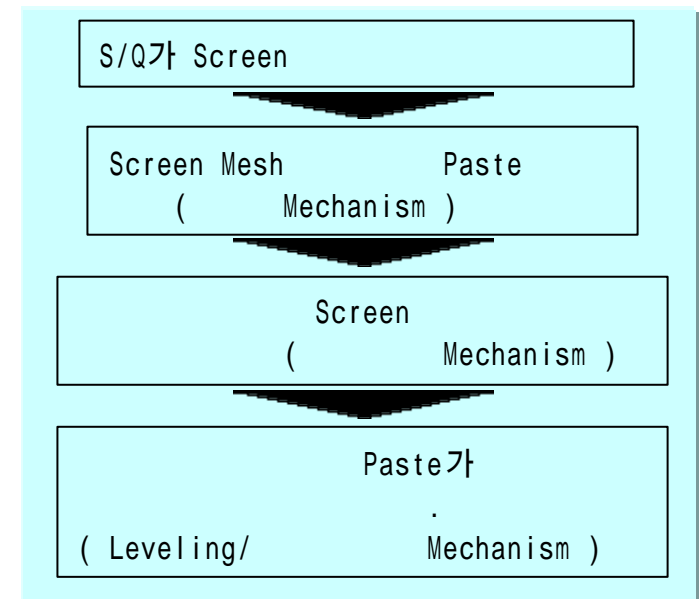
Paste Paste Screen Mask Glass ,Address ,White Back,Rib, Rib, , B/M Screen Mask
가 PDP .

2. 印刷 Mechanism

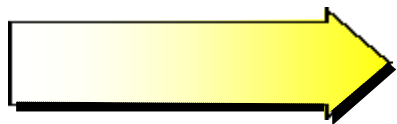
S/Q(Squeezer)가 Paste가
Screen Mask SUS 가 가 .



, Paste, Screen Mask 3가 .



Process



VUV

가

,

| Pattern | * R,G,B Paste | - |
|----------|----------------------|---|
| Paste | R,G,B Ag Paste | |
| Dry Film | R,G,B Green Sheet | |

Process Flow

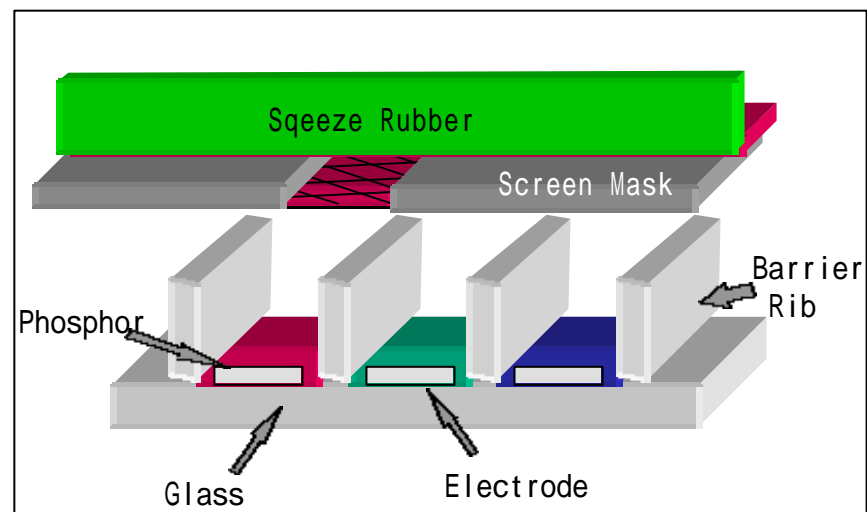
Pattern

R, G, B
3

- Patterning
(/)

- Leveling

- Binder Burn-Out



2-5.

Process

Panel

2

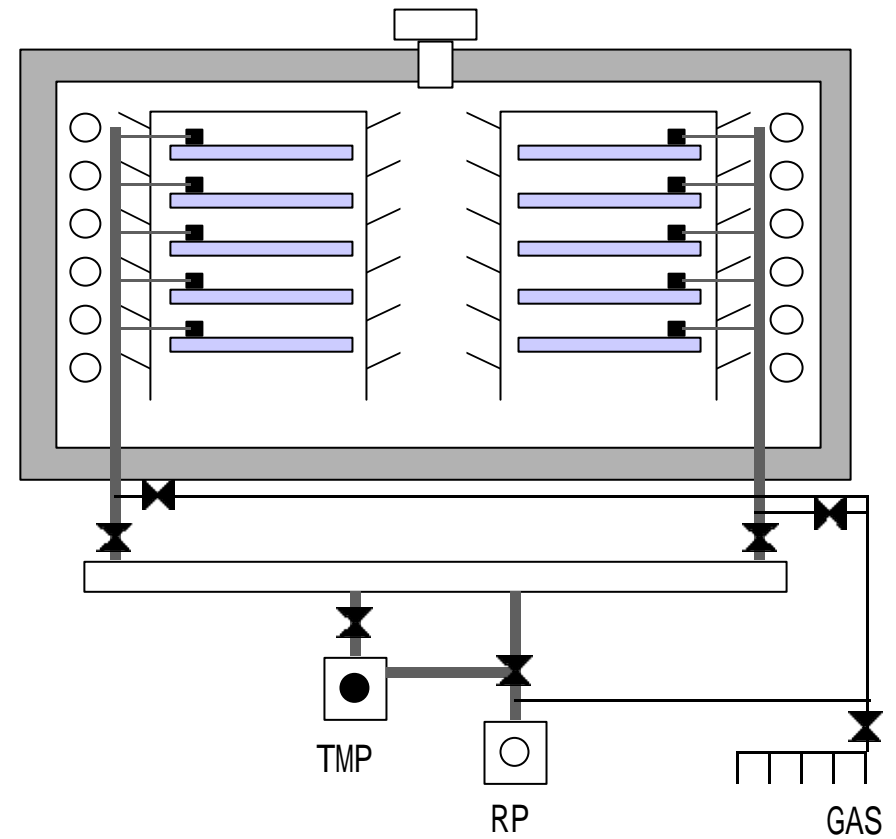
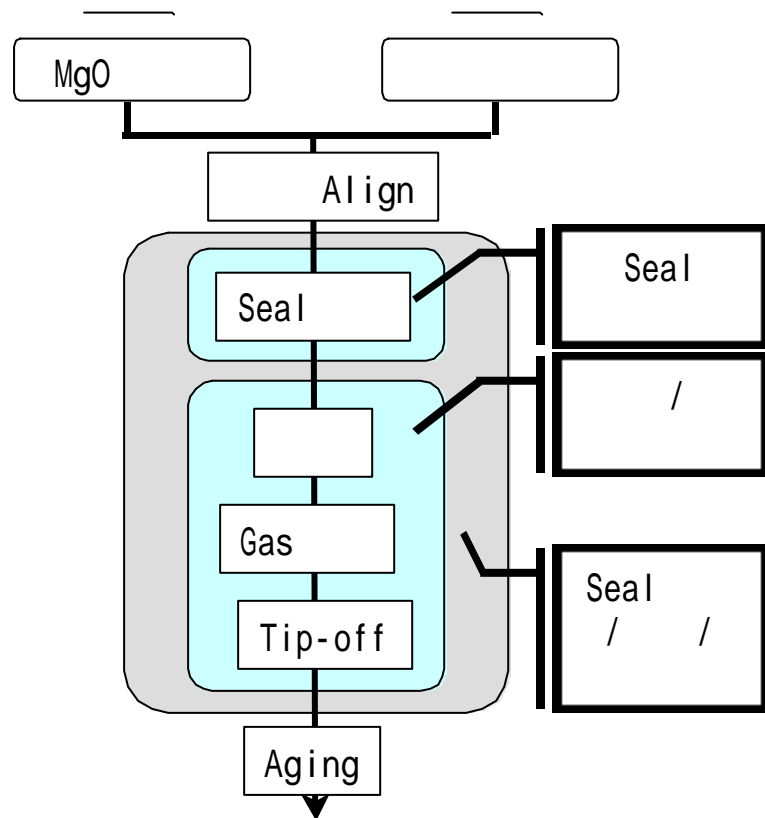
| No. | | Panel |
|-----|-------------|-------------|
| 1 | (Sputter) | (Life time) |
| 2 | 2 | . |
| 3 | 가 | |
| 4 | | 가 . |
| 5 | Sealing / 가 | |

| | | | | Aging |
|--|-------|--|--------------------------------|--------------------|
| | • () | • EB, Sputter, Ion plating, • Power (,), • | • , • (Seal) • Pumping , | • Aging • Aging |
| | • | • (, , ,) | • outgassing • Crack | • Ion • () |

Process / Glass
Seal , /
Heater , Pump Gas

Plasma
Gas
Seal

Process Flow



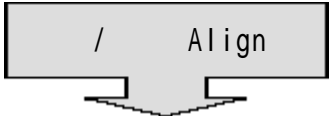
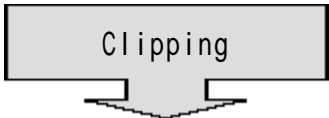
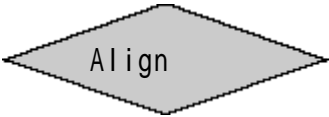
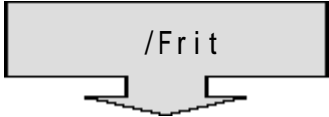
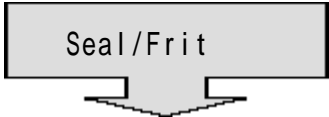
/ Align Key Clipping Align Frit Ring Seal / / .

Gas

Process

Process

/

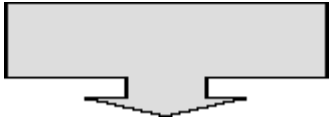
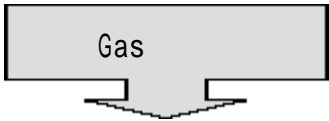
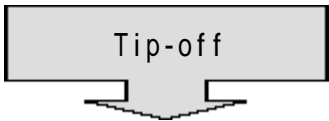
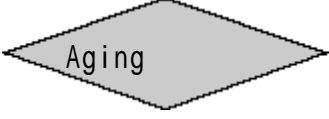
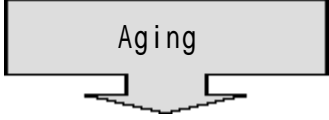
| | | |
|---|--|--|
|  | <ul style="list-style-type: none"> • / Glass Align Key . • / Glass Align Key | <ul style="list-style-type: none"> • |
|  | <ul style="list-style-type: none"> • Align . Clip • Clip => 0.0 ~ 0.0Kgf/cm² | <ul style="list-style-type: none"> • Clip() |
|  | <ul style="list-style-type: none"> • / , / Align • Align => X 000μm, Y 000 μm | <ul style="list-style-type: none"> • |
|  | <ul style="list-style-type: none"> • & Gas • Glass Frit Ring . | <ul style="list-style-type: none"> • • Frit Ring |
|  | <ul style="list-style-type: none"> • Frit Ring Seal • => 000 ~ 000 | <ul style="list-style-type: none"> • Seal |

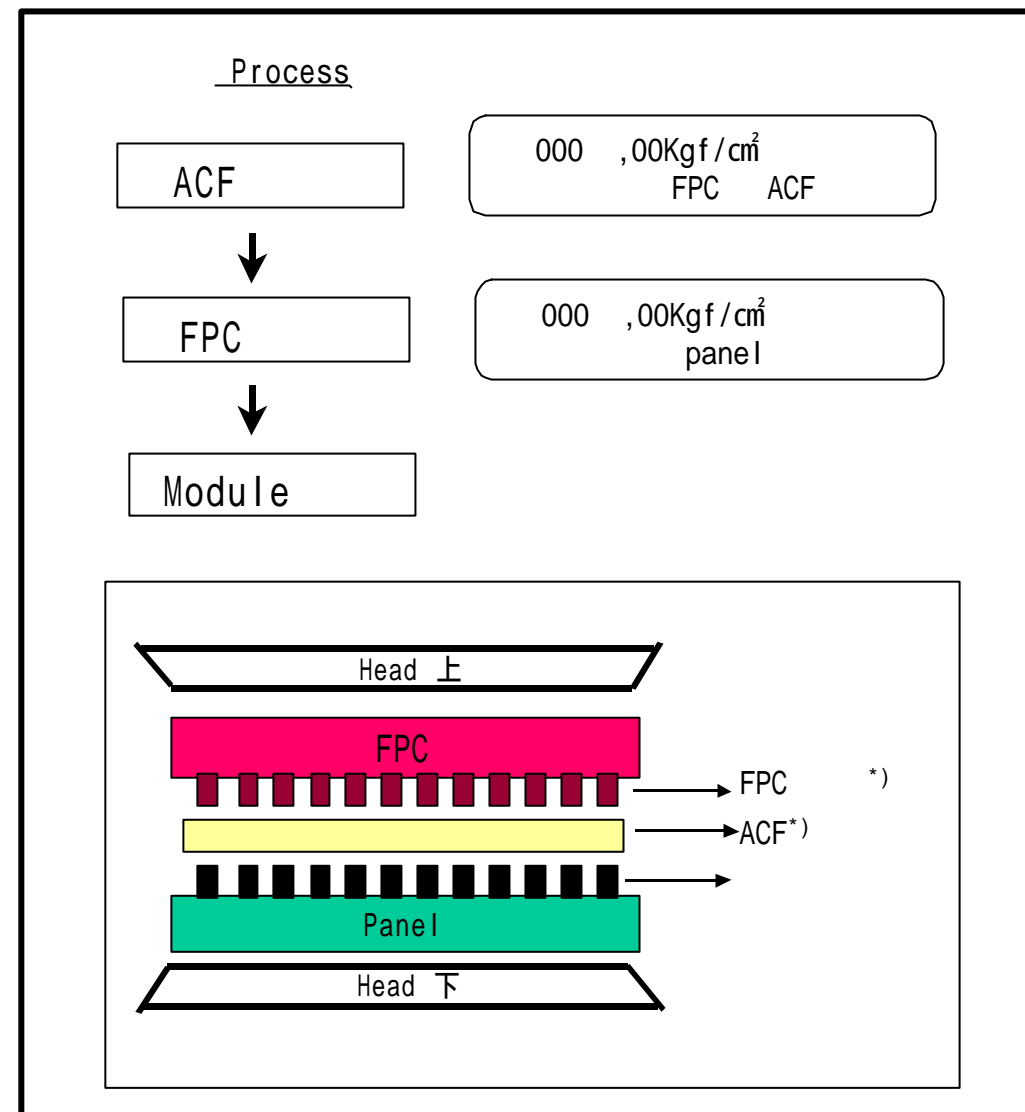
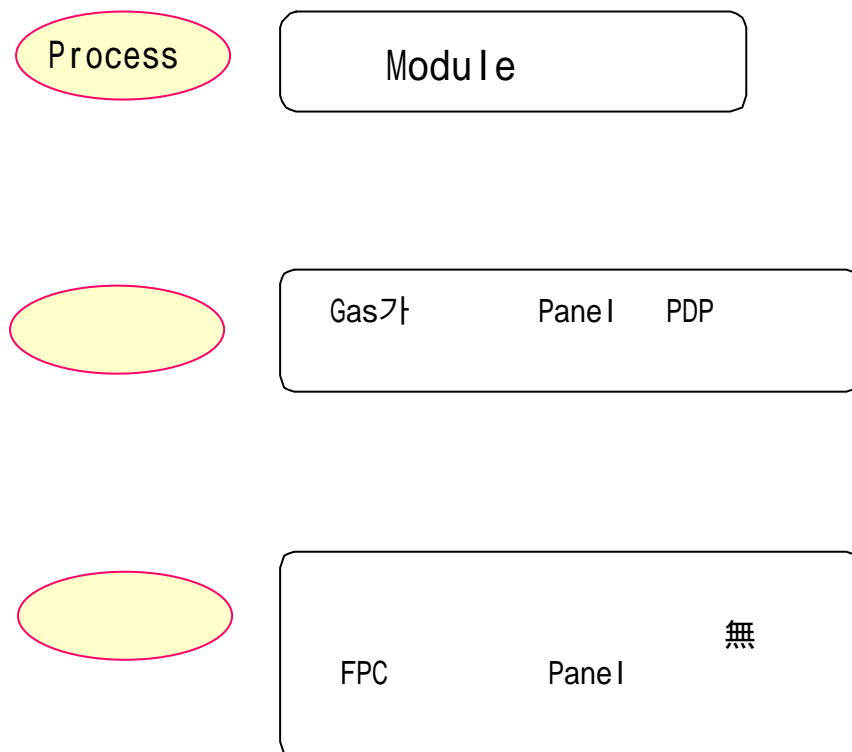
Panel Panel Aging Gas 가 Tip-off

Process

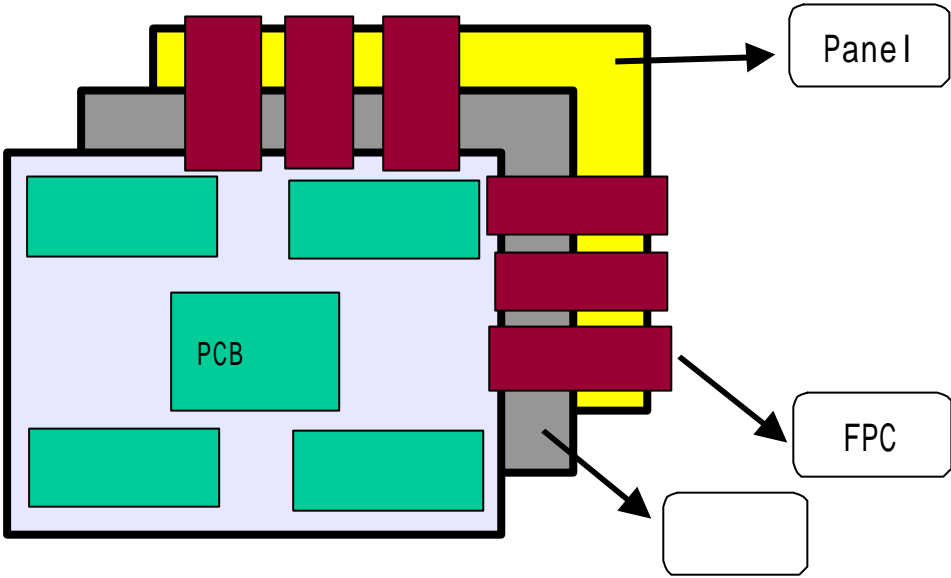
Process

/

| | | |
|---|--|---|
|  | <ul style="list-style-type: none"> Gas Panel * $\Rightarrow \sim 10^7$ Torr | <ul style="list-style-type: none"> / |
|  | <ul style="list-style-type: none"> Gas Panel 가 Gas * \Rightarrow Gas (He, Ne, Xe...), | <ul style="list-style-type: none"> / Gas |
|  | <ul style="list-style-type: none"> Panel Gas | <ul style="list-style-type: none"> Torch |
|  | <ul style="list-style-type: none"> Aging Panel * / \Rightarrow (Open, Short, Cell Defect) | <ul style="list-style-type: none"> Aging Tester |
|  | <ul style="list-style-type: none"> Sustain Pulse 가 Gas Cell * \Rightarrow , , , | <ul style="list-style-type: none"> Aging |



*) ACF : Anisotropic Conducting Film
FPC : Flexible Print Circuit

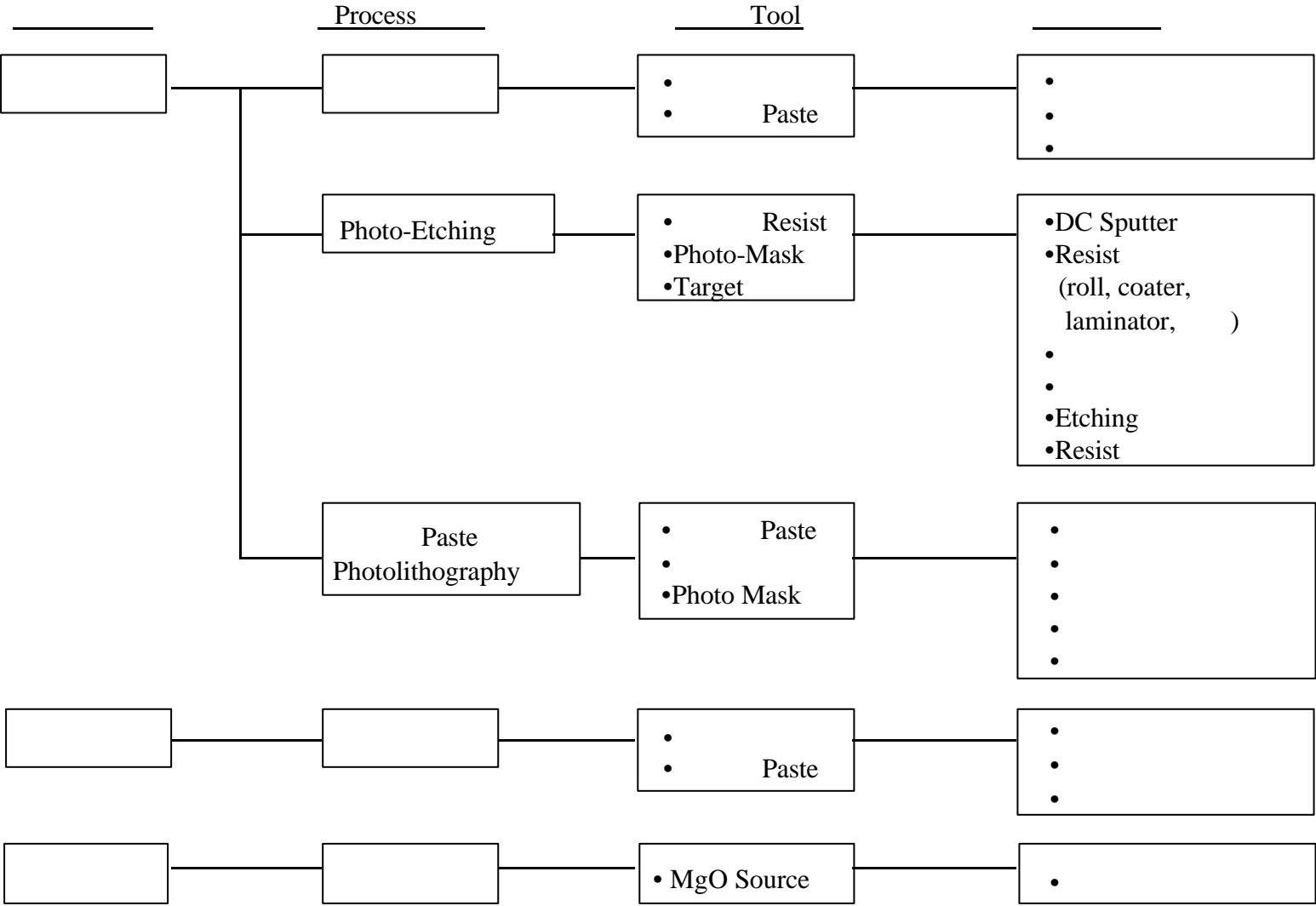


ACF : Anisotropic Conductive Film(Film) Au Coating Ni Ball
Film . 150C 가 FPC Glass .

FPC : Flexible Printed Circuit Polyimide Pattern Film
 Panel .

 Panel .
Aging 가 Panel 가 .

3. PDP



3. PDP

