

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl.⁷
G02F 1/1339

(11)
(43)

10-2004-0059608
2004 07 06

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10-2002-0085286

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2002 12 27

(71)

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20

(72)

43-8

(74)

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(54)

，

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가

，

；

1/100

3

1

2a 2b

3

4a

4b

*

*

40 : 41 :
 42 : 43 :
 44 : 45, 58 :
 50 : 51 :
 52 : 53 :
 54 : 55a :
 55b : 56 :
 57 : 60 :
 61 :

가 가 ,
 LCD(Liquid Crystal Display Device), PDP(Plasma Display Panel), ELD(Electro Luminescent Display), VFD(V
 acuum Fluorescent Display) 가 가 ,

hode Ray Tube) LCD가 가 CRT(Cat

가 가

가 , 가 ,

가

ate) , (bottom plate) , (Top pl

가 ()

characteristic) (color change) (high contrast ratio), (wide viewing angle)
가 .

, TN (twisted nematic mode) , 가

.

, (ball spacer) (spacer) (column spacer)가

.

(ball spacer) (plastic ball) (spacer)
가 (,)
(column spacer)

,

,

,

1 , 2a 2b

.

가 1 2a (10) , (10,20) (30) , , (10,20)
(20) , , (20) (31)

, (20)(TFT) , (() , (21)
) , (21)

, (TFT)(22)가 .

11) , (10)() , (25) ((

가 (14) R,G,B (12) , (12) (13) ,

1 (10) (20) (20) , (20) (25) (20)

(10) (25) (11) .

2a (10,20)
(31)가 , (31) (10)

.

(31)

가 ,

(31) 2b (20) (32)

.

15 24 , 23 .

, (31) (32)가

.

.

8.32×10^{-4} ,

1.80×10^{-6} .

$1/500 \sim 1/1000$.

2b , 가 , 가 2a
(31) (32) 가 .

, 가 10~100 가 ,

.

가 가 , 가
가 .

,

.

; 가

; ,
1/100 ; ,

Novolac .

,

(TFT)가 ,

.

,

.

1 , 3
, 4a, 4b .

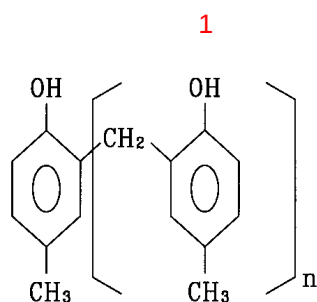
(40) (50) , 1 3
(40,50) (60) , (40,50)
(40) (61) .

41) , (40)() , (59) ((42) , (42)
(43) , (43) R,G,B 가 (44) .

(43) .

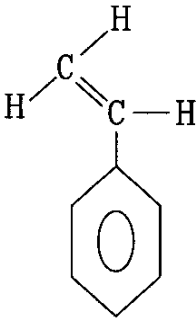
(50)(TFT) , (

(59) (56) , (56) (57) . (TFT)(51) , (56) (50) (52) , (50) (53) , (52) (53) (55a) , (55b) . (52) (52) (57) (54) , BCB(Benzo Cyclo Butene), , (40) (44) (50) (57) (polyimide) , PVCN (polyvinylcinna mate based material) (polysiloxane based material) . (61) (50) (40) (dotting) IPS . (61) 1/100 가 (61) 가 , 1/100 가) 가 (가



1 n 5 6 .

2



1/100 가 4a 4b 1, 2

1 Novolac , 2 Styrene .

(Dropping)

(TFT) () 가 (TFT)

(dotting)

IPS

(Seal Dispensing) (Loading)

가 .

(LC Dispensing) (Active Array)

Ag) (Dot) Ag (

IPS(In Plane Switching)

, S/B(Scribe/Break) , S/B 가 (Pen) Brea
(wheel) (Scribe) 가

k) () .
 be) , (Grinding) , A/P(Auto/Pro

가

가 .

1/100

(57)

1.

가

1/100

2.

1

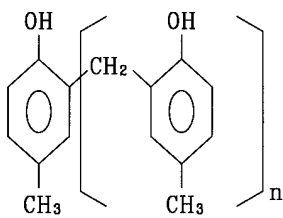
Novolac

Styrene

3.

2

Novolac



1

4.

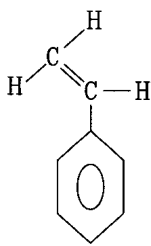
3

1 n 5 6

5.

2

Styrene



2

6.

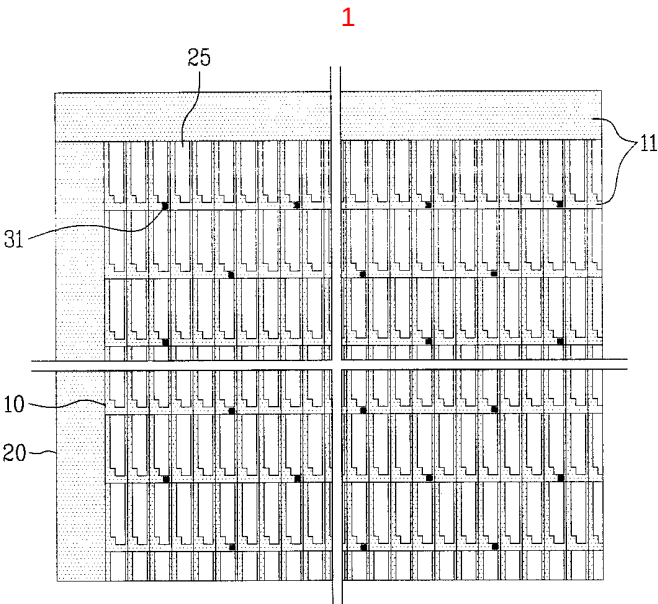
1

(TFT)

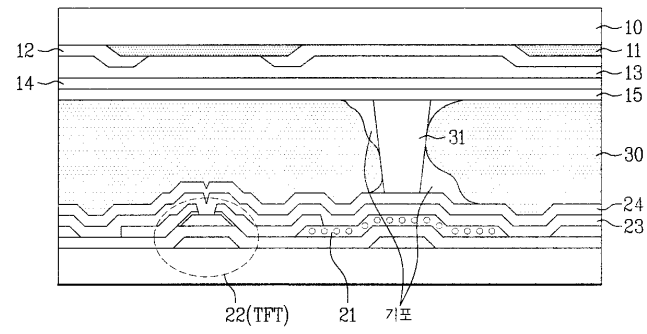
7.

1

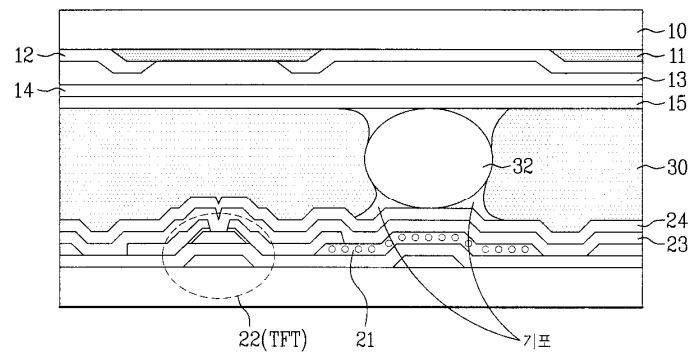
6



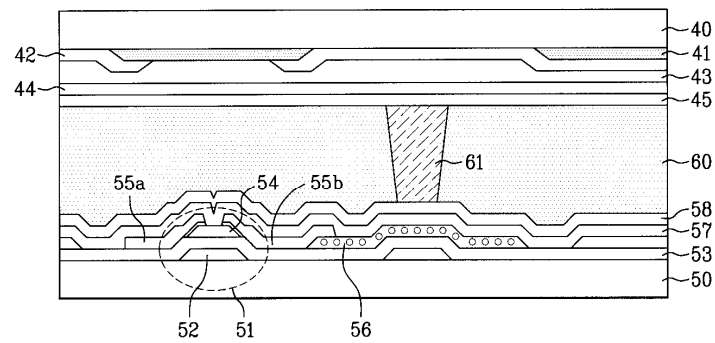
2a



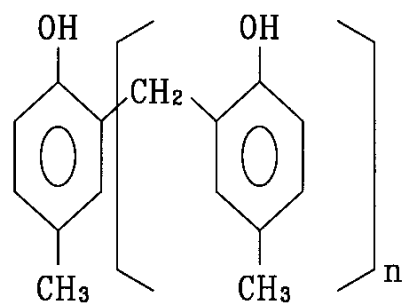
2b



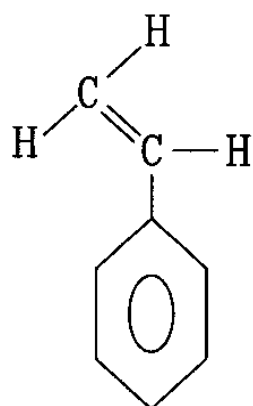
3



4a



4b



专利名称(译)	液晶显示元件		
公开(公告)号	KR1020040059608A	公开(公告)日	2004-07-06
申请号	KR1020020085286	申请日	2002-12-27
[标]申请(专利权)人(译)	乐金显示有限公司		
申请(专利权)人(译)	LG显示器有限公司		
当前申请(专利权)人(译)	LG显示器有限公司		
[标]发明人	LEE YUNBOK		
发明人	LEE,YUNBOK		
IPC分类号	G02F1/1339		
代理人(译)	金勇 新昌		
其他公开文献	KR100889540B1		
外部链接	Espacenet		

摘要(译)

本发明提供一种适用于防止发生低温气泡现象的液晶显示装置，该液晶显示装置具有上基板，在该上基板上形成有滤色层。其上形成有薄膜晶体管的下基板；在上下基板之间填充有液晶的液晶层；并且，多个柱状衬垫料形成在上基板上，并由体积膨胀系数为液晶体积膨胀系数的1/100倍或更小的材料形成。3 指数方面 间隔

