MATEVISION.,CO.LTD.

SPECIFICATION

LCD Module

Customer Product number: —

Product number: L5S30348P01

Customer Approved	
DATE :	
By	
Presented by Development & Design DPT.	QA DPT.
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	Date	Revision Number
Issued Date	May.07, 2007	00
Revised Date		

EPSON IMAGING DEVICES CORPORATION

REVISION HISTORY

Product Number	Rev.	Revised item	Date
L5S30348P01	00	Initial issue	May. 07, 2007

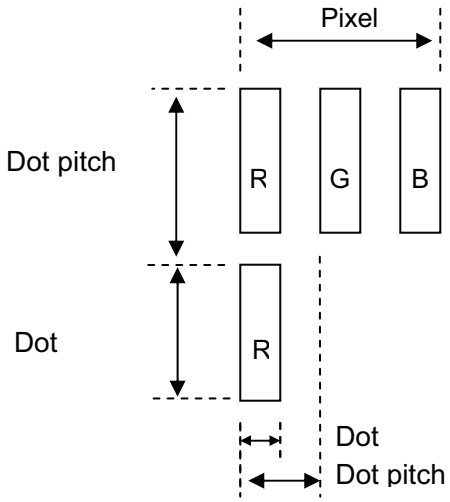
QA STD Number	

1. BASIC SPECIFICATIONS

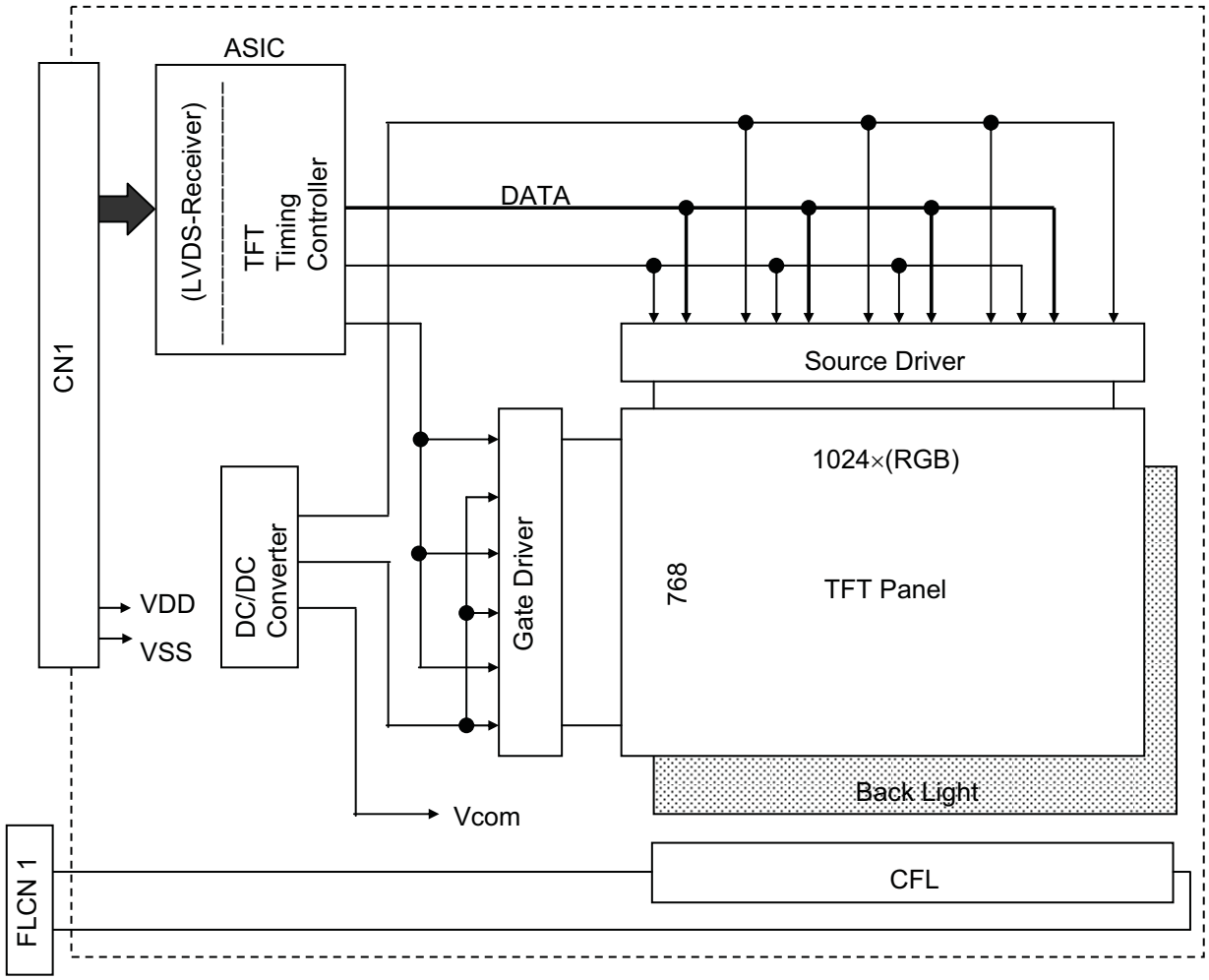
1.1 STRUCTURES

No.	PARAMETER	SPECIFICATIONS	UNIT
1	LCD structure	TFT LCD	-
2	Outward	284.0(W) x 215.6(H) x 6.8 Max. (T)	mm
3	Weight	465 Typ.	g
4	Active area [Screen dimension]	270.336(W) x 202.752(H) [13.3 inch]	mm
5	Bezel opening area	273.6(W) x 206.0(H)	mm
6	Number of dots	1024 x R·G·B(W) x 768(H)	-
7	Dot pitch	0.088(W) x 0.264(H)	mm
8	Dot layout	Vertical stripe	-
9	Viewing direction	6 o'clock	-
10	Liquid crystal mode	TN, Normally white, Transmissive type	-
11	Polarization plate	Non-glare	-

*1) See attached drawing for details.



1.2 BLOCK DIAGRAM



NOTE 1) This model is not equipped with an inverter circuit.

1.3 I/O PINS

LCM : CN1

PIN NO.	SYMBOL	FUNCTION	I/O	REMARKS
1	VDD	Power Supply (3.3V +/- 0.3V)	P	
2	VDD	Power Supply (3.3V +/- 0.3V)	P	
3	VSS	Ground	P	
4	VSS	Ground	P	
5	Rin0-	LVDS Differential data input (-)	I	
6	Rin0+	LVDS Differential data input (+)	I	
7	VSS	Ground	P	
8	Rin1-	LVDS Differential data input (-)	I	
9	Rin1+	LVDS Differential data input (+)	I	
10	VSS	Ground	P	
11	Rin2-	LVDS Differential data input (-)	I	
12	Rin2+	LVDS Differential data input (+)	I	
13	VSS	Ground	P	
14	RCLK-	LVDS Differential Clock input (-)	I	
15	RCLK+	LVDS Differential Clock input (+)	I	
16	VSS	Ground	P	
17	NC	No Connection（Should be opened during operation）	-	
18	NC	No Connection（Should be opened during operation）	-	
19	VSS	Ground	P	
20	VSS	Ground	P	

CN1: DF19KR-20P-1H (HIROSE)

Suitable mating connector : DF19G-20S-1C (HIROSE) Wire type

: DF19G-20S-1F (HIROSE) FPC type

I/O : Input / Output terminal, I : Input terminal, O : Output terminal, P : Power line terminal

NOTE 1) Internal termination resistors of LVDS input lines are 100 ohms.

NOTE 2) Valid synchronous signals are DCLK and DE. HSYNC and VSYNC are not used.

Backlight : FLCN1

PIN NO.	SYMBOL	FUNCTION	I/O	REMARKS
1	H.V	High voltage for CFL	P	
2	LGND	Low voltage for CFL	P	

FLCN1 : BHSR-02VS-1 (JST)

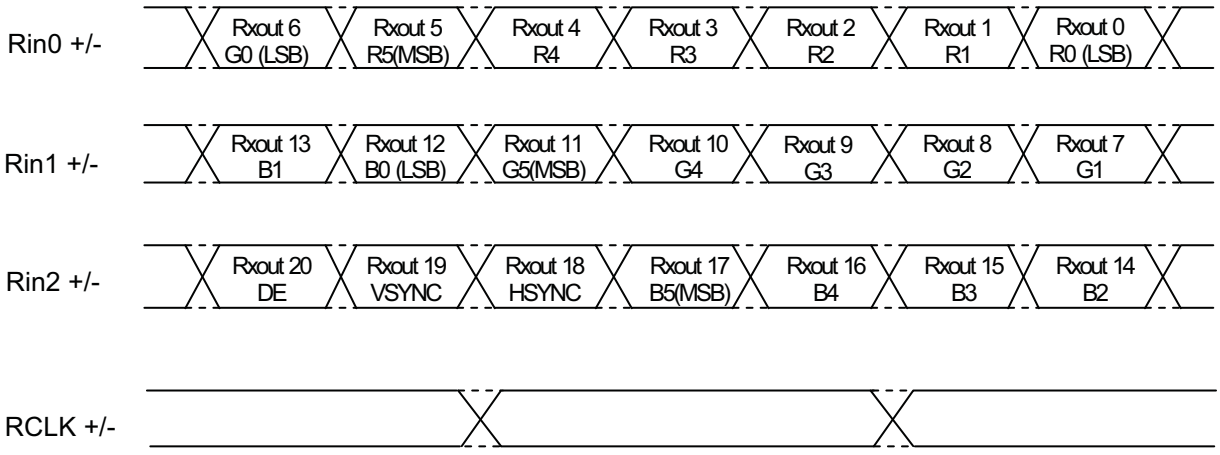
Suitable mating connector: SM02B–BHSS-1-TB (JST)

NOTE 1) I/O : Input / Output terminal, I : Input terminal, O : Output terminal, P : Power line terminal

2. FUNCTIONS

2.1 OVERVIEW

2.1.1 Interface (LVDS) data assignment



2.1.2 Internal signals

SYMBOL	FUNCTION
DCLK	Data Clock
HSYNC	Horizontal Sync. (This signal is invalid.)
VSYNC	Vertical Sync. (This signal is invalid.)
DE	Data Enable (positive)
R0	Red Data (LSB)
R1	Red Data
R2	Red Data
R3	Red Data
R4	Red Data
R5	Red Data (MSB)
G0	Green Data(LSB)
G1	Green Data
G2	Green Data
G3	Green Data
G4	Green Data
G5	Green Data(MSB)
B0	Blue Data (LSB)
B1	Blue Data
B2	Blue Data
B3	Blue Data
B4	Blue Data
B5	Blue Data (MSB)

NOTE 1) “DE mode “ only.
The valid synchronous signals are DCLK and DE. HSYNC and VSYNC are invalid.

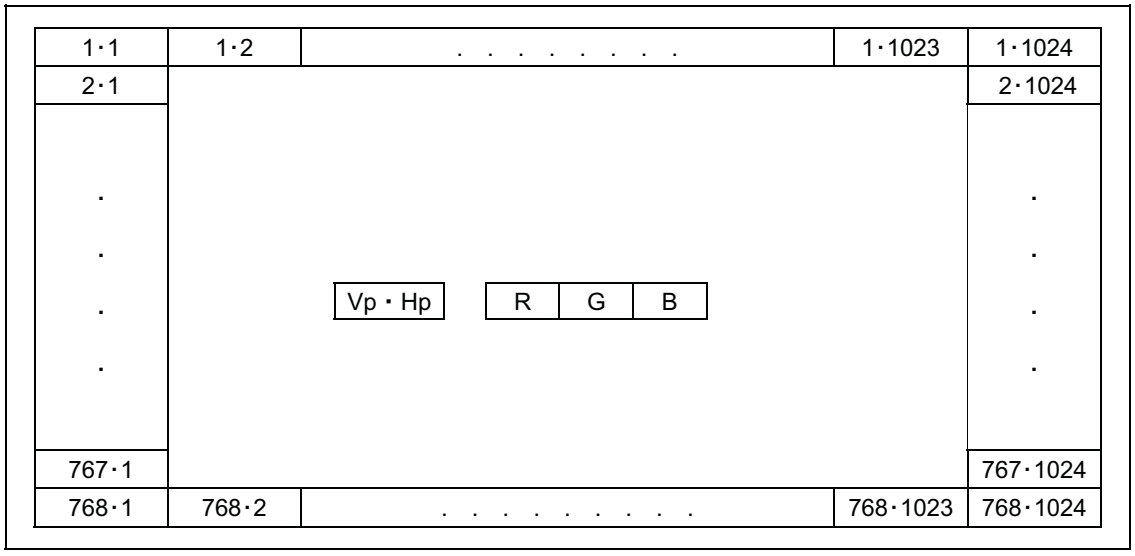
NOTE 2) INTERNAL SIGNALS are loaded from LVDS - Receiver to TFT Timing controller with LVDS sequence. (See BLOCK DIAGRAM.)

2.1.3 Data and Color arrangement

DISPLAY COLOR \ INPUT DATA		RED DATA						GREEN DATA						BLUE DATA					
		MSB					LSB	MSB					LSB	MSB					LSB
		R5	R4	R3	R2	R1	R0	G5	G4	G3	G2	G1	G0	B5	B4	B3	B2	B1	B0
BASIC COLOR	BLACK	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	RED	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L
	GREEN	L	L	L	L	L	L	H	H	H	H	H	H	L	L	L	L	L	L
	BLUE	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H
	CYAN	L	L	L	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H
	MAGENTA	H	H	H	H	H	H	L	L	L	L	L	L	H	H	H	H	H	H
	YELLOW	H	H	H	H	H	H	H	H	H	H	H	H	L	L	L	L	L	L
	WHITE	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
RED	BLACK	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	RED(1)	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L
	RED(2)	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L
	:	:						:						:					
	:	:						:						:					
	RED(61)	H	H	H	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L
	RED(62)	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
	RED(63)	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L
GREEN	BLACK	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	GREEN(1)	L	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L
	GREEN(2)	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L
	:	:						:						:					
	:	:						:						:					
	GREEN(61)	L	L	L	L	L	L	H	H	H	H	L	H	L	L	L	L	L	L
	GREEN(62)	L	L	L	L	L	L	H	H	H	H	H	L	L	L	L	L	L	L
	GREEN(63)	L	L	L	L	L	L	H	H	H	H	H	H	L	L	L	L	L	L
BLUE	BLACK	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	BLUE(1)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H
	BLUE(2)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L
	:	:						:						:					
	:	:						:						:					
	BLUE(61)	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	L	H
	BLUE(62)	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	L
	BLUE(63)	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H

NOTE 1) Chromaticity (n) --- "n" indicates grayscale's number.

2.1.4 Data and Display Position



3. ABSOLUTE MAXIMUM RATINGS

3.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS

Ta= 25 deg C

PARAMETER	SYMBOL	RATINGS	UNIT	REMARKS
Power supply voltage	VDD-VSS	4.0	V	
LVDS Input voltage	VIN	VSS – 0.3 ～ VDD + 0.3	V	NOTE 1)
CFL current	IL	7.0	mA	
CFL supply voltage	VHV	2000	Vrms	
	VLGND	100	Vrms	

NOTE 1) VIN: Rin0-/+, Rin1-/+, Rin2-/+, RCLK-/+

3.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS

Ta= 25 deg C

PARAMETER	SYMBOL	CONDITIONS	RATINGS		UNIT	REMARKS
			MIN	MAX		
Ambient temperature	TST	Storage	-20	60	deg.C	NOTE 1)
	TOP	Operation	0	50		
Humidity	-	Ta=40 deg C max.	-	85	%RH	No condensation NOTE 2)
Vibration	-	Storage	-	1.5	G	NOTE 3)
Shock	-	Storage	-	50	G	XYZ 6ms / direction

NOTE 1) Care should be taken so that the LCD module may not be subjected to the temperature beyond this specification

NOTE 2) Ta> 40 deg. C : Absolute humidity must be less than 85% RH/40 deg.C

NOTE 3) 10-200Hz, 30min/cycle, X/Y/Z each one cycle and except for resonant frequency.

4. ELECTRICAL SPECIFICATIONS

4.1 ELECTRICAL CHARACTERISTICS

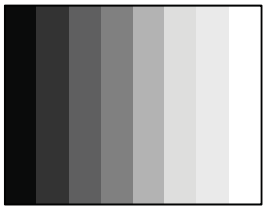
V_{DD} =3.3V , f_{CLK} = 65MHz, f_H = 48.4kHz, f_V = 60Hz, Ta = 25 deg C

PARAMETER	SYMBOL	CONDITIONS	RATINGS			Unit	REMARKS
			MIN	TYP	MAX		
Power supply voltage	VDD-VSS		3.0	3.3	3.6	V	Terminal Post
LVDS input Threshold voltage	VTH	High level	-	-	+100	mV	V_{CM}=1.25V NOTE 2)
	VTL	Low level	-100	-	-		
Common mode voltage of LVDS input	V_{CM}		1.125	1.25	1.375	V	
Power supply current	IDD	NOTE 1)	-	250	-	mA	

NOTE 1) Display pattern of Typ. value is 64 grayscales.

NOTE 2) V_{CM} : Common mode voltage of LVDS input.

< 64 grayscales >



4.2 BACKLIGHT CHARACTERISTICS

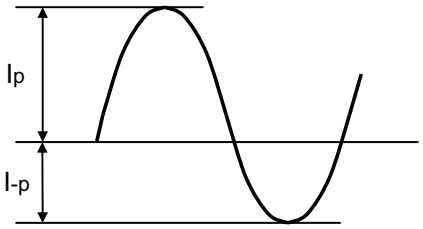
Ta= 25 deg.C

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT	REMARKS
CFL voltage	V_L		-	630	-	Vrms	at I_L=6.0mArms
CFL current	I_L		3.0	-	6.5	mArms	
Driving frequency	f_L		40	-	65	kHz	
Discharge starting voltage	V_S		-	-	1350	Vrms	at Ta=0 degC
CFL lifetime	t_{OL}		20000	-	-	Hours	at I_L=6.0 mArms continuous operating NOTE 5)

NOTE 1) There may be a display flickering by interaction of the backlight driving conditions (especially for the Inverter frequency f_L) and the module's horizontal frequency f_H. Therefore, sufficient confirmation should be made when using inverter.

NOTE 2) The open circuit voltage of the Inverter should be designed higher than the discharge starting voltage recorded in this table, and also should be applied more than 1 second. If not applied as mentioned above, the backlight may not start properly.

NOTE 3) Asymmetrical waveform will cause a degradation of lifetime by unevenness of mercury. Therefore, the current waveform should have an unbalancing-ratio of less than 10%, and an amplitude-ratio of less than $\sqrt{2}$ ±10%. The current waveform should be measured by actual final product.



Current Waveform

Unbalance rate = | I_p - I_{-p} | / I_L x 100 (%)
Wave-height rate = I_p (or I_{-p}) / I_L

I_p :High peak
I_{-p} :Low peak
I_L :RMS

NOTE 4) Be sure to use a Ground Referenced type for the Inverter. Don't use a Ground Floating type.

NOTE 5) The value that corresponds to the items written below is the definition of CFL life (when the CFL is lit at Ta= 25°C, IL= 6.0mA):

1) when the brightness of the CFL falls to 50% or less of its initial value,

2) when the lighting start voltage does not fulfill the value written above

NOTE 6) The regulation of the CFL life is when the direction of the CFL tube axis (longer length of the LCD module) is installed horizontally in the module. The life of the CFL may shorten when the LCD module is used vertically due to mercury migration within the CFL tube.

NOTE 7) The CFL life will differ depending on the environmental temperature the LCD module is used in. If the CFL is used in a cold/ hot environment for a long period of time, the brightness will decrease drastically which may lead to a shorter CFL life.

4.3 TIMINGS

4.3.1 Interface (LVDS) signal timing parameteres

V_{DD} = 3.3V , f_{CLK} = 65MHz , Ta = 25 deg.C

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Data setup time	tsu	t_{CLK}=15.4ns	420	-	-	ps
Data hold time	thd		420	-	-	ps

The timing waveform in Figure 1 indicates the ideal strobe point of the LVDS input data:

$\frac{n \cdot t_{CLK}}{14}$ n : odd number

t_{CLK} : LVDS input clock period

The data setup time is "tsu" and the data hold time is "thd".

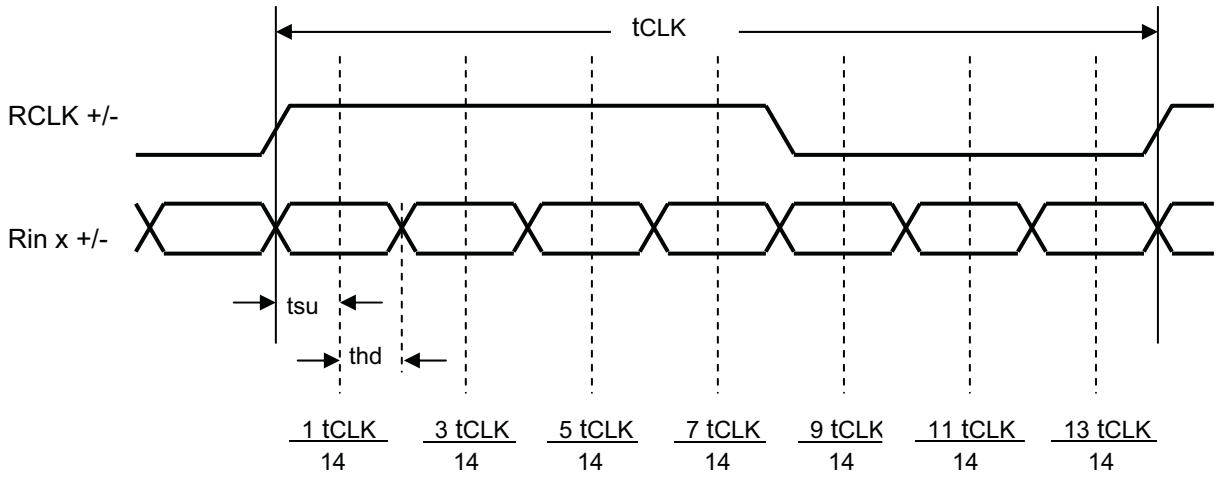


Figure 1. LVDS data-input-timing waveform diagram

4.3.2 Jitter tolerance

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Simple cycle jitter	tcj1	-	-	300	ps
Clock-period change rate	tcj2	-	-	25	ps / cycle

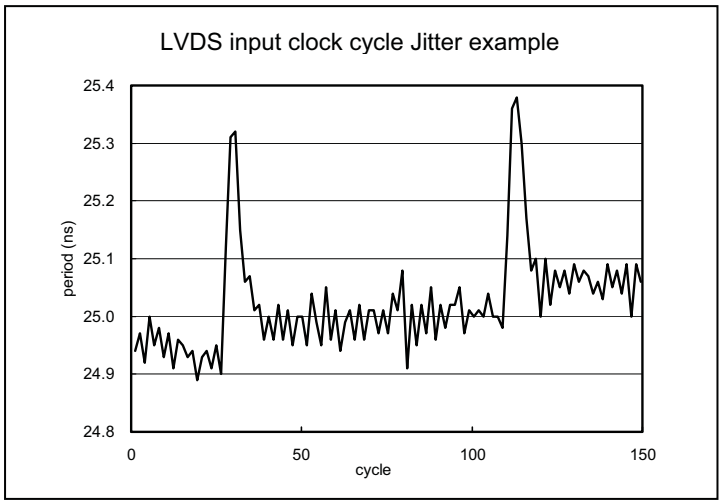


Figure 2 Example of impermissible cycle jitter

Assuming that the period of a given clock cycle "n" is represented by "tCLK", for example, the period of cycle "n + 1" may be tolerated up to **tCLK ± 300 [ps].** However, if period fluctuations continue, the limit to that change rate, rather than this tolerable range, constitutes the "clock-period change rate."

For 28 to 32 cycles in Figure 2, the lowest clock period during this interval is 24.9 [ns], and the highest clock period is 25.3 [ns].

25.3 - 24.9 = 0.4 [ns]

0.4 / 5 (cycles) = 0.08 [ns]

Because a period fluctuation of 80 [ps] per cycle exists here, the rated "clock-period change rate" in the above table is not achieved.

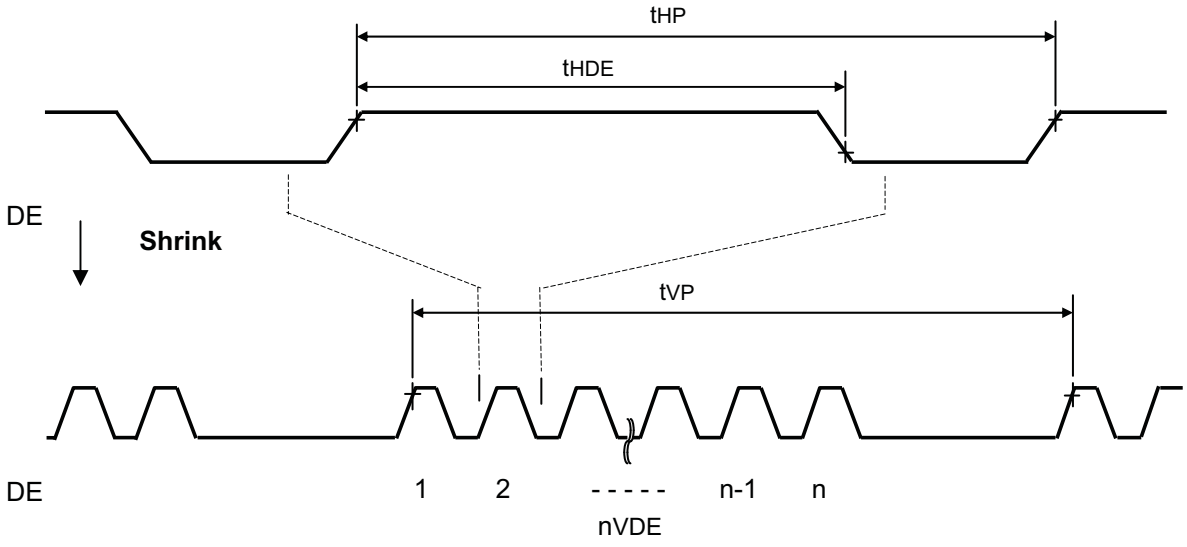
4.3.3 Interface signal timing parameters (DE MODE)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	REMARKS
Clock Frequency	fCLK	60.0	65.0	66.6	MHz	(fCLK=1/tCLK)
Horiz. Period	tHP	1270	1344	1450	tCLK	
Horiz. DE	tHDE	1024	1024	1024	tCLK	
Horiz. Frequency	fH	44.6	48.4	49.5	KHz	(fH=1/tHP)
Vert. Period	tVP	780	806	900	tHP	fV=60Hz typical
Vert. DE	nVDE	768	768	768	tHP	
Vert. Frequency	fV	55	60	62	Hz	fV=1/tVP

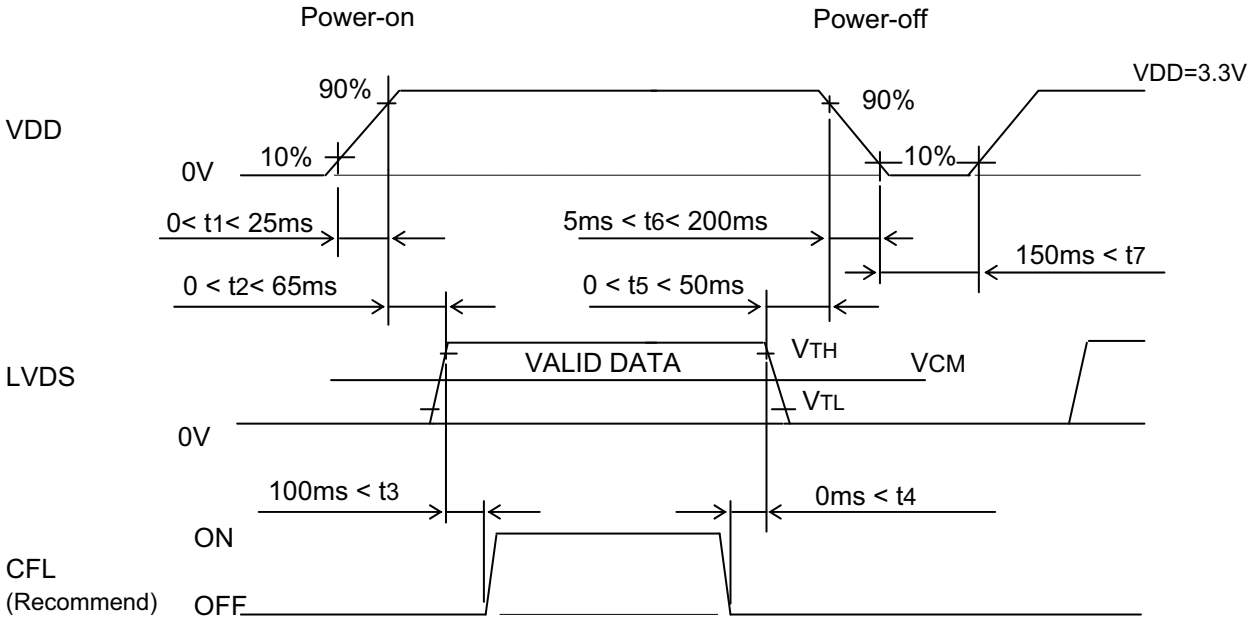
NOTE 1) These signal timing parameters are specified at the digital inputs of LVDS transmitter. With respect to setup time and hold time for DE and DATA signals, please refer to input signal specification of LVDS transmitter.
Recommended LVDS transmitter : SN75LVDS84 (TI)

NOTE 2) Values recorded in this table indicate the properly operating conditions of the internal logical functions. They don't guarantee the display quality or the display situation.

4.3.4 Internal signals timing chart (DE MODE)



4.4 RECOMMENDED SEQUENCE



NOTE 1) LVDS input should be set to "L" level or "Hi-Z.", when the power is turned off.

NOTE 2) LVDS input should be set to "L" level or "H" level, when the power is turned on. Don't set them to "Hi-Z."

NOTE 3) Although no sequence for CFL is specified here, properly maintained timing is recommended as described above. If the backlight is turned on before or after the LVDS signal input, the display may be disordered by the changing of the LCD signals from the timing controller (included in this module). Liquid crystal material or driving circuit can not be damaged by the disorder of the display.

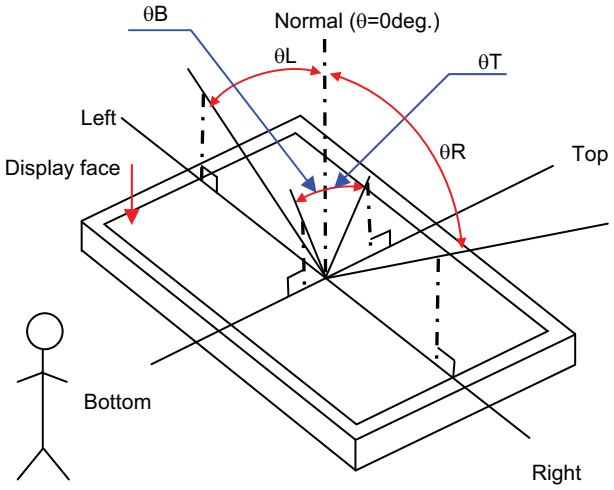
5. OPTICAL SPECIFICATION

5.1 OPTICAL SPECIFICATION

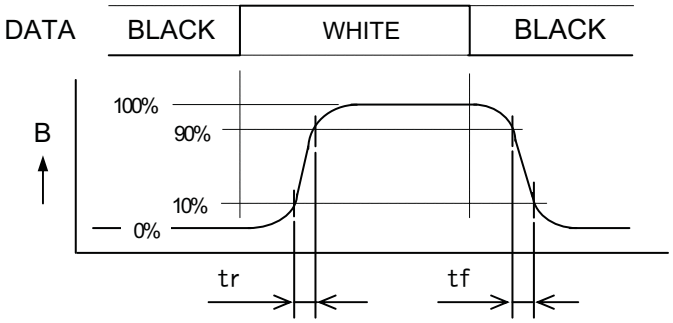
V_{DD} = 3.3V, f_{CLK} = 65MHz, f_H = 48.4kHz, f_V = 60Hz, Ta = 25deg.C

PARAMETER		CONDITIONS	SYMBOL	RATINGS			UNIT	DEFINITION
				MIN.	TYP.	MAX.		
Contrast ratio		θ= 0 deg.	*CR*	300	500	-	-	NOTE)2,4,7
Display Color	RED - x	θ= 0 deg.	*Rx*	0.56	0.59	0.62	-	NOTE)4,7
	RED - y		*Ry*	0.32	0.35	0.38		
	GREEN - x		*Gx*	0.29	0.32	0.35		
	GREEN - y		*Gy*	0.53	0.56	0.59		
	BLUE - x		*Bx*	0.12	0.15	0.18		
	BLUE - y		*By*	0.08	0.11	0.14		
	WHITE - x		*Wx*	0.285	0.315	0.345		
	WHITE - y		*Wy*	0.300	0.330	0.360		
Response	B -> W	θ= 0 deg.	*tr*	-	20	-	ms	NOTE)3,4,7
	W -> B		*tf*	-	5	-		
Brightness		θ= 0 deg.	*B*	380	480	-	cd/m^2	NOTE)4,6,7
Brightness uniformity		θ= 0 deg.	δB	-	-	1.60	-	NOTE)5,6,7
Viewing angle		CR>10	θB	30	45	-	deg.	NOTE) 1, 2, 4,7
			θR	40	50	-		
			θT	10	25	-		
			θL	40	50	-		

5.2 DEFINITION AND CONDITION OF OPTICAL CHARACTERISTICS



NOTE1) Viewing Angle



NOTE3) Response:

NOTE2) Contrast ratio "CR"

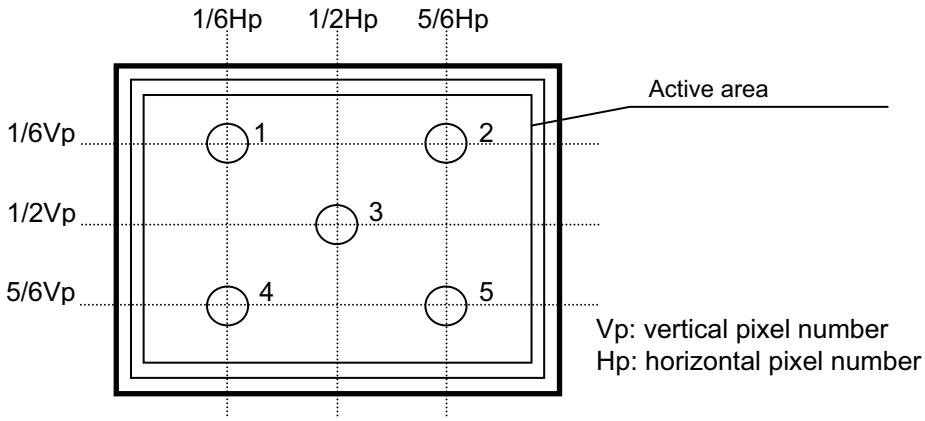
$$CR = \frac{\text{White brightness}}{\text{Black brightness}}$$

NOTE 4) Measured at the center of the active area (point 3 in NOTE 6)

NOTE 5) Brightness uniformity "δB "

$$\delta B = \frac{\text{Maximum brightness of the 5points}}{\text{Minimum brightness of the 5points}}$$

NOTE 6) Measurement points



NOTE 7) Measuring conditions

(1) Instrument : BM-5A (TOPCON Corp.), Field= 2 degree
(2) Measurement distance : 50 cm
(3) Ambient temperature Ta : 25±2 deg C
(4) Display : White screen, Red screen, Green screen, Blue Screen, Black Screen
(5) Display : V_{DD} = 3.3V, f_{CLK} = 65MHz, f_H = 48.4kHz, f_V = 60Hz
(6) Measuring after 30min. elapsed from CFL starting on.
(7) CFL tube current : IL= 6.0 mArms
CFL Inverter : CXA-L0612A-VJL (TDK)

6. INSPECTION

6.1 QUALITY STANDARD

6.1.1 Standards

The standards are the quality level used to judge whether or not product lots pass during acceptance inspections of products delivered to your company. The standards are shown below.

- Inspection method: Compliant with ANSI/ASQC Z1.4-1993, ordinary inspection level Ⅱ, inspection by one time sampling.
- AQL

Defect type	AQL	Definition
Major defects	0.4%	Accompanied with functional abnormalities
Minor defects	1.5%	Out of the range of "6.3 EXTERNAL APPEARANCE STANDARDS", but no functional abnormalities

6.1.2 Lot

Lot means the unit includes all products delivered to your company at one time.

6.1.3 Inspection condition

(1) Environmental condition

Under 20 to 25deg.C, 60±15%RH.

Operative inspections are done under 800 to 2000 lx environment.

Especially related to transparence are performed under at most 50 lx environment.

(2) Inspection method

Inspect the screen by naked eye from a distance of about 30cm on a vertical direction front on.

(3) Driving condition

According to the specification

6.1.4 Treatment of defective products

When defective products were found in your company's acceptance inspection and manufacturing process or field, we treat them according to the rules below.

6.1.5 Treatment of defective products in the acceptance inspection

(1) When a product has failed to pass your company's acceptance inspection, please notify to EPSON IMAGING DEVICES CORP. within 3 weeks from delivery. Otherwise, EPSON IMAGING DEVICES CORP. will regard that it had been accepted.

(2) When a lot has failed to pass your company's acceptance inspection, please return the entire lot to EPSON IMAGING DEVICES CORP. EPSON IMAGING DEVICES CORP. will investigate the causes of defects and will report both the causes and the responses taken to them. Non-defective products shall be delivered to replace all defective products within nonconforming lots.

(3) Non-defective products shall be delivered to replace all defective products within conforming lots.

6.1.6 Treatment of other problems

If any troubles should occur concerns our products that have been assembled at your company's manufacturing processes, both companies shall jointly investigate and resolve the causes.

6.1.7 Warranty

EPSON IMAGING DEVICES CORP. warrants this product for a period of 12 months from production date indicated on the Lot Label attached to the product.

Warranty period for repaired products shall be 6 months from production date indicated on the repair Lot Label attached to the product.

During this period, supplier responsible failures shall be repaired free of charge.

6.1.8 Applicable period of repair

Applicable period of repair shall be 24months from production date indicated on the Lot Label attached to the product.

After 24 months, we cannot provide you our repair service.

6.2 APPLICATION SCOPE

The application scope is limited to the viewing area.

The product should be judged non-defective if all defects are outside of the viewing area and do not interfere with product quality or the assembly process.

Each "dot" means the smallest display unit for R, G or B.
A set of three adjacent R, G and B dots comprise one pixel.

6.3 DISPLAY APPEARANCE STANDARDS

If any item is defined with a boundary sample, the boundary sample takes precedence.

<table>
<tr><th>No.</th><th>ITEM</th><th>CRITERION</th><th>CLASS</th></tr>
<tr><td>1</td><td>Display problems</td><td>Must not include any nonfunctioning or failure to display the correct pattern corresponding to input signal.</td><td>Major defect</td></tr>
<tr><td>2</td><td>Missing lines</td><td>No missing lines permitted.</td><td>Major defect</td></tr>
<tr><td>3</td><td>Dot defects</td><td>Defined allowable ranges should be met for each white, black, R, G, B raster.
The limits apply to the entire display area. *1)
Those visible through the 5% ND-Filter are to be considered bright dot defects.
Bright spot in 60% or more of dot aperture is defined as a bright dot defect, less than 60% is permitted.
Black spot in 60% or more of typical pixel aperture is defined as a black dot defect, less than 60% is permitted.</td><td>Minor defect</td></tr>
<tr><td>4</td><td>Inconsistent display</td><td>Should not be prominent.
If necessary, boundary samples should be provided.</td><td>Minor defect</td></tr>
<tr><td>5</td><td>Refuses and scratches on polarizer or glass
*2)</td><td><Dot shape>
Allowable range
1. distinctly recognized
<table><tr><th>size d (mm)</th><th>numbers</th></tr><tr><td>d≦0.2</td><td>permitted</td></tr><tr><td>0.2＜d≦0.3</td><td>5</td></tr><tr><td>0.3＜d≦0.5</td><td>2</td></tr></table>2. blurred
<table><tr><th>size d (mm)</th><th>numbers</th></tr><tr><td>d≦0.64</td><td>permitted</td></tr><tr><td>0.64＜d≦1.50</td><td>2</td></tr><tr><td>1.50＜d</td><td>0</td></tr></table>Criterion is applied also to pin-holes.
Defects must not be crowded.
Distinctly recognized spot is the one which can be seen at raster pattern.
Blurred spot is the one which can not be seen at raster pattern but can be seen at gray scale pattern.</td><td>Minor defect</td></tr>
<tr><td></td><td></td><td><Line shape>
1. Scratch
<table><tr><th>L: Length (mm)</th><th>W: Width (mm)</th><th>numbers</th></tr><tr><td>permitted</td><td>W≦0.03</td><td>permitted</td></tr><tr><td>L≦5.0</td><td>0.03＜W≦0.10</td><td>3</td></tr><tr><td>-</td><td>0.10＜W</td><td>allowed</td></tr></table>2. Black and white lines
<table><tr><th>L: Length (mm)</th><th>W: Width (mm)</th><th>numbers</th></tr><tr><td>permitted</td><td>W≦0.03</td><td>permitted</td></tr><tr><td>L≦1.0</td><td>0.03＜W≦0.15</td><td>4</td></tr><tr><td>-</td><td>0.15＜W</td><td>allowed</td></tr></table></td><td>Minor defect</td></tr>
</table>

No.	ITEM	CRITERION	CLASS
6	Bubbles in polarizer (display area) *2)	Allowable range size d (mm) / numbers d≦0.2 / permitted 0.2＜d≦0.3 / 5 0.3＜d≦0.5 / 2 0.5＜d / 0	Minor defect

*1: dot defect's allowable range

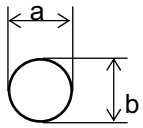
No.	Item	Bright dot defect	Black dot defect	total
1	Defects counts	5	5	10
2	Combined defects	2	2	

- Adjacent 2 bright dots and 2 black dots are counted as one dot respectively.
- Linked three or more dots: none
- Defects must be at least 5mm apart from one another.

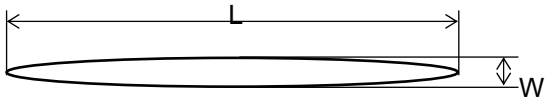
*2: outward of refuses, scratches and bubbles

Dot shape

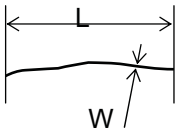
d=(a+b)/2



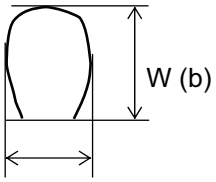
Line shape



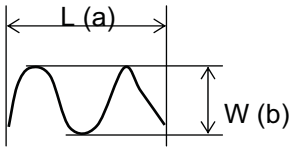
Gentle curve



Curved arch

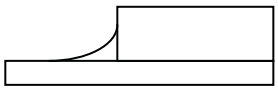


Multiple curves



- Any defect outside the viewing area can be ignored.
- When viewing with the naked eye, any bent or dot-shaped item must be measured and checked according to the dot shape defect's standard.
- Refer to the following examples of measurement methods.

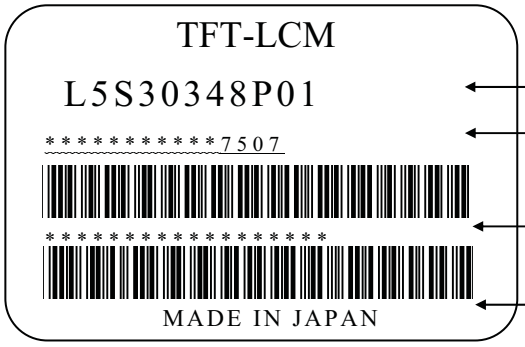
6.4 EXTERNAL APPEARANCE STANDARDS

No.	ITEM	CRITERION	CLASS
1	Different specifications	Not permitted.	Major defect
2	Missing parts	All parts must be complete.	Major defect
3	Damaged resist on FPC	Copper patterns on FPC must not be visible.	Minor defect
4	Circuit pattern	Must not be peeled or separated from FPC.	Major defect
5	Conductive refuses	No solder refuses or solder balls easily moving. Fixed conductive refuses over 0.2mmϕ are not permitted. Should not be crowded. (crowded: means gathering more than 5pcs within ϕ=5mm)	Minor defect
6	Dirt	Should not be prominent. Dirt on backside is permitted.	Minor defect
7	Dirt or scratch on interface pins	Should not be prominent.	Minor defect
8	Plating	Must not be peeled, no rust, no discoloration.	Minor defect
9	Soldering	Solder omissions are not permitted at any solder point. Solder bridges are not permitted. Cold soldering is not permitted.	Major defect Major defect Minor defect
10	Parts soldering	There must be fillet 	Minor defect

7. PACKING

7.1 LABEL

7.1.1 Module label



EPSON Imaging Devices's Product number

Module Lot No.
The last 4 digits indicate a production date.
(Ex.) May.07.2007

Panel Lot No.

Production country

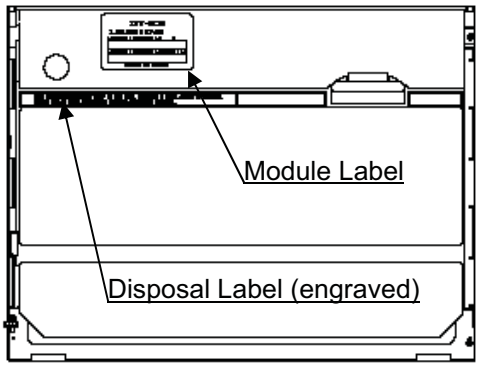
Production Month

Month : Code	Month : Code
Jan. : 1	Jul. : 7
Feb. : 2	Aug. : 8
Mar. : 3	Sep. : 9
Apr. : 4	Oct. : X
May : 5	Nov. : Y
Jun. : 6	Dec. : Z

7.1.2 Disposal label (engraved)

COLD CATHODE FLUORESCENT LAMP IN LCD PANEL CONTAINS A SMALL AMOUNT OF MERCURY.
PLEASE FOLLOW LOCAL ORDINANCES OR REGULATION FOR DISPOSAL.

7.1.3 Label position



8. DURABILITY

Reliability Test Item and Test Condition / Method

No.	ITEMS	CONDITION
1	Continuous operating test at high temperature	Apply rated voltage in an atmosphere of 50 ± 2 ˚C and operate 240 hours.
2	Continuous operating test at low temperature	Apply rated voltage in an atmosphere of 0 ± 2 ˚C and operate 240 hours.
3	Storage test at high temperature	After allowing to stand for 240 hours at 60 ± 2 ˚C, leave for 2 hours at the room temperature and humidity for checking.
4	Storage test at low temperature	After allowing to stand for 240 hours at -20 ˚C, leave for 2 hours at the room temperature and humidity for checking.
5	Continuous operating test at high temperature and high humidity	After allowing to stand for 120 hours at 40 ± 2 ˚C and 85% RH of rela-tive humidity, leave for 2 hours at the room temperature and humidity for checking.
6	Thermal shock test	Hold the cycle test 120 times on the condition as follows : -20 ± 2 ˚C : 60 minutes 60 ± 2 ˚C : 60 minutes
7	Vibration test (non-operating)	Hold the cycle test 1 times in the direction of X, Y, Z respectively on the condition as follows : Vibration frequency : 10 ~ 200 Hz Sweep : 30 min. Acceleration : 1.5 G
8	Shock test (non-operating)	Shock test condition is as follows : Acceleration : 50 G Acting time : 6 ms Direction : ±XYZ
9	Electrostatic discharge test (non-operating)	Give the test on the condition as follows : Capacity : 200 / 100※ pF Resistance : 0 / 1.5※ kΩ ※machine model / human body model Applied voltage : ± 7.5 kV Give the air discharges at the center of the glass and 4 points on the Bezel at each side, every 3 times.
10	Shock test (after packing)	Vibration frequency : 10 ~ 50 Hz Acceleration : 1.0 G (Z direction) , 0.7G (XY direction) Sweep : (10 ~ 50 Hz)/10 min Repetition : 1 time Direction : ±XYZ
11	Falling test (after packing)	Figure 1 shows fall parts. It falls so that parts in Figure 1(A ~ F) may collide with floor. (It falls in alphabetical order) Table 1 shows height of fall.

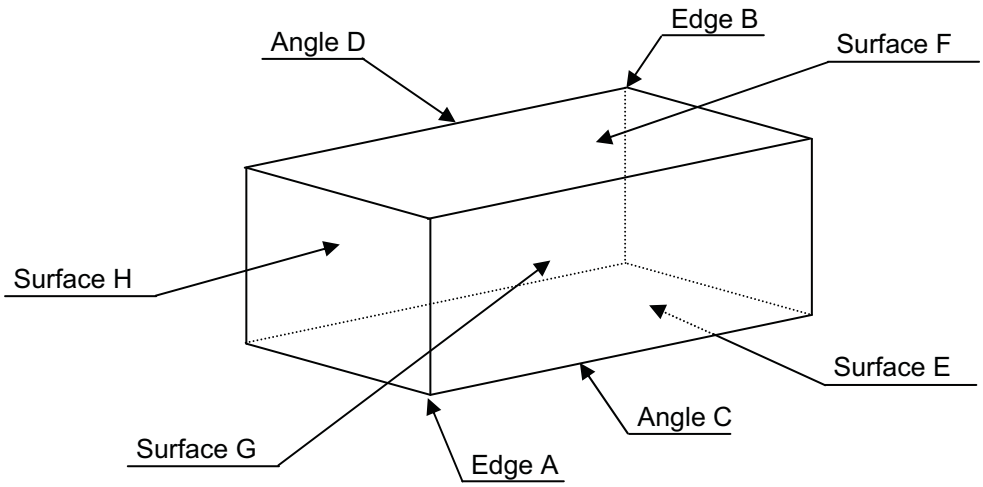


Figure 1

Table 1

Part	A	B	C	D	E	F	G	H
Height of Falling (cm)	80	80	80	80	100	100	100	100

9. LCD MODULE USAGE AND PRECAUTIONS

9.1 HANDLING

1) Broken glass:

Be careful to broken glass of display face. When display face is damaged, please be careful enough not to cut hands by a piece of glass. The surface of a LCD module is covered by plastic film, and glass is hard to be scattered, but there can be the hurt when touching a broken portion. And because CFL is also made of glass, please be careful equally.

2) Broken panel:

Do not touch the liquid which flowed out of a panel. When a panel was damaged and the liquid flow, don't breathe in the liquid, drink it, and touch it. When the liquid stuck to a hand or clothes, wipe it off in soap or alcohol immediately, then wash in water. When the liquid touched to eyes, wash eyes with washing water more than 15 minutes, and undergo a medical treatment of a doctor.

3) Preventing of stain and dust:

Handle a LCD module as much as possible in a room with a few dusts. In addition, when in acceptance inspection or installing process, wear a finger case or the soft gloves which do not make a dust to prevent stain of display face of a module.

4) Protection board of display face:

Remove a protection board of display face as later as possible in assembling process to prevent dust or scratch onto display face.

5) Wiping off of stain on display face:

When display face of a LCD module was stained, please wipe it off lightly with cotton or soft clean cloth. When even they are not removed, wipe it off lightly with cotton or soft clean cloth which soaked with water. Be careful that water does not flow into the LCD module inside.

6) Water drops on display face:

Don't leave display face with water drops on. When water drops stuck, please wipe it off with cotton or soft cloth immediately. Display face changes color and get a stain when leaving drops of water. In addition, when water drops flow into the LCD module inside, there might cause a trouble.

7) Disassemble or modify of LCD module:

Do not attempt to disassemble, rework or modify the LCD module by any means. There is the possibility of electric shock, destruction of electronic parts, scratch on a display face, or dust passing into a LCD module. And if using disassembled, reworked or modified LCD module, electronic parts might emit smoke or outbreak a fire by dust or malfunction of electronic parts. A product guarantee becomes not available for a LCD module which disassembled, reworked or modified by user.

8) Countermeasures to static electricity:
C-MOS LSI and an electronic part of the LCD module inside can be destroyed by static electricity. In order not to apply static electricity to a LCD module, spread a conductive mat to a floor and a work desk. In addition, worker should mount a ground band. Make consideration to prevent of static electricity while at work.

9) Inserting a CFL connector:
Insert a CFL connector justly. A connector for between a CFL power supply circuit and a CFL of a LCD module incorporated backlight should not be inserted slantways or half-ways. And confirm it by all means. When it is not inserted justly, a circuit and a part might emit smoke or be damaged by burning by the high voltage of a CFL power supply circuit. In addition, when there is the possibility that it is not inserted justly, be sure to insert a connector after having confirmed LCD module that switched off a CFL power supply circuit. In addition, please does not use except a recommended CFL connector.

10) Power supply when in a handling of LCD module:
Be careful to electric shocks. When handling a LCD module, do it after switching the power supply off by all means. While in operation, there is the possibility of electric shocks by touching on a CFL electrode, a cable, a connector, or a CFL power supply circuit, because the high voltage is applied.

11) Power supply in connecting operation:
Switch off the power supply of the parent application at the time of installing process by all means. When inserting or pulling off a connector of a LCD module with having switched on the parent application, it can be damaged in an electric circuit of a LCD module. When power supply have to be turned on by testing or inspection process, use a driving circuit which satisfies the ON/OFF sequence for power supply and input signals.

12) Heating-up of CFL circumference:
Warn a burn when operating backlight including a CFL. A CFL circumference becomes high temperature.

13) How to insert a connector:
When inserting a cable in a connector of a LCD module or take it off, make attention so that strong external force is not added to a connector of the LCD module. PWB and inside connection of a TCP driver can be damaged by a strong external force. When installing a LCD module to a target, make attention not to put these cables between the case of target and the LCD module. A connector of a parent application and an input connector of LCD module should not be inserted slantways or half-ways. And confirm it by all means. When it is not inserted justly, a circuit and a part might emit smoke or be damaged by burning by the high voltage of a CFL power supply circuit.

14) Handling of a cable for backlight:
A CFL cable for backlight should not be pulled or damaged. They might cause troubles by the damage of soldering on the root of a CFL or a CFL.

15) Immediately discontinue using the CFL when if it darkens drastically or turns pink because depletion of effective mercury may be occurring within the CFL tube which may make the temperature rise. Due to these characteristics, the CFL may break or generate smoke

9.2 DESIGN OF APPLICATION

1) Absolute maximum ratings:
Follow the absolute maximum ratings specified in this document by all means. The absolute maximum rating is the rating which LCD module must not be violated. When using a LCD module at the condition beyond those, a burning / destruction of electronic parts or a permanent damage of characteristics may be caused. Therefore, make appropriate design not to violate the absolute maximum ratings with consideration of environmental temperature, deviation of input signals, and electronic parts tolerances.

2) Polarity of power supply to a CFL:
Polarity of a CFL cable from CFL power supply should be designed as that the high voltage cable and the low voltage cable cannot be assembled conversely. In addition, because there might be a brightness degradation of backlight or a starting failure if the CFL cable is too long, do a design becoming the cable shortest as much as possible.

3) Torsion and bending while in the process of installing:
Make sure that stresses, warps and twists are not applied to the LCD module when installing to a target frame. Even if stresses are temporary, it may be the cause of failure to the LCD module.

4) Preventing of a mechanical shock:
Be careful not to give a strong mechanical shock such as drops or shocks. There can be a cause of trouble such as a scratch of display face or a malfunction of LCD module.

5) Preventing of a pressure onto display face:
Make attention that no strong external force such as pushing strongly onto display face of a LCD module. Because there can be a scratch on display face or a cause of trouble of a LCD module.

6) Preventing of a scratch on display face:
Make attention not to rub or push a display face of a LCD module by a rigid thing such as tools. In addition, be sure not to put a heavy thing such as a tool on display face and not to pile up LCD modules each other. A polarizer used for display face is easy to get a scratch or traces and it might be damaged.

7) Preventing unevenness of the display:
EPSON Imaging Devices recommends use of all installation holes shown in this document. Screws used should have proper dimensions according to the specifications. The housing case must be designed carefully in order to prevent stresses, warps and curves on all directions of the LCD module. If stresses, warps, and curves are applied to the LCD module, the display may turn out uneven.

8) Power supply of a CFL:
In the LCD module which backlight with CFL is incorporated in, be sure to design a CFL power supply circuit to be able to be applied the open circuit voltage more than 1 second. If it is less than it, there might be the possibility that a CFL does not turn on. In addition, a current control type inverter should be used that can control a tube current. If using a voltage controlled type inverter, excess current might flows in a high temperature environment, and, a starting characteristics of a CFL may degrades in a low temperature environment.

In addition, please design the power supply of the backlight so that it would turn off quickly in the following conditions:

a) when the LCD module turns dark or changes pink drastically,
b) when an overcurrent flows in the lamp cable,
c) when the inverter is unloaded

9) Countermeasures to heating-up:
When operating backlight with CFL, temperature in the target application which incorporated a LCD module is raised. Therefore, give measures to radiate of heat such as holes of a case to satisfy temperature specifications of a LCD module.

10) Noise of Power supply:
Because the spike noise existing in a power supply is a cause of malfunction of a driving circuit in a LCD module or an abnormality of display, spike noise on VDD must be within 100 mV_{P-P} (but never violate the absolute maximum rating).

11) Power sequence:
Before LCD module is switched on, please make sure that power supply and input signals of system, testing equipment, etc. meet the recommended power sequence. The protection circuit will operate if the power supply sequence can not be kept and the LCD module may shut down.

12) Protection for power supply:
Please study to adapt protection for power supply against trouble of LCD module, depending on usage condition of system. Fuse installed on LCD module should be never modified. Any modification to make the function of fuse ineffective may cause burning or break of printed wiring board or other components at circuit trouble.

13) Protection against electric shock
High voltage is applied to CFL connector, inverter circuit and CFL at lighting. Please make design not to expose or be accessible to such high voltage parts to avoid electric shock.

14) Recommendation for use of a protection cover and a UV cut filter:
EPSON Imaging Devices recommends use of a transparent protection cover on a liquid crystal display aperture to prevent scratch and dust of display face and invasion of water, when using under a too cruel condition in such as outdoors. Furthermore, EPSON Imaging Devices recommends use of a U.V. cut filter (cuts equal to or less than 390 nm) when it is exposed to direct rays of the sun for a long time. Please consider it so that dew condensation does not occur in the cover.

15) Temperature dependence of display:
The response (optical response) of display varies with temperature. The response becomes slow at low temperature. In addition, brightness and chromaticity vary with temperature, too.

16) Starting delay and lifetime under low temperature:
The starting characteristic of a CFL degraded under low temperature (the time before light being stable gets longer from power supply ON). In addition, please operate a CFL at room temperature as possible, because the lifetime shortens when operating under low temperature by the characteristics itself.

17) Dew condensation:
In an environment of sudden temperature change, there might be a dew condensation on surface or inside of a LCD module. Because it causes a degradation of display or malfunction, be sure to make consideration for design that dew condensation does not occur.

18) Image sticking:

a) Image sticking may appear when the same pattern (still image, character etc.) have been displayed for a long period of time.

b) When the LCD module is continuously displayed with a letterbox mode, Image sticking may appear on the display.
We recommend that the LCD module is displayed with the full-screen mode in order to prevent image sticking from occurring.

c) Image sticking normally disappears by displaying a gray-screen for a while. However when the image sticking is remarkable, it may not disappear even if the gray screen is displayed on the LCD module.

19) Dirty and uneven display:
Dirt and unevenness sometimes partly appear with the increase in the total operation time.

20) Change of Color CIE coordinates:
When LCD module is used for a long time, the color of the parts in backlight changes, and it cause the shift of the display color.

9.3 STORAGE

1) Storage and transport:
Keep a LCD module with a packing form of shipment in a dark room which direct rays of the sun does not irradiate with low temperature, with low humidity, and with no dew condensation. In addition, keep it in an environment with little temperature change because there is the possibility that dew condensation occurs by a sudden temperature change. When dew condensation occurs, it may be a cause of operation abnormality or trouble.

2) Transport:
Because the master carton may be damaged or shape transformed by an excessive load applied, store and transport with piled up in lower than the number which recorded in a master carton label.

3) Handling:
Because a LCD module is a product having precision electronic parts and glass products, it might be damaged by an excessive shock or a dropping. Although a LCD module does protected with master carton, handle it carefully to reduce a shock in transshipping, transporting and loading.

9.4 DISPOSAL

1) Disposing LCD modules:
When disposing LCD modules, consult a company specialized in industrial waste treatment which is permitted by the government or the local authority. When disposing CFL, obey the regulations or rules given by the local government because mercury is contained in the CFL.

9.5 OTHER PRECAUTIONS

1) This product is developed and produced to use for general electronic equipment (OA instrument products, communication terminal instrument products, consumer electronics products, game instrument products). The specifications does not correspond to a usage or a device that extremely high reliability or safety are needed. (i.e. aviation / space instruments, nuclear energy control instruments, life-support equipment.)

2) Observe conditions and precautions in this document in use of this product. Even if in a range of condition, use this product with considerations for safety design as a total system and instrument, so that an accident resulting in injury, a fire accident, or the social damage will not occurs.

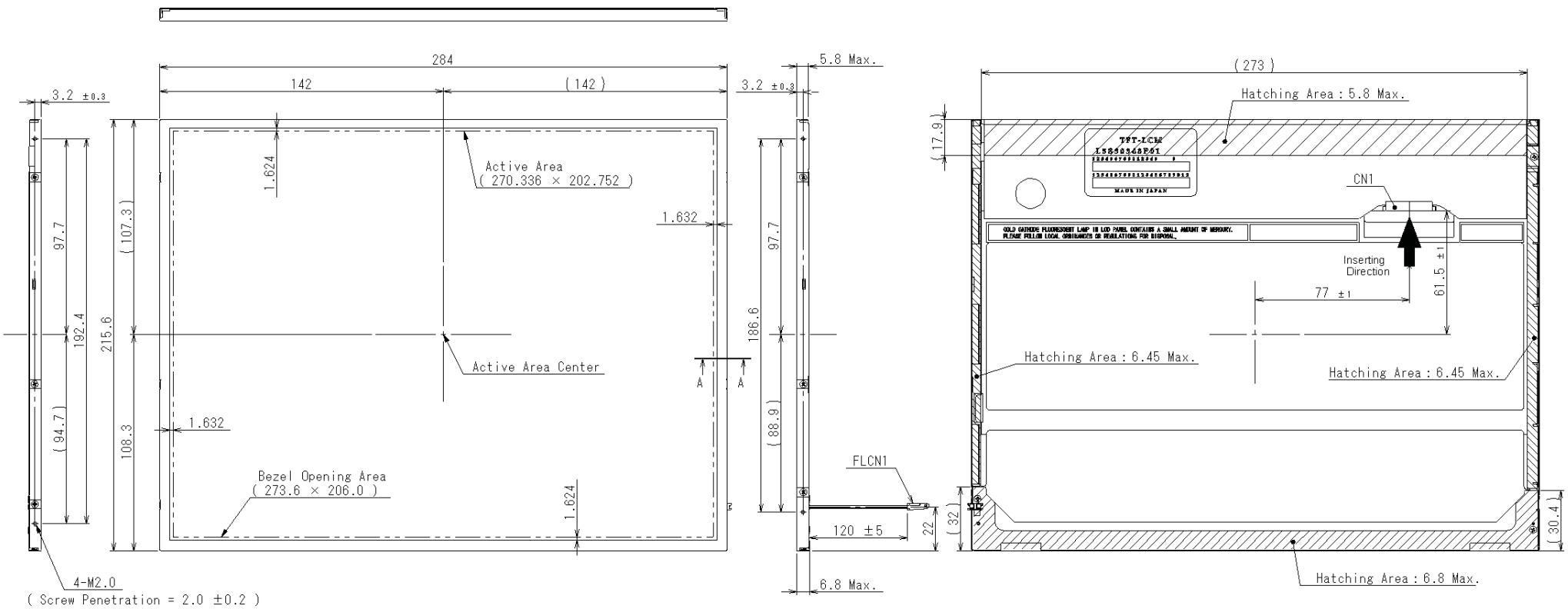
3) This product does not design as an anti-radiation device.

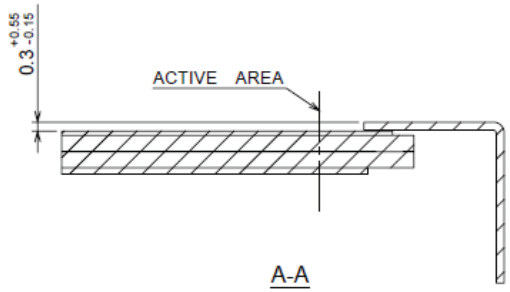
4) Any contents of this publication do not guarantee or approve the rights of enforcement for a third person (party) about the intellectual property and others.

5) EPSON Imaging Devices forbids firmly modifying or copying a part or all of this publication without a documented permission.

6) The contents stated in this document and the product may be subject to change without prior notice.
When you kindly study to use product, please ask our distributor or us for the latest information.

OUTWARD DRAWINGS





CN : DF19KR-20P-1H (HIROSE)

FLCN1 : BHSR-02VS-1(JST)

Note1 : Unspecified dimension tolerances are +/-0.5 mm

Note2 : Screw torque 0.20 N·m Max.

UNIT：mm

EPSON IMAGING DEVICES CORP.	Product Number	L5S30348P01	Rev. No.	00

EPSON IMAGING DEVICES CORPORATION

6295 Tazawa, Toyoshina, Azumino-shi, Nagano-ken
399-8285, JAPAN
TEL: +81-0263-73-5835, FAX: +81-0263-72-7647

Product Chemical Summary

The chemical analysis report from third party test laboratory are submitted by vender.
EPSON IMAGING DEVICES CORPORATION summarize for your reference.

Model : L5S30348P01
Date : 2007/8/9

Item	Parts	Part Element	Content (ppm)								Report Number ro Comment
			Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	TOTAL Chromium	Chromium VI (Cr6+)	TOTAL Bromine	Polybrominated biphenyl (PBBs)	Polybrominated biphenyl ethers (PBDEs)	
1	LCD Panel	Glass 1	N.D.	N.D.	N.D.	N.D.	-	-	N.D.	N.D.	JP/2007/030918
2		Element 1	N.D.	N.D.	N.D.	-	N.D.	-	-	-	7962498-0
3		Element 2	N.D.	N.D.	-	N.D.	N.D.	-	-	-	JP/2006/021428
4		Element 3	N.D.	N.D.	N.D.	N.D.	-	-	-	-	06119
5		Glass 2	N.D.	N.D.	N.D.	N.D.	-	-	N.D.	N.D.	JP/2007/030918
6		Filter Red	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
7		Filter Green	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
8		Filter Blue	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
9		Over Coat	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
10		Seal 1	N.D.	N.D.	N.D.	N.D.	-	N.D.	-	-	K304050133
11		Spacer 1	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/020806
12		Spacer 2	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/090116
13		Spacer 3	438	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
14		Liquid Crystal	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
15		Seal 2	N.D.	N.D.	N.D.	N.D.	-	-	N.D.	N.D.	05-AG-8648 JP/2006/031953
16	ACF 1		N.D.	N.D.	N.D.	N.D.	-	N.D.	-	-	AK0528-81
17	ACF 2		N.D.	N.D.	N.D.	N.D.	-	N.D.	-	-	AK0528-16
18	COF Unit 1	Tape	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/26808
19		Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/44134
20		Chip	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/100322
21	COF Unit 2	Tape	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/061974
22		Resist	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/080148
23	PCB Unit	Connector	7.0	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	SE/2006/95865
24		Tr 1 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	SH7012300
25		Tr 2 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	SH7012300
26		FUSE (Glass)	550000	N.C.	N.C.	-	N.C.	-	-	-	Material Sheet Exempted Application : Lead in glasses of electronic components
27		C (CERAMIC) 1	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
28		C (CERAMIC) 2	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
29		Ferrite Bead 1	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
30		Ferrite Bead 2	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
31		Ferrite Bead 3	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
32		C (CERAMIC) 3	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
33		C (CERAMIC) 4	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
34		C (CERAMIC) 5	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
35		D 1 (Frame Plating)	46	N.D.	N.D.	-	N.D.	-	-	-	EC401524601
36		D 1 (Frame)	N.D.	N.D.	N.D.	-	N.D.	-	-	-	EC402140901
37		D 1 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2004/11070237
38		D 1 (Chip)	45.7	N.D.	N.D.	-	N.D.	-	-	-	F690501
39		C (CERAMIC) 6	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
40		R 1 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 1 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
41		R 2 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 2 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
42		R 3 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 3 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
43		R 4 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 4 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
44		R 5 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 5 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
45		R 6 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 6 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
46		R 7 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 7 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
47		R 8 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 8 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030

Item	Parts	Part Element	Content (ppm) Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	TOTAL Chromium	Chromium VI (Cr6+)	TOTAL Bromine	Polybrominated biphenyl (PBBs)	Polybrominated biphenyl ethers (PBDEs)	Report Number ro Comment
48		R 9 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 9 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
49		R 10 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 10 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
50		R 11 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Exempted Application : Lead in glasses of electronic components
		R 11 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
51		R 12 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Exempted Application : Lead in glasses of electronic components
		R 12 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
52		R 13 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Exempted Application : Lead in glasses of electronic components
		R 13 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
53		R 14 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Exempted Application : Lead in glasses of electronic components
		R 14 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030
54		R 15 (Glass)	550000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 15 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030 TJTC0701922
55		R 16 (Glass)	709000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 16	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030 TJTC0701922
56		R 17 (Glass)	709000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 17	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030 TJTC0701922
57		R 18 (Glass)	709000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 18	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030 TJTC0701922
58		R 19 (Glass)	709000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 19	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030 TJTC0701922
59		R 20 (Glass)	709000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 20	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030 TJTC0701922
60		R 21 (Glass)	709000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 21	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030 TJTC0701922
61		R 22 (Glass)	709000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application : Lead in glasses of electronic components
		R 22	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0705030 TJTC0701922
62		VR 1 (Solder)	197	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0604673
		VR 1 (Flux)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0703741
		VR 1 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0704052
63		VR 2 (Solder)	197	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0604673
		VR 2 (Flux)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0703741
		VR 2 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0704052
64		VR 3 (Solder)	197	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0604673
		VR 3 (Flux)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0703741
		VR 3 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TJTC0704052
65		D 2 (Chip)	N.D.	N.D.	N.D.	-	N.D.	-	-	-	JP/2007/030982
		D 2 (Frame)	N.D.	N.D.	N.D.	-	N.D.	-	-	-	JP/2007/030986
		D 2 (Wire)	N.D.	N.D.	N.D.	-	N.D.	-	-	-	JP/2007/030984
		D 2 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2007/030980
		D 2 (Plating)	160	N.D.	N.D.	-	N.D.	-	-	-	JP/2007/030985
		D 2 (Ink)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2007/030987
		D 2 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2007/030980
66		D 3 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/43941A
		D 3 (Solder)	104	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/43922A
67		R 23 (Terminal Glass)	3131.5	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/40593
		R 23 (Element Glass)	136573.3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1218A
		R 23 (Under Coat Glas	230316.6	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1222A
		R 23 (Over Coat Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/060835
		R 23 (Side Terminal)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050869
		R 23 (First Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050876
		R 23 (Second Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050877
		R 23 (Base)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/121198

Item	Parts	Part Element	Content (ppm)								Report Number ro Comment
			Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	TOTAL Chromium	Chromium VI (Cr6+)	TOTAL Bromine	Polybrominated biphenyl (PBBs)	Polybrominated biphenyl ethers (PBDEs)	
68		R 24 (Terminal Glass)	3131.5	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/40593
		R 24 (Element Glass)	136573.3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1218A
		R 24 (Under Coat Glas	230316.6	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1222A
		R 24 (Over Coat Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/060835
		R 24 (Side Terminal)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050869
		R 24 (First Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050876
		R 24 (Second Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050877
		R 24 (Base)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/121198
69		R 25 (Terminal Glass)	3131.5	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/40593
		R 25 (Element Glass)	136573.3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1218A
		R 25 (Under Coat Glas	230316.6	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1222A
		R 25 (Over Coat Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/060835
		R 25 (Side Terminal)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050869
		R 25 (First Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050876
		R 25 (Second Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050877
		R 25 (Base)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/121198
70		R 26 (Terminal Glass)	3131.5	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/40593
		R 26 (Element Glass)	136573.3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1218A
		R 26 (Under Coat Glas	230316.6	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1222A
		R 26 (Over Coat Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/060835
		R 26 (Side Terminal)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050869
		R 26 (First Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050876
		R 26 (Second Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050877
		R 26 (Base)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/121198
71		R 27 (Terminal Glass)	3131.5	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/40593
		R 27 (Element Glass)	136573.3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1218A
		R 27 (Under Coat Glas	230316.6	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1222A
		R 27 (Over Coat Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/060835
		R 27 (Side Terminal)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050869
		R 27 (First Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050876
		R 27 (Second Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050877
		R 27 (Base)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/121198
72		R 28 (Terminal Glass)	3131.5	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/40593
		R 28 (Element Glass)	136573.3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1218A
		R 28 (Under Coat Glas	230316.6	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1222A
		R 28 (Over Coat Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/060835
		R 28 (Side Terminal)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050869
		R 28 (First Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050876
		R 28 (Second Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050877
		R 28 (Base)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/121198
73		R 29 (Terminal Glass)	3131.5	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/40593
		R 29 (Element Glass)	136573.3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1218A
		R 29 (Under Coat Glas	230316.6	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1222A
		R 29 (Over Coat Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/060835
		R 29 (Side Terminal)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050869
		R 29 (First Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050876
		R 29 (Second Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050877
		R 29 (Base)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/121198
74		R 30 (Terminal Glass)	3131.5	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/40593
		R 30 (Element Glass)	136573.3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1218A
		R 30 (Under Coat Glas	230316.6	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1222A
		R 30 (Over Coat Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/060835
		R 30 (Side Terminal)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050869
		R 30 (First Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050876
		R 30 (Second Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050877
		R 30 (Base)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/121198
75		R 31 (Terminal Glass)	3131.5	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/40593
		R 31 (Element Glass)	136573.3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1218A
		R 31 (Under Coat Glas	230316.6	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C1222A
		R 31 (Over Coat Resin	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/060835
		R 31 (Side Terminal)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050869
		R 31 (First Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050876
		R 31 (Second Plating)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050877
		R 31 (Base)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2005/121198
76		FET 1 (Chip)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/45392
		FET 1 (Resin)	8	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/45391
		FET 1 (Frame)	N.D.	N.D.	N.D.	-	N.D. (Negative)	-	N.D.	N.D.	CE/2007/43929A
		FET 1 (Wire)	N.D.	N.D.	N.D.	-	N.D. (Negative)	-	N.D.	N.D.	CE/2007/45387
		FET 1 (Frame Plating)	104	N.D.	N.D.	-	N.D. (Negative)	-	N.D.	N.D.	CE/2007/43922A
		FET 1 (Perform)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/44613A
77		D 4 (Solder Plating)	104	N.D.	N.D.	-	N.D. (Negative)	-	N.D.	N.D.	CE/2007/43922A
		D 4 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/43940A
78		D 5 (Solder Plating)	104	N.D.	N.D.	-	N.D. (Negative)	-	N.D.	N.D.	CE/2007/43922A
		D 5 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/43941A
79		D 6 (Solder Plating)	104	N.D.	N.D.	-	N.D. (Negative)	-	N.D.	N.D.	CE/2007/43922A
		D 6 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/43941A
80		IC 1 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050594
81		IC 2 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/050594
82		IC 3 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	LPCI/07329/06
83		IC 4 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2007/050594
84		Coil (Solder)	152	N.D.	N.D.	-	N.D. (Negative)	-	N.D.	N.D.	CE/2007/36081
		Coil (Ink)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/34067
		Coil (Wire)	45	N.D.	N.D.	-	N.D. (Negative)	-	N.D.	N.D.	CE/2007/34077
		Coil (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2007/34071

Item	Parts	Part Element	Content (ppm)								Report Number ro Comment
			Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	TOTAL Chromium	Chromium VI (Cr6+)	TOTAL Bromine	Polybrominated biphenyl (PBBs)	Polybrominated biphenyl ethers (PBDEs)	
85		R 32 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/69262
		R 32 (Glass)	142000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application: Lead in glasses of electronic components
86		R 33 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/69262
		R 33 (Glass)	142000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application: Lead in glasses of electronic components
87		R 34 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/69262
		R 34 (Glass)	142000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application: Lead in glasses of electronic components
88		R 35 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/69262
		R 35 (Glass)	142000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application: Lead in glasses of electronic components
89		R 36 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/69262
		R 36 (Glass)	142000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application: Lead in glasses of electronic components
90		R 37 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/69262
		R 37 (Glass)	142000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application: Lead in glasses of electronic components
91		R 38 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/69262
		R 38 (Glass)	142000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application: Lead in glasses of electronic components
92		R 39 (Glass)	710000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application: Lead in glasses of electronic components
93		R 40 (Glass)	710000	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet Exempted Application: Lead in glasses of electronic components
94		Ferrite Bead 4	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
95		Ferrite Bead 5	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
96		Ferrite Bead 6	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
97		C (CERAMIC) 7	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
98		C (CERAMIC) 8	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
99		C (CERAMIC) 9	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
100		C (CERAMIC) 10	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
101		C (CERAMIC) 11	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
102		C (CERAMIC) 12	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
103		C (CERAMIC) 13	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
104		C (CERAMIC) 14	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
105		C (CERAMIC) 15	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
106		C (CERAMIC) 16	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
107		C (CERAMIC) 17	N.C.	N.C.	N.C.	-	N.C.	-	N.C.	N.C.	Material Sheet
108		Tr 3	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	K0709213-KA
109		Tr 4	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	K0709213-KA
110		Tr 5	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	K0709213-KA
111		FET 2	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	K0709213-KA
112		IC 5	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	K0709213-2
113		PCB (Resist White)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/B6215 CE/2006/67870
		PCB (Resist Green)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/75335 0607016
		PCB (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP-2006-050563
		PCB (Plating)	110	N.D.	N.D.	N.D.	-	-	N.D.	N.D.	3810943-2
114		IC6 (Resin)	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	KA/2006/21204
		IC6 (Ink)	N.D.	N.D.	N.D.	N.D.	-	N.D.	-	-	06220743-6 06220286-3
115		Solder	320	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	06223593
116	Frame Unit	Bezel	N.C.	N.C.	N.C.	-	N.C.	-	-	-	Material Sheet
117		Double Side Tape	N.D.	N.D.	N.D.	-	N.D.	-	-	-	TQTA-ICP-0605194 TQTA-BR-0605011
118		Insulating Tape A	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TQTA-ICP-0606095 TQTA-BR-0606002
119		Insulating Tape B	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/030456 CE/2005/C4772
120	CCFL Unit	Light Guide	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/52857A
121		PL Frame	N.D.	N.D.	N.D.	N.D.	-	N.D.	-	-	JP/2006/050713 G20G02508
122		Diffusing film	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2006/83534
123		Prism Film	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	4535
124		Reflective Film	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/010401
125		Besel A (Metal)	N.C.	N.C.	N.C.	-	N.C.	-	-	-	Material Sheet
126		Screw (Metal)	N.C.	N.C.	N.C.	-	N.C.	-	-	-	Material Sheet
127		Tape	N.D.	N.D.	N.D.	N.D.	-	N.D.	-	-	JP/2006/090521
128		Light Guide Tape	N.D.	N.D.	N.D.	N.D.	-	N.D.	-	-	FTA08214-01
129		Film Tape	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C4772
130		Insulating Tape	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TQTA-ICP-0606095
131		CCFL	200	N.D.	1.5mg	-	N.D.	-	-	-	CCFL Data (Hg: less than 5mg)
132		Holder	N.D.	N.D.	N.D.	-	N.D.	N.D.	-	-	D62803
133		Harness A	3	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	C315784
134		Harness B	N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	C514309

Item	Parts	Part Element	Content (ppm)								Report Number ro Comment
			Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	TOTAL Chromium	Chromium VI (Cr6+)	TOTAL Bromine	Polybrominated biphenyl (PBBs)	Polybrominated biphenyl ethers (PBDEs)	
135		Housing	N.D.	N.D.	N.D.	-	N.D.	N.D.	-	-	2062945/LD G20G02015
136		Contact (Metal)	N.C.	N.C.	N.C.	-	N.C.	-	-	-	Material Sheet
137		Solder A	210	N.D.	N.D.	-	N.D.	N.D.	-	-	06221859-1
138		Reflector (Metal)	N.C.	N.C.	N.C.	-	N.C.	-	-	-	Material Sheet
139		Ring	N.D.	N.D.	N.D.	N.D.	-	-	-	-	13290
140		Besel B (Metal)	N.C.	N.C.	N.C.	-	N.C.	-	-	-	Material Sheet
141		Reinforcement Tape	1.69	N.D.	N.D.	N.D.	-	-	N.D.	N.D.	TQTA-ICP-0602383
142		Solder B	210	N.D.	N.D.	-	N.D.	N.D.	-	-	06221859-1
143		Ravel	N.D.	N.D.	N.D.	-	N.D.	N.D.	-	-	17-2H-0467
144	Insulating Tape 1		N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/030456 CE/2005/C4772
145	Insulating Tape 2		7.7	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	JP/2006/030401
146	Insulating Tape 3		N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	TQTA-ICP-0611166
147	Reinforcement Tape		N.D.	N.D.	N.D.	N.D.	-	-	N.D.	N.D.	JP/2006/041262
148	Conductive Tape		N.D.	N.D.	N.D.	-	N.D.	-	N.D.	N.D.	CE/2005/C4782
149	Screw 1 (Metal)		N.C.	N.C.	N.C.	-	N.C.	-	-	-	Material Sheet
150	Screw 2 (Metal)		N.C.	N.C.	N.C.	-	N.C.	-	-	-	Material Sheet
151	Label		N.D.	N.D.	N.D.	-	N.D.	N.D.	-	-	504933-001 605532-001
152	Protective Sheet		N.D.	N.D.	N.D.	N.D.	-	-	N.D.	N.D.	TQTA-ICP-00604233 TQTA-BR-0604023
153	Spacer 1		N.D.	N.D.	N.D.	N.D.	-	N.D.	-	-	18-0721 XGT-1000WR
154	Spacer 2		N.D.	N.D.	N.D.	N.D.	-	-	N.D.	N.D.	JP/2006/072042 TQ-BR-0705198

Note) 1. N.D. = Not detected
2. N.C. = Not content
3. Material Sheet = It is the result that checked the Material Deta sheet

Signature:

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