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DEVICE SPECIFICATION FOR  
**LAMP UNIT**  
 MODEL No. LQ0DDB0004

CUSTOMER'S APPROVAL

DATA \_\_\_\_\_

BY \_\_\_\_\_

PRESENTED

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## (1) Subject

This literature is applied for LQ0DDB0004 which is the lamp unit for 21cm (8.4") TFT-LCD module.

## (2) Introduction

This backlight unit is a service part for 21cm TFT-LCD module (LQ084V1DG21) of which backlight is designed to be replaceable and exactly same as originally installed one for above model.

## (3) Construction and Outline

The unit is composed of cold cathode fluorescent tubes, I/O wires (including connectors), and lamp holders.

\* Outline drawing of lamp unit : See Fig. 1.

## (4) Input / Output terminals

### 4-1) I/O terminal order

Table 1

| Pin No. | Symbol | i/o | Description                               |
|---------|--------|-----|---|
| 1       | VHIGH  | i   | Power supply for lamp (High voltage side) |
| 2       | NC     | -   | No connection                             |
| 3       | VLOW   | i   | Power supply for lamp (Low voltage side)  |

### 4-2) I/O connector

1) Installed socket housing ; BHR-03VS-1

2) Mating connector ; SM02(8.0)B-BHS

( produced by Japan Solderless Terminal )

## (5) Electrical characteristics

The characteristics of single lamp are shown in the following table 2.

Table 2

| Parameter              | Symbol | Min. | Typ.  | Max. | Unit  | Remarks           |
|------------------------|--------|------|-------|------|-------|-------------------|
| Lamp current           | $I_L$  | 2.0  | 6.0   | 6.5  | mArms | 【Note1】           |
| Lamp power consumption | $P_L$  | —    | 4.1   | —    | W     | 【Note2】           |
| Lamp frequency         | $F_L$  | 20   | 45    | 70   | KHz   |                   |
| Kick-off voltage       | $V_s$  | —    | —     | 1300 | Vrms  | $T_a=25^{\circ}C$ |
|                        |        | —    | —     | 1500 | Vrms  | $T_a=0^{\circ}C$  |
| Lamp life time         | $L_L$  | —    | 50000 | —    | hour  | 【Note3】           |

【Note1】 Available current range considering light-adjustment.

【Note2】 Calculated value for reference.

[Note3] Since lamp is consumable, the life time written above is referential value and it is not guaranteed in this specification sheet by SHARP.

Lamp life time is defined that it applied either 1 or 2 under this condition.

(Continuous turning on at  $T_a=25^{\circ}\text{C}$ ,  $\pm 3^{\circ}\text{C}$ ,  $I_L=6\text{mA rms}$ )

1. Brightness becomes 50% of the original value under standard condition.
2. Kick-off voltage at  $T_a=0^{\circ}\text{C}$  exceeds maximum value, 1500 Vrms.

## (6) Optical characteristics

Table 3

| Parameter    | Symbol | MIN.  | TYP.   | MAX.  | Unit            | Remarks            |
|--------------|--------|-------|--------|-------|-----------------|--------------------|
| Luminance    | $Y_L$  | -     | 28,000 | -     | $\text{cd/m}^2$ | $I_L=6.0\text{mA}$ |
| Chromaticity | X      | 0.278 | 0.288  | 0.298 |                 | (Tentative Value)  |
|              | Y      | 0.245 | 0.255  | 0.265 |                 |                    |

Above value is the characteristics of the lamp itself with the inverter

## (7) Environmental condition

Following temperature ranges indicate ambient condition to be guaranteed by SHARP for the LCD module LQ084V1DG21 which the lamp unit is incorporated.

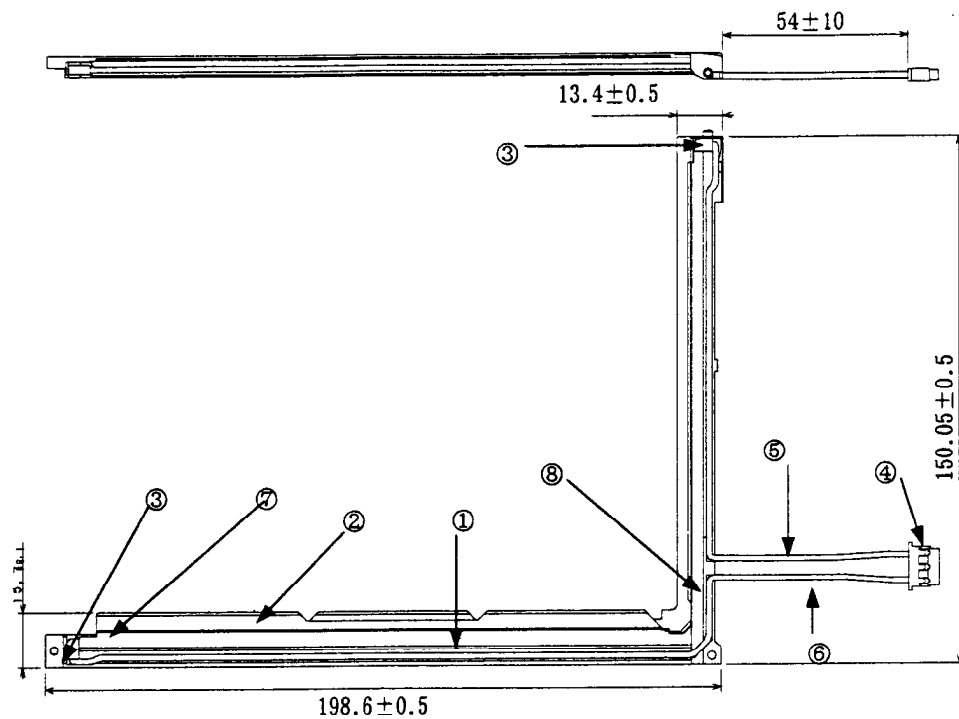
Table 4

| Item                                  | Symbol    | Temperature    | Unit               | Remarks |
|---------------------------------------|-----------|----------------|--------------------|---------|
| Storage temperature range             | $T_{stg}$ | $-25 \sim +70$ | $^{\circ}\text{C}$ | 【Note1】 |
| Operating temperature range (Ambient) | $T_{opa}$ | $0 \sim +55$   | $^{\circ}\text{C}$ |         |

【Note1】 Humidity: 95%RH Max. ( $T_a \leq 40^{\circ}\text{C}$ )

Maximum wet-bulb temperature at  $39^{\circ}\text{C}$  or less. ( $T_a > 40^{\circ}\text{C}$ )

No condensation.



| Pin NO. | Symbol | Color |
|---------|--------|-------|
| 1       | VHIGH  | Red   |
| 2       | NC     | —     |
| 3       | VLOW   | White |

| No. | Part unit                | Q'ty | Material etc.       |
|-----|--------------------------|------|---------------------|
| ①   | Lamp                     | 1    | φ2.6                |
| ②   | Lamp holder              | 1    | PC                  |
| ③   | Lamp rubber cushion      | 2    | Silicon rubber      |
| ④   | Connector                | 1    | JST BHR-03VS-1      |
| ⑤   | Wire (High voltage side) | 1    | UL10353AWG26(Red)   |
| ⑥   | Wire (Low voltage side)  | 1    | UL10353AWG26(White) |
| ⑦   | Reflection Film A        | 1    | PET(GR38W)          |
| ⑧   | Reflection Film B        | 1    | PET(GR38W)          |

Fig. 1. Outline drawing of Lamp unit

## (8) Procedure to exchange Lamp unit

Lamps for the LCD module can be worn out, so please replace them to new lamps when needed in accordance with the following. Please make sure that power is off before you replace them to prevent you from getting an electrical shock. Please insert the lamp with care while replacing. Please be careful for any dust goes in.

- ① Remove 2 screws which holds the Lamp unit. (refer to Fig. 2)
- ② Slide the Lamp unit to the "B" direction.
- ③ Remove the Lamp unit. ("C" direction)
- ④ Replace the new Lamp unit to the "D" direction and slide the unite to the "E" direction. (refer to Fig.3)
- ⑤ Tighten the 2 screws to fix the Lamp unit along the screw gap of hole. The screw torque should be maximum 1.6kgf · cm. If you tighten the screw over 1.6kgf.cm, the screw should be destroyed. Please be careful.
- ⑥ Please insert the lamp with care while replacing. Please be careful for any dust that goes in. Please make sure that the lamp unit is in all the way.

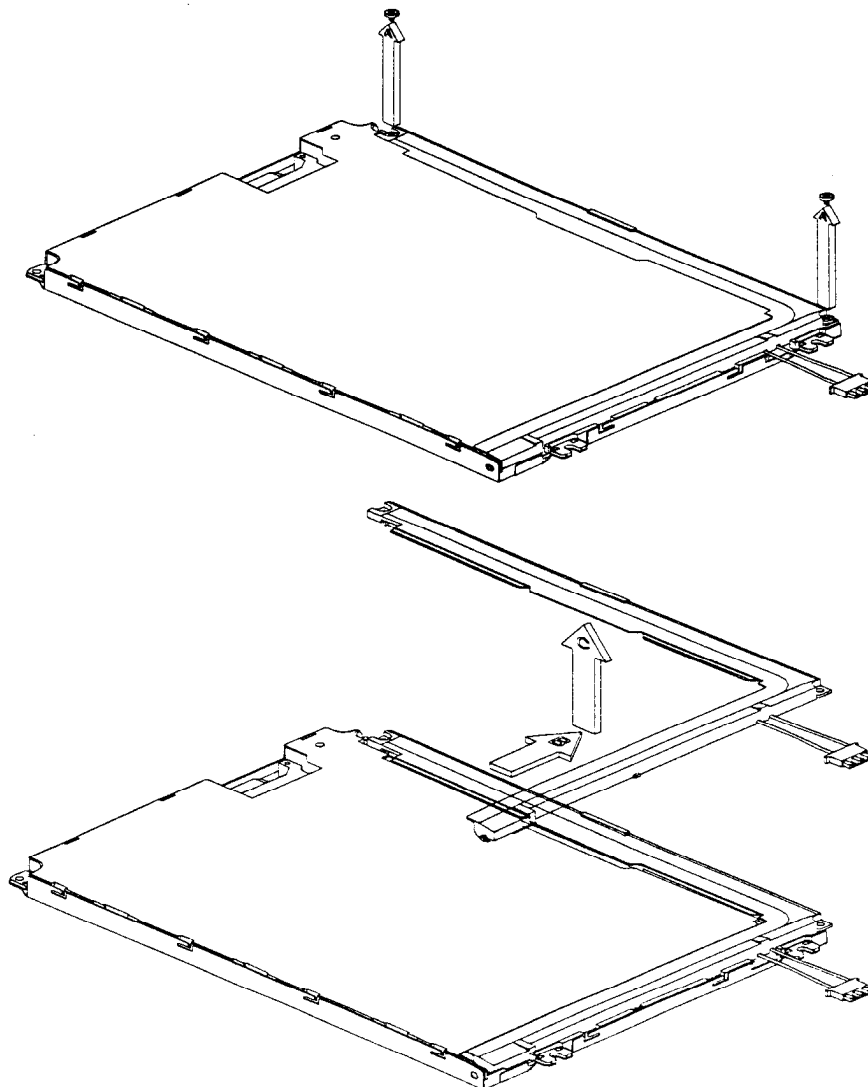


Fig.2. Procedure to exchange Lamp unit.

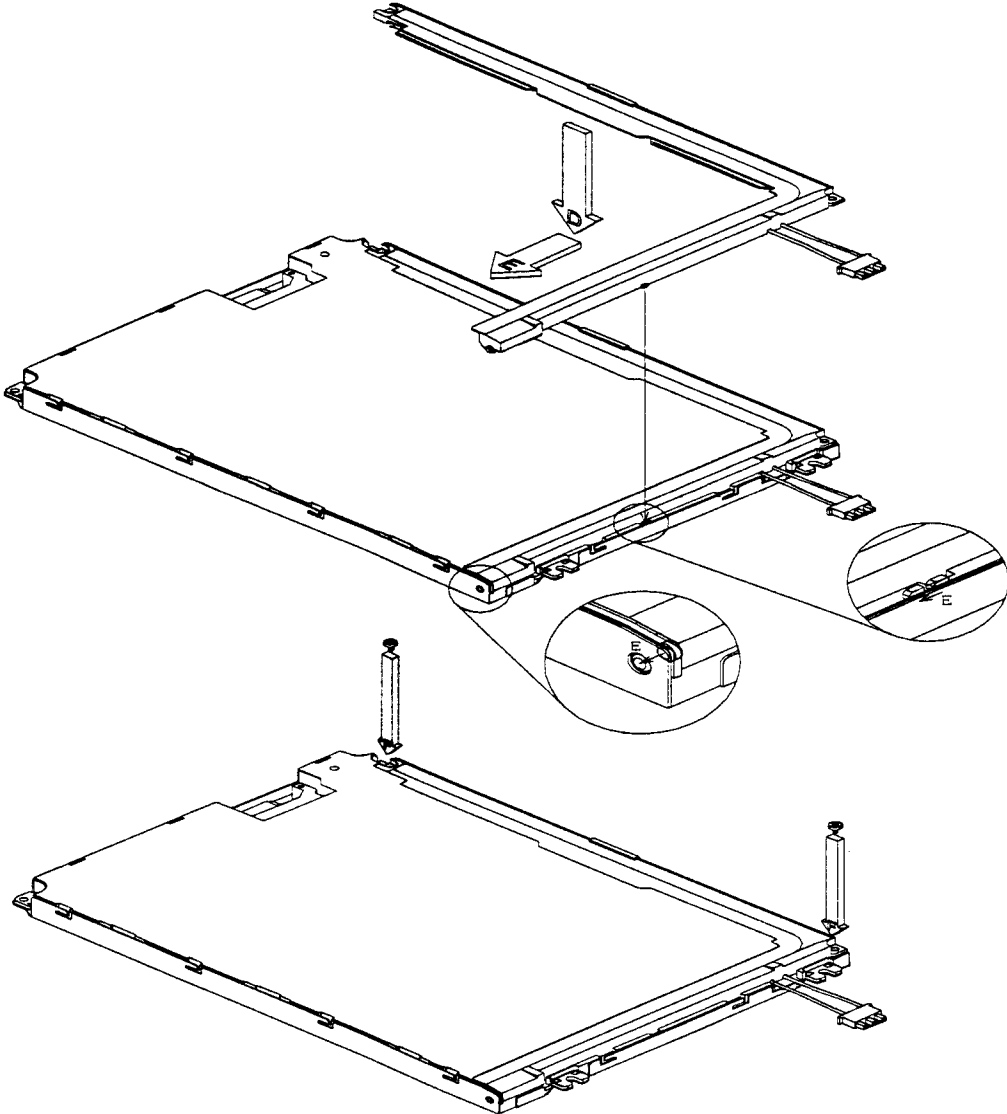


Fig. 3. Procedure to exchange Lamp unit

(9) Packing form

Packing form is shown in Fig.4 (Total Weight: 2,860 g)

(10) Others

10-1) It shall be informed before with attachment of the Quality/ reliability data if any changes of design, process, or management system occurs.

10-2) If any problems occurs in relation to the description in the present specifications or other relevant items, it shall be eliminated in all sincerity through discussion.

Pack the lamp unit in the air cap, and put it in the inner carton.

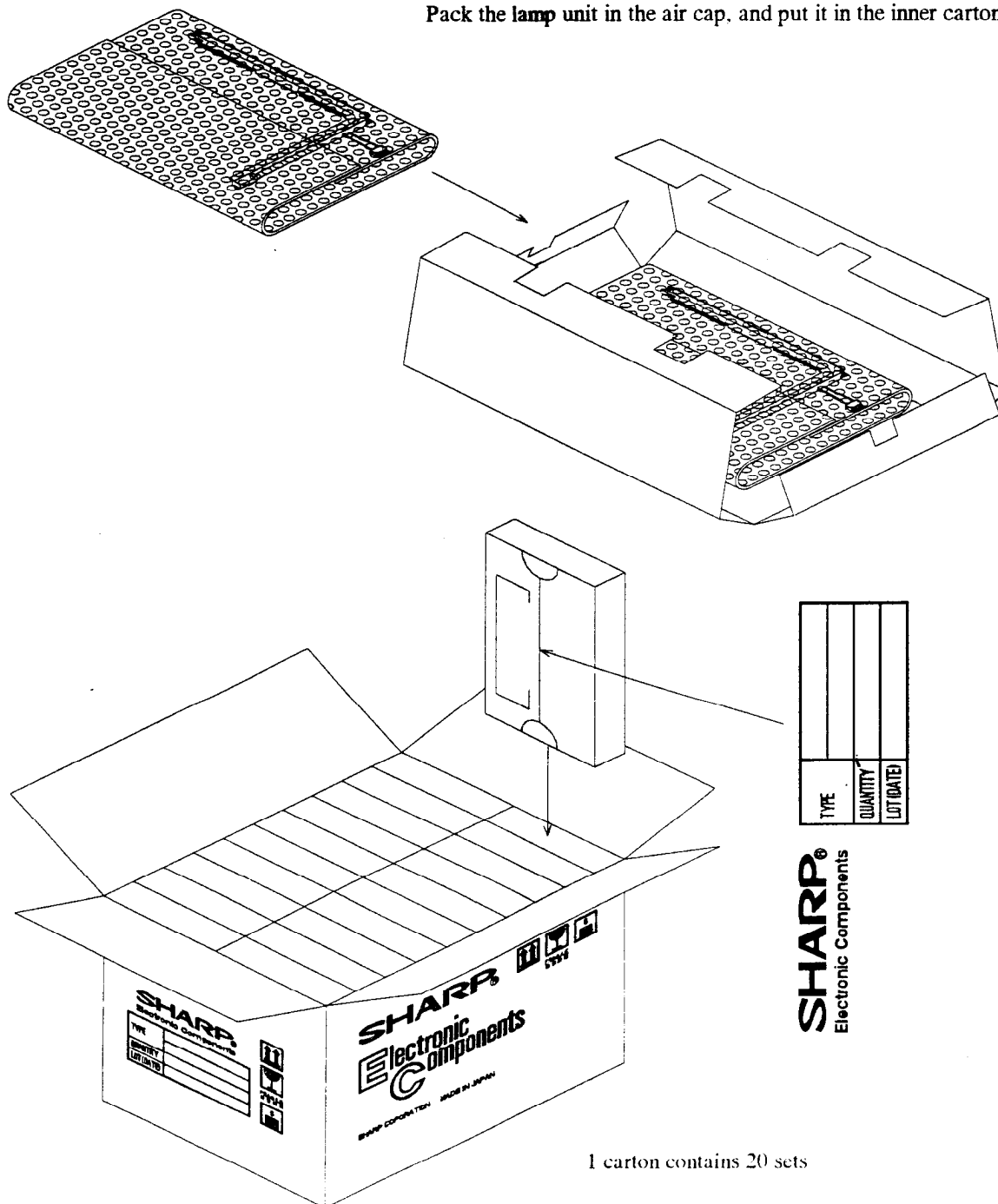


Fig.4.Packing form