OPTREX

To whom may concern. Issued on February 13th 2009

Product Change Notification

Thank you for your support of our TFT LCD.
Nowadays, the demand of high image quality is essential for industrial LCD fields. To meet the demands, we will release new models for 12.1SVGA to get better image quality. The new products have wider viewing angle, faster response time, higher contrast ratio and wider range operation temperature compared with existing models.
This letter is to inform you that we are changing our 12.1SVGA product as below.

Issue Date	Last Buy Date	Notification No.	Last Ship Date
13-Feb-2009	In August 2009	ECN002	TBD

Product:

New model	Existing model	Note
T-51512D121J-FW-A-AIN	T-51512D121J-FW-A-AB, T-51512D121J-FW-A-AFN	CMOS, Anti-glare model
T-51866D121J-FW-A-ACN	T-51866D121-J-FW-A-AA,	LVDS, Anti-glare model

New models are ready for production and shipment under 90 days lead time after your PO.

Description of Change:

- Contrast ratio, Luminance, response time and viewing angle are improved.
- Lamp unit, circuit board, controller IC and driver IC change
- Operation and storage temperature range are improved

(Colors and images will change. EMI characteristics may change due to above changes.)

Other characteristics such as outline dimension and connector pin assignment are compatible

Details are attachment.

Effect of Change:

There is no effect on quality, i.e. display performance, reliability, mechanical size,, electrical operation, and RoHS compliance.

MP Schedule:

- Production Starts from February 2009 with 90 days lead time basically.

T. Saka!

Items	Current		New
	T-51512D121J-FW-A-AB	T-51512D121J-FW-A-AFN	T-51512D121J-FW-A-AIN
(a) Overview			
Luminance	400	400	450
Viewing Angle (CR≥10)	-65~65°(H) –75~45°(V)	-65~65°(H) –75~45°(V)	-80~80°(H) –80~60°(V)
Module Mass	720	720	770
NCM	No	Yes	Yes
(b) Absolute Maximum Ratings			
Power Supply Voltage for LCD [VCC]	Min: 0, Max: 6.5	Min: –0.3, Max: 4.0	Min: –0.3, Max: 4.0
Logic Input Voltage [VI]	Max: 6.5	Max: 6.0	Max: 6.0
Lamp Frequency [FL]	Max: 80	Max: 100	Max: 100
Operation temperature (panel) [T_{op}]	-20~70	-20~70	-30~80
Operation temperature (Ambient) [T_{op}]	-20~70	-20~70	-30~80
Storage temperature [T_{stg}]	-20~80	-20~80	-30~80
(c) Electrical Characteristics			
Power Supply (5.0V powered)	Yes	Not supported	Not supported
Lamp Frequency [FL]	Max: 60	Max: 60	Max: 70
Starting Lamp Voltage [VS]	Min: 1290V, Ta=-20°C	Min: 1290V, Ta=-20°C	Min: 1320V, Ta=-30°C
(d) Interface Pin Connection			
HD	Yes	N/A	N/A
VD	Yes	N/A	N/A
Backlight-side connector(*1)	BHR-04VS-1(JST)	BHR-04VS-1(JST)	BHR-03(4-3)VS-1N(JST)
CTL(*1)	Pin No.4	Pin No.4	Pin No.3
(e) Interface Timing			
DENA	Front porch & Back porch are defined.	Blanking time, Frequency & Period are defined.	Blanking time, Frequency & Period are defined.
HD & VD	Yes	N/A	N/A
(f) Optical Characteristics (*2)			
Contrast ratio [CR]	Min: 350, Typ: 500	Min: 350, Typ: 500	Min: 400, Typ: 600
Luminance [Lw]	Min: 250, Typ: 400	Min: 250, Typ: 400	Min: 360, Typ: 450
Response Time [tr]	Typ: 10	Typ: 6	Typ: 4
Response Time [tf]	Typ: 30	Typ: 19	Typ: 12
Viewing Angle (CR≥10)	-65~65°(H) –75~45°(V)	-65~65°(H) –75~45°(V)	-80~80°(H) –80~60°(V)
(g) Reliability Test Condition			
High Temperature Operation	70°C, 240h	70°C, 240h	80°C, 240h
Low Temperature Operation	-20°C, 240h	-20°C, 240h	-30°C, 240h
Low Temperature Storage	-20°C, 240h	-20°C, 240h	-30°C, 240h
Thermal Shock (Non-Operation)	Between -20°C(1h) and 80°C(1h) 100cycle	Between -20°C(1h) and 80°C(1h) 100cycle	Between -30°C(1h) and 80°C(1h) 100cycle

(*1) Inverter-side connector is not required to change. (*2) Color coordination slightly changed.

Items	Current	New
	T-51866D121-J-FW-A-AA	T-51866D121J-FW-A-ACN
(a) Overview		
Luminance	350	450
Viewing Angle (CR≥10)	-65~65°(H) –75~45°(V)	-80~80°(H) –80~60°(V)
Module Mass	720	770
(b) Absolute Maximum Ratings		
Operation temperature (panel) [T_{op}]	Min: -20°C, Max: 70°C	Min: -30°C, Max: 80°C
Operation temperature (Ambient) [T_{op}]	Min: -20°C, Max: 70°C	Min: -30°C, Max: 80°C
Storage temperature [T_{stg}]	Min: -20°C, Max: 80°C	Min: -30°C, Max: 80°C
(c) Electrical Characteristics		
Power Supply Currents for LCD [ICC]	Typ: 300, Max: 450	Typ: 370, Max: 550
Lamp Frequency [FL]	Max: 60	Max: 70
Logic Input Voltage (High) [VIH]	Min: 2.0	Min: 2.4
Starting Lamp Voltage [VS]	Min: 1290V, Ta=-20°C	Min: 1320V, Ta=-30°C
(d) Interface Pin Connection		
Backlight-side connector(*1)	BHR-04VS-1(JST)	BHR-03(4-3)VS-1N(JST)
CTL(*1)	Pin No.4	Pin No.3
(e) Optical Characteristics (*2)		
Contrast ratio [Cr]	Min: 350, Typ: 500	Min: 400, Typ: 600
Luminance [Lw]	Min: 250, Typ: 350	Min: 360, Typ: 450
Response Time [tr]	Typ: 10	Typ: 4
Response Time [tf]	Typ: 30	Typ: 12
Viewing Angle (CR≥10)	-65~65°(H) –75~45°(V)	-80~80°(H) –80~60°(V)
(f) Reliability Test Condition		
High Temperature Operation	70°C, 240h	80°C, 240h
Low Temperature Operation	-20°C, 240h	-30°C, 240h
Low Temperature Storage	-20°C, 240h	-30°C, 240h
Thermal Shock (Non-Operation)	Between -20°C(1h) and 80°C(1h) 100cycle	Between -30°C(1h) and 80°C(1h) 100cycle

(*1) Inverter-side connector is not required to change. (*2) Color coordination slightly changed.

Optrex Corporation

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