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B3 工控产品 (DCE116FHB-N85-300K) Product Specification Rev.P1

SUPPLIER	HEFEI DCE Optoelectronics Technology CO., LTD
FG-Code	DCE116FHB-N85-300K-3RA0

ITEM	BUYER SIGNATURE	DATE
_____	_____	_____
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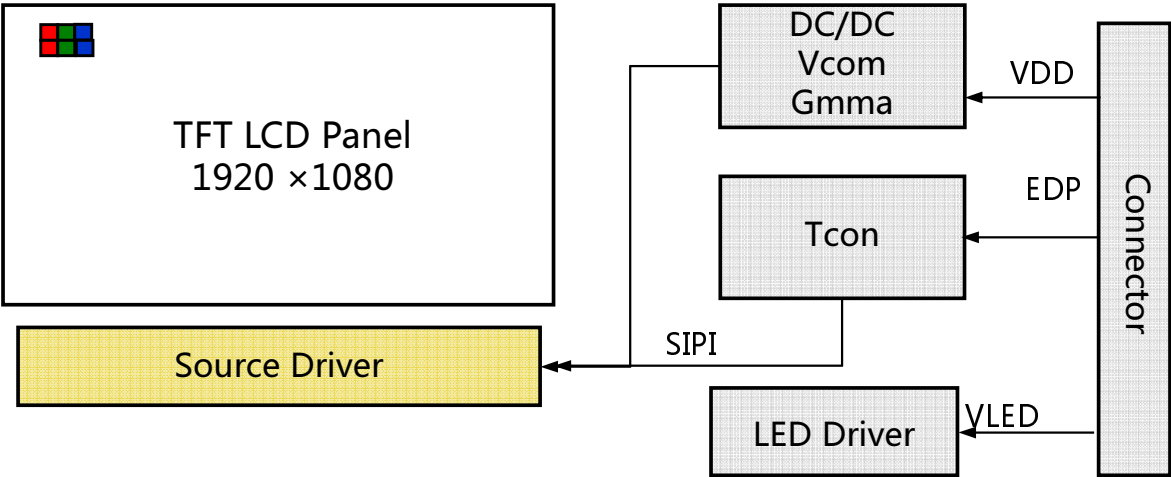
ITEM	SUPPLIER SIGNATURE	DATE
Prepared	<u>zhang jinbo</u>	<u>2024.06.18</u>
Reviewed	_____	_____
Approved	_____	_____

	PRODUCT GROUP	REV	ISSUE DATE
	TFT LCD PRODUCT	P1	2024.06.18

1.0 GENERAL DESCRIPTION

1.0.1 Introduction

DCE116FHB-N85-300K is a color active matrix TFT LCD FOB using amorphous silicon TFT's (Thin Film Transistors) as an active switching devices. This FOB has a 11.60 inch diagonally measured active area with FHD resolutions (1920 horizontal by 1080 vertical pixel array). Each pixel is divided into RED, GREEN, BLUE dots which are arranged in vertical stripe and this module can display 16.7M colors.



1.0.2 Features

- 2 lane eDP Interface with 2.7Gbps Link Rates
- 6-bit (Hi-FRC) color depth, display 16. 7M colors
- DE (Data Enable) only
- Reverse Type
- RoHS Compliant

1.0.3 Application

- HMI (Human Machine Interface)

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1.0.4 General Specification

< Table 1. General Specifications >

Parameter	Specification	Unit	Remarks
Active area	256.320 (H) × 144.180(V)	mm	
Number of pixels	1920(H) × 1080(V)	Pixels	
Pixel pitch	0.1335(H) × 0.1335 (V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	16.7M	Colors	6bit+FRC
Display mode	Normally Black		
Dimensional outline	260.32 (H) X 162.33 (V)	mm	Typ.
Weight	100.5	g	Typ.
Surface treatment	Haze 25%, 3H		
Back-light	Not involved		

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2.0 ABSOLUTE MAXIMUM RATINGS

The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit. The operational and non-operational maximum voltage and current values are listed in Table 2.

< Table 2. Environment Absolute Maximum Ratings> [Ta =25±2 °C]

Parameter	Symbol	Min.	Max.	Unit	Remarks
LCD Power Supply Voltage	VDD	0.3	3.6	V	
Back-light Power Supply Voltage	HV _{DDOUT}	2.7	24	V	
Back-light Power Supply Current	Iledout	6	25	mA	Typ 20
Back-light LED Reverse Voltage	V _R	-	-	V	
Operating Temperature	T _{OP}	-20	70	°C	
Storage Temperature	T _{ST}	-30	80	°C	

- Note:
- 1. These range above is maximum value not the actual operating temperature . Actual Operating temperature is no more than 40°C and temperature refers to the LCM surface temperature ;
 - 2.DCE is not responsible for product problems beyond the use conditions.
 - 3.When the ambient temperature is T °C, the surface temperature of Panel can not exceed (T+15)°C.

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3.0 ELECTRICAL SPECIFICATIONS

3.0.1 TFT LCD FOB

< Table 3. LCD FOB Electrical Specifications >

[Ta =25±2 °C]

Parameter	Symbol	Values			Unit	Notes
		Min	Typ	Max		
Power Supply Input Voltage	V _{DD}	3.0	3.3	3.6	V	Note 1
Permissible Input Ripple Voltage	V _{RF}	10%*V _{DD}	-	10%*V _{DD}	mV	Note 2
Power Supply Current	I _{DD}	-	200	508	mA	Note 1
Power Supply Inrush Current	I _{nrush}	-	-	1.5	A	Note1
Positive-going Input Threshold Voltage	V _{IT+}	-	-	+100	mV	V _{com} = 4.6V typ.
Negative-going Input Threshold Voltage	V _{IT-}	-100	-	-	mV	
Differential input common mode voltage	V _{com}	-	4.6	-	V	V _{IH} =100mV, V _{IL} =-100mV
Power Consumption	P _D	-	0.66	1.57	W	Note 1

Notes : 1. The supply voltage is measured and specified at the interface connector of FOB.

The current draw and power consumption specified is for 3.3V at 25 °C

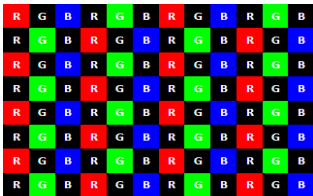
Max value at skip subPixel Pattern

a) Typ : Colorbar pattern

b) Max : skip subPixel(L127)



(a)



(b)

2. Input voltage range:3.0~3.6V.Test condition: Oscilloscope bandwidth 20MHz, AC coupling

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3.0.2 Back-light Unit

< Table 4. LED Driving guideline specifications >

Ta=25+/-2°C

Parameter		Min.	Typ.	Max.	Unit	Remarks	
Input Supply Voltage		V _{in}	5	12	21	V	
Permissible Input Ripple Voltage		V _{RF}	10% *VIN	-	10% *VIN	mV	
Rush Current for LED Driver		-	-	-	2	A	
Power supply voltage for Back light		V _{LEDO UT}	5	24	37	V	
Power supply Current for Back light		I _{LEDO UT}	6	20	25	mA	
Power supply for Back light		P _{LED}	0.8	3.3	5.55	W	Note 1
EN Control Level	Backlight on	V _{ENH}	1.2	-	5.0	V	EN logic high voltage
	Backlight off	V _{ENL}	0	-	0.6	V	EN logic low voltage
PWM Control Level	PWM High Level	V _{PML}	1.2	-	5.0	V	
	PWM Low Level	V _{PML}	0	-	0.6	V	
PWM Control Frequency		F _{PWM}	200	-	2000	Hz	
Duty Ratio		-	1	-	100	%	Note 2

Notes : 1. Calculator Value for reference $CH \times I_{LEDO UT} \times V_{LEDO UT} / \text{driver efficiency} = P_{LED}$

2. 1% duty cycle is achievable with a dimming frequency less than 1KHz.