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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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User's Guide

NHD-3.5-320240YF-ATXL#-T

LCM

(Liquid Crystal Display Module)

For product support, contact

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Revision Record

Item	Date	Revision Content
V0	2006/08/11	First issue

LCD Module Specification

General Specification

Item	Standard	Unit
No. of Pixels	320(RGB)*240	DOTS
Outline Size	76.9*63.8*4.4	mm
Viewing Area	72.88(W)*55.4(H)	mm
Active Area	70.08(W)*52.56(H)	mm
Pixel Size	0.073(W)*0.212(H)	mm
Pixel Pitch	0.219(W)*0.219(H)	mm
Viewing Direction	12 O'clock	--
LCD Type	TFT、Positive、Transmissive	--
Controller	HX8238	--
LCM	COG	--

LCD Module Specification

Absolute Maximum Ratings

Item		Symbol	Min.	Typ	Max.	Unit
Operating Temp		T _{OP}	-20	-	+70	°C
Storage Temp		T _{ST}	-30	-	+80	°C
Input Voltage		V _I	-0.3	-	+5.0	V
Power Supply for Logic	HX8238 X8615	V _{DD}	-0.3	2.2	+2.7	V

Electrical Characteristic

Item	Symbol	Min.	Typ	Max.	Unit
Power Supply for Logic	V _{DD} -V _{SS}	1.8	--	2.5	V
TFT Driving voltage	V _{GH}	--	15.0	--	V
	V _{GL}		-10		
TFT Common Voltage	V _{COMH}	2.5		4	V
	V _{COML}	-1.5		0	
Input High Voltage	V _{IH}	0.7V _{dd}	--	V _{dd}	V
Input Low Voltage	V _{IL}	0	--	0.3V _{dd}	V
Output High Voltage	V _{OH}	0.8V _{dd}	--	V _{dd}	V
Output Low Voltage	V _{OL}	0	--	0.2V _{dd}	V
Current Consumption	I _{DD}	--	--	13	mA

Electric-Optical characteristics(FSTN)

Item	Symbol	Condition	Min.	Typ	Max.	Unit
Viewing angle(V)	θ	CR ≥ 2	15	--	35	Deg
Viewing angle(H)	Ψ	CR ≥ 2	45	--	45	Deg
Contrast	Cr	--	150	200	--	--
Response Time	t _r	T _a =25°C	--	15	30	ms
	t _d	T _a =25°C	--	35	50	ms

LCD Module Specification

Interface Pin Assignment

Pin No.	Pin Out	Signal	Description
1,2	VBL-	I	Backlight power connect with ground
3,4	VBL+	I	Backlight power supply +19.6V
5,6	NC	NC	No connection
7	POL	O	Polarity for select for the line inversion control signal
8	RESET	I	Reset
9	SPENA	I	Serial Port Data Enable Signal. Normally pull high
10	SPCLK	I	Serial Port Clock. Normally pull high
11	SPDAT	I/O	Data signal of serial connection
12	B0	I	Data bus of parallel connection B
13	B1	I	Data bus of parallel connection B
14	B2	I	Data bus of parallel connection B
15	B3	I	Data bus of parallel connection B
16	B4	I	Data bus of parallel connection B
17	B5	I	Data bus of parallel connection B
18	B6	I	Data bus of parallel connection B
19	B7	I	Data bus of parallel connection B
20	G0	I	Data bus of parallel connection G
21	G1	I	Data bus of parallel connection G
22	G2	I	Data bus of parallel connection G
23	G3	I	Data bus of parallel connection G
24	G4	I	Data bus of parallel connection G
25	G5	I	Data bus of parallel connection G
26	G6	I	Data bus of parallel connection G
27	G7	I	Data bus of parallel connection G
28	R0	I	Data bus of parallel connection R
29	R1	I	Data bus of parallel connection R
30	R2	I	Data bus of parallel connection R
31	R3	I	Data bus of parallel connection R
32	R4	I	Data bus of parallel connection R
33	R5	I	Data bus of parallel connection R
34	R6	I	Data bus of parallel connection R
35	R7	I	Data bus of parallel connection R
36	HSYNC	O	OSD Hsync output signal
37	VSYNC	O	OSD Vsync output signal
38	DCLK	O	OSD Clock Signal
39,40	AVDD	I	Analog power supply (2.5~3.6V)
41,42	DVDD	I	Digital power supply (1.8~2.5V)

LCD Module Specification

43,44	NC		No connection
45	VGL	I	Driving Voltage
46	NC		No connection
47	VGH	I	Driving Voltage
48,49,50	NC		No connection
51	VCOM	I	Driving Voltage
52	ENB	I	Data enable signal
53,54	GND	I	Ground

