

T0240A01

SPECIFICATION FOR **TFT LCD MODULE**

MODEL NO: **T0240A01**

CUSTOMER:
(2.4 INCH SINGLE TFT MODULE)
This module uses ROHS material

Customer Approval:

APPROVED BY
DATE:

ISSUED DATE: 2008/06/17

PREPARED BY	CHECKED BY	APPROVED BY

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1. Introduction

1.1 Scope of application

LCD specification: Duty 1/320, Dots 240xRGBx320.

As to basic specification of the driver IC, refer to the IC (ILI9325) specification and data book.

All material & processing of the LCD module should be Lead Free.

TFT features:

Single display structure (thickness Max3.0mm):

2.41 TFT MODULE+ FPC+BL+TP;

Transmissive Negative Type LCD

240 dot-segment and 320 dot-common outputs;

FULL 262k Color TFT LCD ;

One bare chip with gold bump (COG) TECH;

16BITS 80 parallel series interface;

1.3 Applications:

Mobile phone

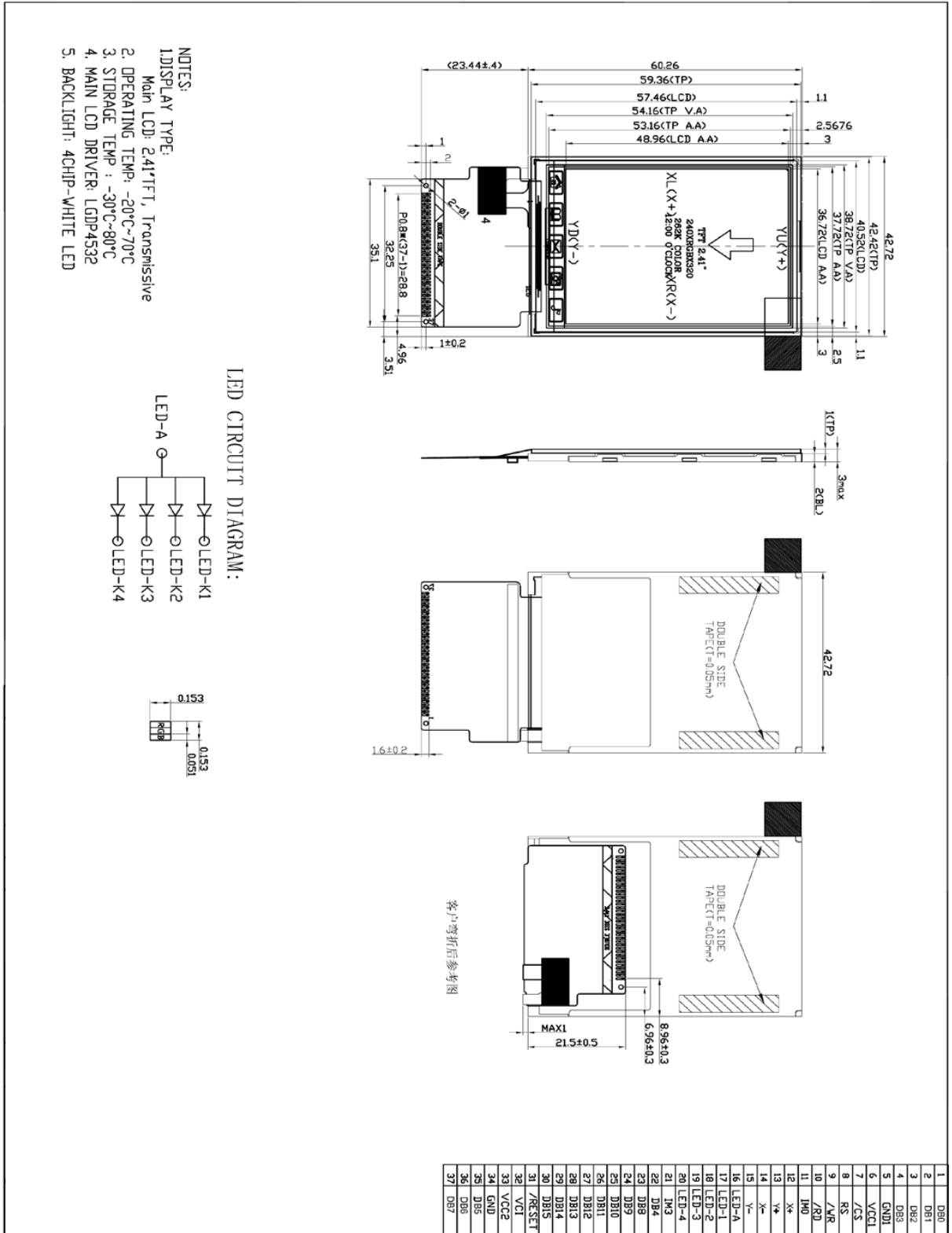
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2. General specification

<i>ITEM</i>	<i>Standard value</i>	<i>UNIT</i>
LCD type	TFT Negative Transmissive	---
Number of Dots	240(RGB)*320	Dots
Dot Pitch(W*H)	0.153*0.153	mm
Active Area	36.72*48.96	mm
Glass Area(W*H)	40.52*57.46	mm
LCD duty	1/240	
LCD bias	/	
Viewing Direction	12 O'clock	
Controll IC	ILI9325	
Module Size(W*H*T)	42.72*60.26*3.0	mm
APPROX. WEIGHT	TBD	g
Back Light	White LED	

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3. Mechanical drawing



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4. Absolute Maximum Ratings

ITEM	SYMBOL	MIN	MAX	UNITS	NOTE
Power Supply Voltage (1)	VDD	-0.3	+4.0	V	
Power Supply Voltage (2)	VGH	+9.0	+16.5	V	
Power Supply Voltage (3)	VGL	-16.5	-4.0	V	
Input Voltage	VI	-0.3	VDD+0.3	V	
Operating Temperature	Topr	-20	70	°C	
Storage Temperature	Tstg	-30	80		

Notes:

1. If the LSI is used above these absolute maximum ratings, it may become permanently damaged. Using the LSI within the following electrical characteristics limit is strongly recommended for normal operation. If these electrical characteristic conditions are also exceeded, the LSI will malfunction and cause poor reliability.
2. VDD, GND must be maintained
3. DC characteristics and AC characteristics of shipping chips and shipping wafer are guaranteed at 85°C.

5. Typical Electrical Characteristics

ITEM	SYMBOL		CONDITIONS	MIN	TYP	MAX	UNITS
Power-supply voltage For LCD	TFT LCD	VGH	At 25°C	9.0	—	16.5	V
		VGL		-16.5	—	-4	
	VDD-GND			-	2.8	3.3	
Input voltage for LCD	VIH		“High” level	0.8VDD	—	VDD	
	VIL		“Low” level	GND	—	0.2VDD	
Supply current for LCD	VDD		VDD=2.8V	—	—	14	mA

Note 1: The supply voltage for VLCD has to be adjusted by software.

6. B/L Characteristics

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	CONDITION
Lamp Voltage	V _L	—	3.2	3.3	V	Each ILED=15mA
Back Light	—	3200	—	—	Cd/m ²	

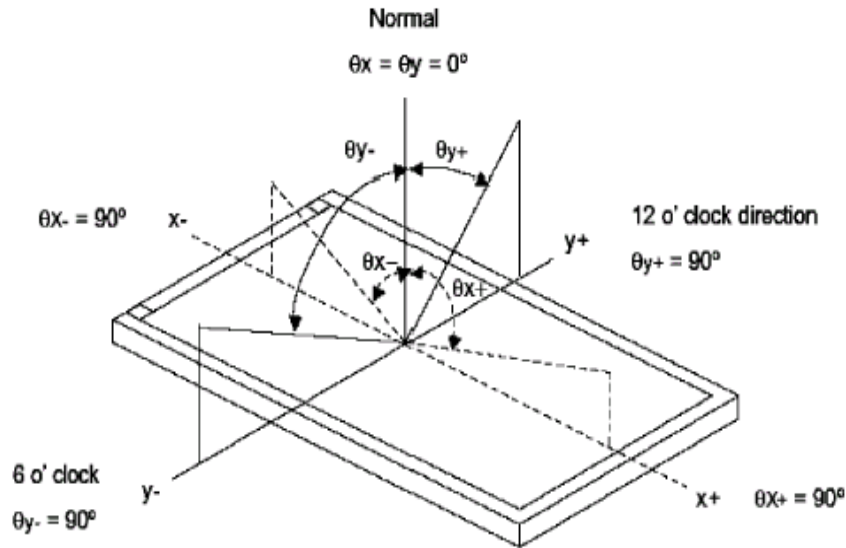
- ※ LEDs in 4- parallel of B/L module
- ※ PWM control.

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7. Optical Characteristics

ITEM	SYMBOL	CONDITIONS	SPECIFICATIONS			UNIT	NOTE	
			MIN.	TYP.	MAX			
Brightness	B	Viewing normal angle	150	220	--	cd/m ²		
Contrast Ratio	CR		100	120	--	--		
Response Time	Tr+Tf		--	25	40	ms		
CIE Color coordinate	Red		X _R	--	0.593			
			Y _R		0.333			
	Green		X _G	--	0.314			
			Y _G		0.545			
	Blue		X _B	--	0.138			
			Y _B		0.160			
White	X _W		--	0.314				
	Y _W		0.345					
Viewing Angle	Hor.	θ_{x+}	40	--	--	Deg.		
		θ_{x-}	40	--	--			
	Ver.	θ_{y+}	35	--	--			
		θ_{y-}	15					
Uniformity	Un		80	85		%		

Note 1 : Definition of Viewing Angle θ_x and θ_y :

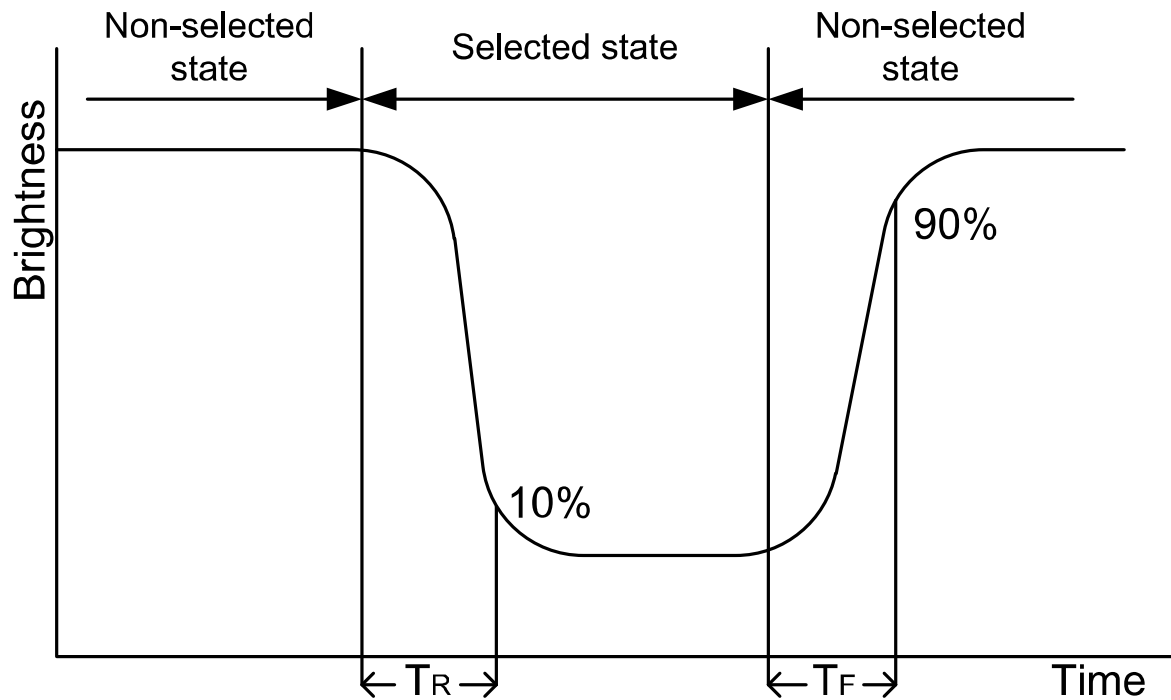


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Note 2: Definition of contrast ratio CR:

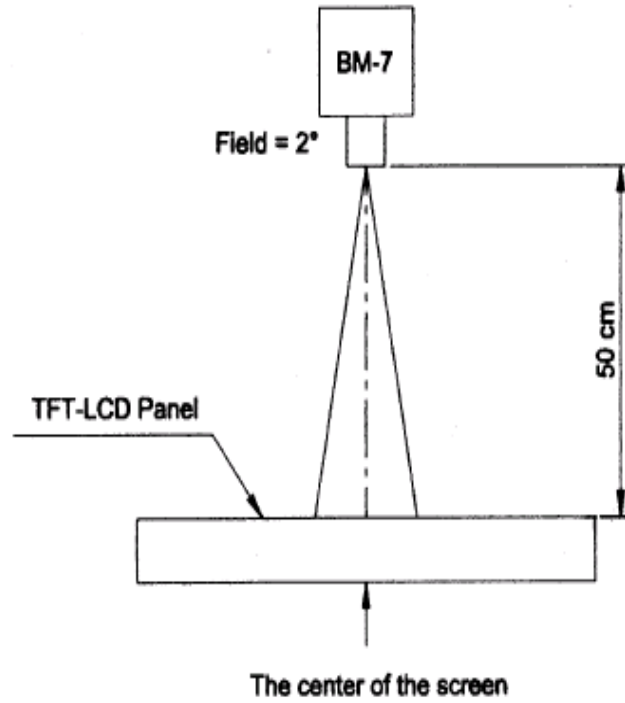
$$CR = \frac{\text{Brightness of non-selected dots (white)}}{\text{Brightness of selected dots (black)}}$$

Note 3: Definition of response time (T_R , T_F)

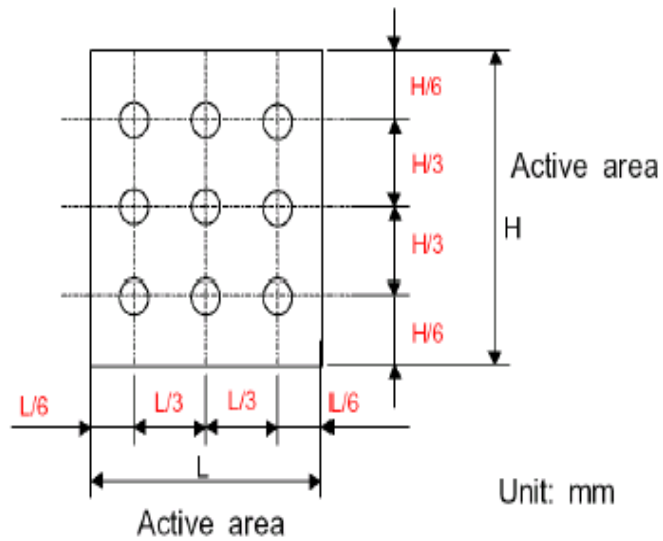


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The brightness test equipment setup
20mA Field=2° (As measuring "black" image, field=2° is the best testing condition)



Note 4 :



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8. Interface Pin Function

NO.	SYMBOL	Description	I/O
1	DB0	Data Bus	I/O
2	DB1	Data Bus	I/O
3	DB2	Data Bus	I/O
4	DB3	Data Bus	I/O
5	GND1	GND	POWER SUPPLY
6	VCC1	A Power supply for the internal logic circuit	POWER SUPPLY
7	/CS	Chip selection input pin: Active "L"	
8	RS	LCD register selector	I
9	/WR	Write	I
10	/RD	Read	I
11	NC	—	I
12	X+	Touch panel interface	—
13	Y+	Touch panel interface	—
14	X-	Touch panel interface	—
15	Y-	Touch panel interface	—
16	LEDA	Backlight positive input pin	—
17	LEDK1	Backlight negative input pin	—
18	LEDK2	Backlight negative input pin	—
19	LEDK3	Backlight negative input pin	—
20	LEDK4	Backlight negative input pin	—
21	NC	—	I
22	DB4	Data Bus	I/O
23	DB8	Data Bus	I/O
24	DB9	Data Bus	I/O
25	DB10	Data Bus	I/O
26	DB11	Data Bus	I/O
27	DB12	Data Bus	I/O
28	DB13	Data Bus	I/O
29	DB14	Data Bus	I/O
30	DB15	Data Bus	I/O
31	/RESET	Reset signal: Active "L"	I
32	VCI	A Power supply for step-up circuit and power supply circuit	POWER SUPPLY
33	VCC2	A Power supply for the internal logic circuit	POWER SUPPLY
34	GND	GND	POWER SUPPLY
35	DB5	Data Bus	I/O
36	DB6	Data Bus	I/O
37	DB7	Data Bus	I/O

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9. Block Diagram

