

MDT101001	1280x800	LVDS Interface	TFT Module
Specification			
Version: 1		Date: 05/03/2023	
Revision			
1	03/03/2023	First issue	

Display Features			
Display Size	10.10"		
Resolution	1280x800		
Orientation	Landscape		
Appearance	RGB		
Logic Voltage	3.3V		
Interface	LVDS		
Brightness	1060 cd/m ²		
Touchscreen	---		
Module Size	229.70 x 149.15 x 5.00 mm		
Operating Temperature	-20°C ~ +70°C	Created By	Checked By
Pinout	30 way connector	CL	TSB
Pitch	1.00 mm	Box Quantity	Weight / Display
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* - For full design functionality, please use this specification in conjunction with the EK79202B display driver specification.(Provided Separately)

Display Accessories	
Part Number	Description
MDIB-CC1	Interconnect board for standard pitch pinouts to fine pitch wires. Providing pinouts for 2.54 pinout. 1.27, 1, 0.845, 0.8, 0.7, 0.65, 0.62, 0.6, 0.5 & 0.3 pads.

Optional Variants	
Appearances	Voltage



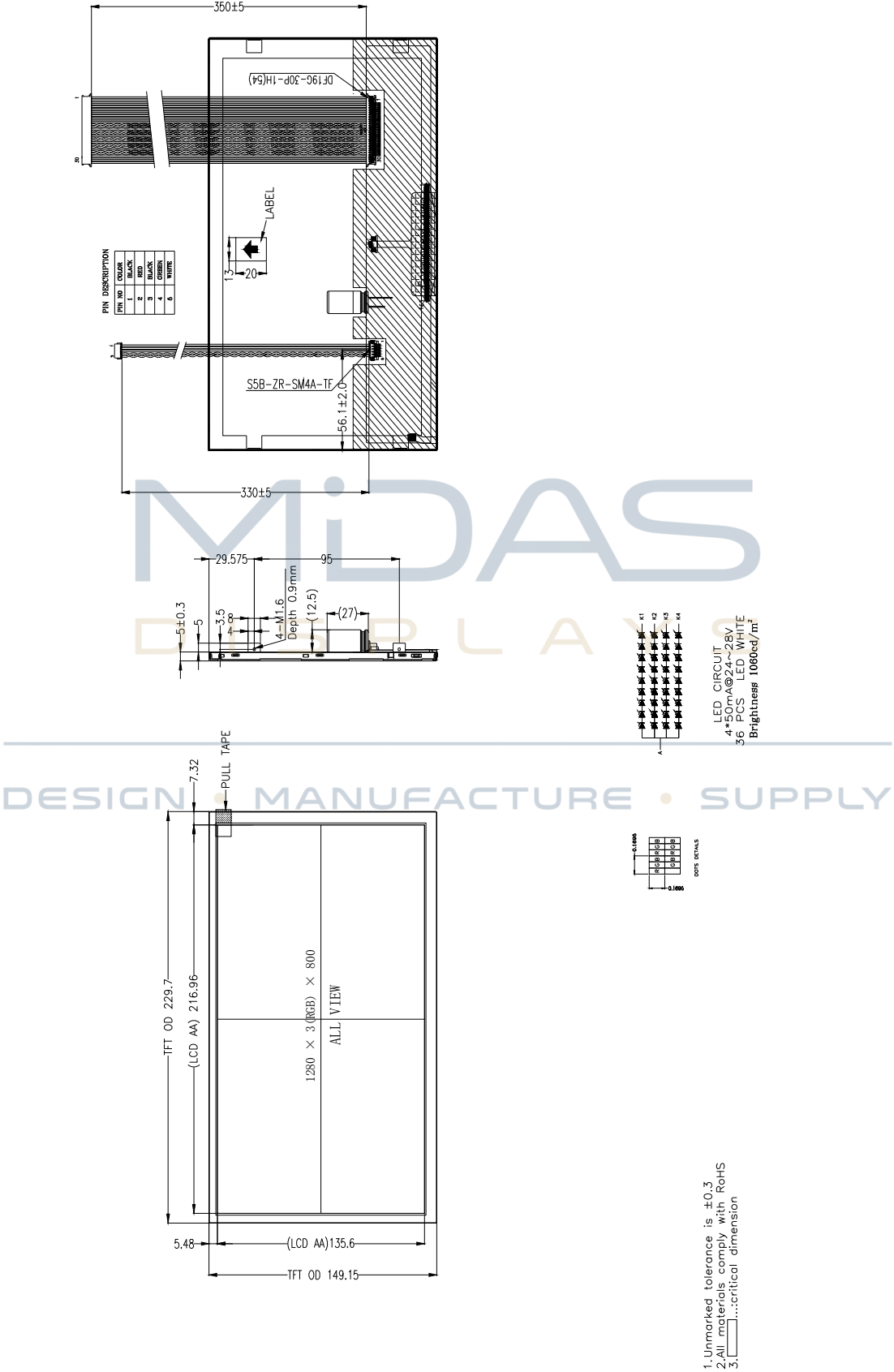
1. GENERAL SPECIFICATIONS

ITEM	STANDARD VALUE	UNIT
LCD SIZE	10.1	inch
LCD TYPE	TFT/TRANSMISSIVE	
MODULE SIZE	229.7*149.15*5.00	mm
ACTIVE SIZE	216.96*135.60	mm
PIXEL PITCH	0.1695*0.1695	mm
NUMBER OF DOTS	1280*800	
DRIVER IC	EK79202B	
INTERFACE TYPE	LVDS	
RECOMMEND VIEWING DIRECTION	ALL	o'clock
GRAY SCALE INVERSION DIRECTION	--	o'clock
BACKLIGHT TYPE	36-CHIP WHITE LED	
TOUCH PANEL TYPE	WITHOUT	

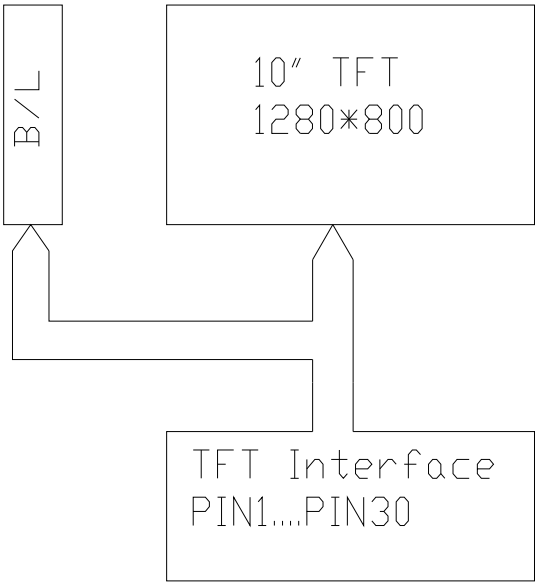
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2. EXTERNAL DIMENSIONS



3. BLOCK DIAGRAM



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4. PIN ASSIGNMENT

PIN NO.	SYMBOL	DESCRIPTION
1	12V	LED power
2	12V	LED power
3	12V	LED power
4	12V	LED power
5	ENLED	Enable pin
6	Dimming	Backlight Adjust
7	GND	Ground
8	GND	Ground
9	VCC	Power supply:+3.3V
10	VCC	Power supply:+3.3V
11	GND	Ground
12	GND	Ground
13	RX0-	Negative transmission data of pixel 0
14	RX0+	Positive transmission data of pixel 0
15	GND	Ground
16	RX1-	Negative transmission data of pixel 1
17	RX1+	Positive transmission data of pixel 1
18	GND	Ground
19	RX2-	Negative transmission data of pixel 2
20	RX2+	Positive transmission data of pixel 2
21	GND	Ground
22	RXCLK-	Negative of clock
23	RXCLK+	Positive of clock
24	GND	Ground
25	RX3-	Negative transmission data of pixel 3
26	RX3+	Positive transmission data of pixel 3
27	GND	Ground
28	SEL6/8	LVDS 6/8 bit select function control Low:6 bit Hige:8 bit
29	GND	Ground
30	GND	Ground

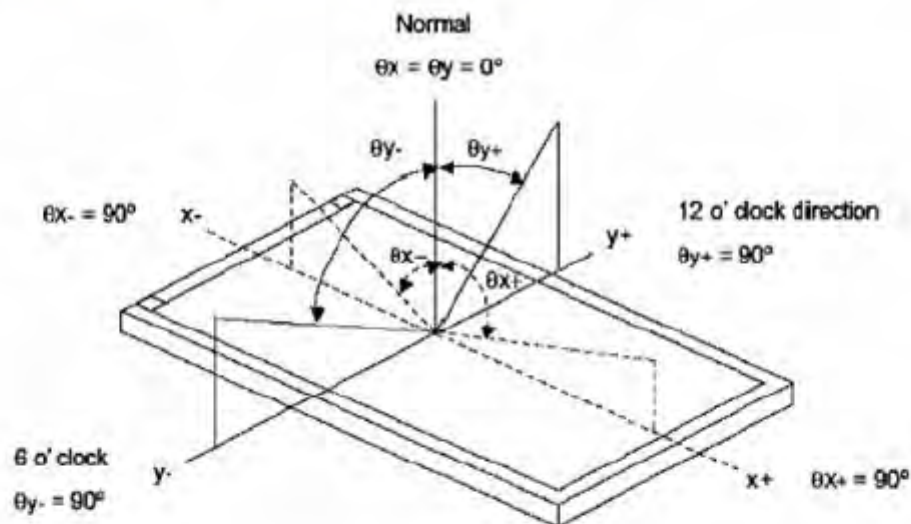


5. OPTICAL CHARACTERISTICS

ITEM		SYMBOL	CONDITIONS	SPECIFICATIONS			UNIT	NOTE
				MIN	TYP.	MAX		
Luminance		L			1060		cd/m ²	
Contrast ratio		CR	$\theta = 0^\circ$	700	900			
Response time		Ton+ Toff	25℃		30		ms	
CIE COLOUR COORDINATE	RED	XR	VIEWING NORMAL ANGLE	-0.02	0.618	+0.02		
		YR			0.328			
	GREEN	XG			0.335			
		YG			0.542			
	BLUE	XB			0.136			
		YB			0.145			
	WHITE	XW			0.322			
		YW			0.344			
VIEWING ANGLE	Hor.	θ_{x+}	CR $\geq$ 10		80		Degree	
		θ_{x-}			80			
	Ver.	θ_{y+}			80			
		θ_{y-}			80			
Uniformity	Un			70	75		%	



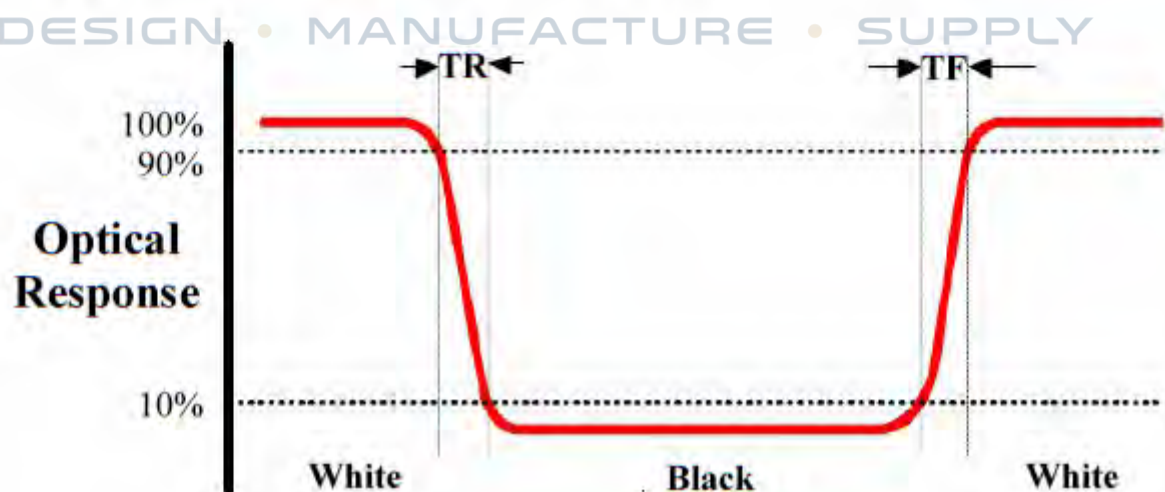
Note 1: Definition of Viewing Angle θ_x and θ_y :



Note 2: Definition of contrast ratio CR:

$$CR = \frac{\text{Luminance of white state}}{\text{Luminance of black state}}$$

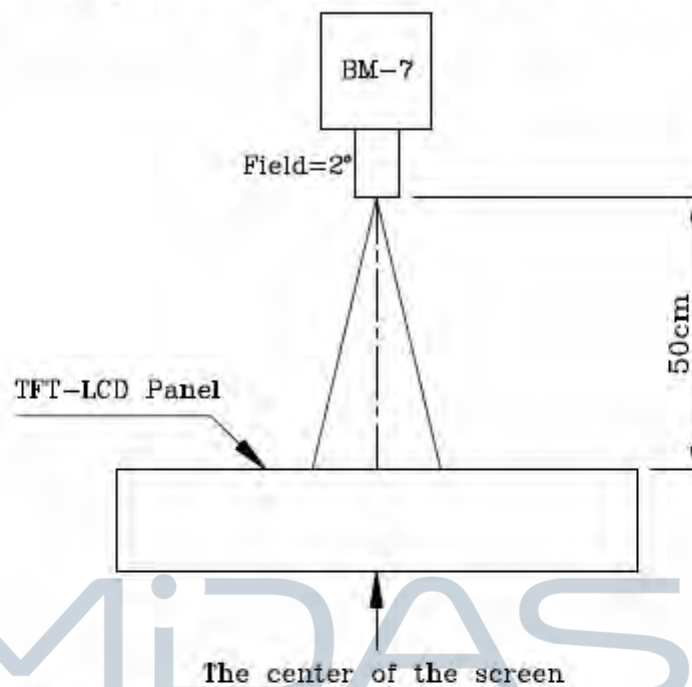
Note 3: Definition of Response Time(T_r , T_f)



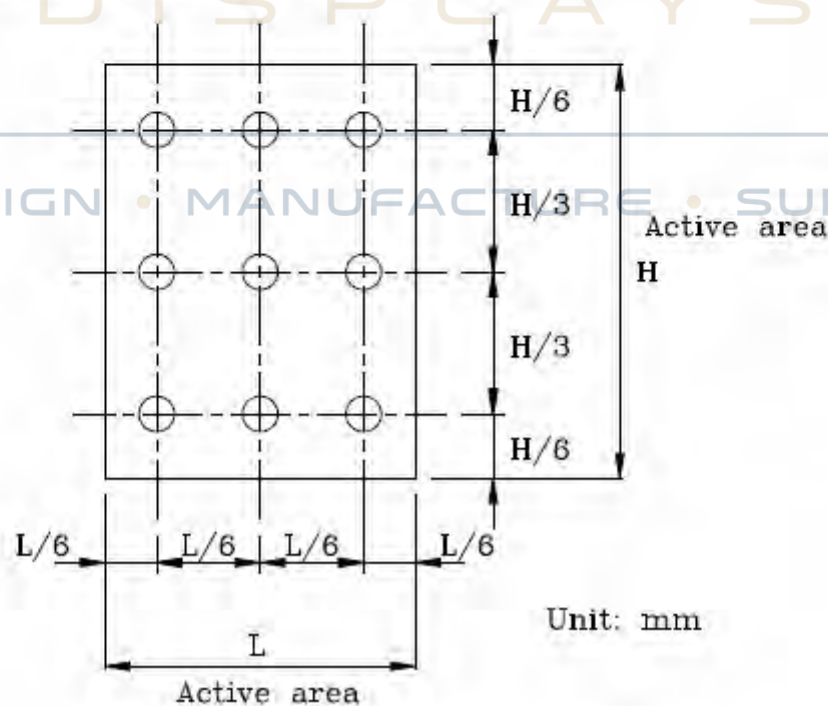
Note 4: Definition of Luminance

① The Brightness Test Equipment Setup

Field=2° (As measuring "black" image, field=2° is the best testing condition)



② The Brightness Test Point Setup



6. ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	MIN	MAX	UNIT
Power Supply	LCD Module	VDD	-0.5	4	V
	BLU	V _{BLU}		13.2	V
		I _{BLU}		860	mA
Supply current (One LED)		I(LED)	-	60	mA
Operating temperature		Top	-20	+70	℃
Storage temperature		Tst	-30	+80	℃

Note: The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

7. ELECTRICAL CHARACTERISTICS

7.1 INPUT POWER

ITEM	SYMBOL	MIN	TYP.	MAX	UNIT
Supply voltage for analog	VCC	3.0	3.3	3.6	V
Supply voltage for logic	VCC	3.0	3.3	3.6	V
Input voltage	V _{il}	GND	-	0.3VDD	V
	V _{ih}	0.7VDD	-	VDD	V

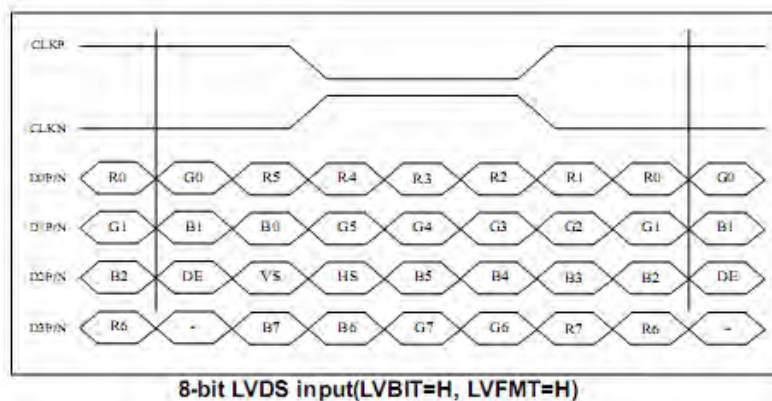
7.2 BLACKLIGHT DRIVING CONDITIONS

ITEM	SYMBOL	SPECIFICATIONS			UNIT	REMARK
		MIN	TYP.	MAX		
Supply voltage	V _{LED}	24		28	V	I _f =200 mA
Supply current	I _{LED}		200		mA	
Power consumption	P	4.8		5.6	W	
PWM Dimming Frequency	F _{PWM}	0.1		20	KHz	
PWM Input Voltage	V _{IH}	1.3		24		
	H _{IL}			0.5		
Life time		50000			Hr	



8. TIMING CHARACTERISTICS

Data input format for LVDS



For 1280RGBx800

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
DCLK frequency @Frame rate=60Hz (LVDS)	F _{DCLK}	66.3	72.4	78.9	MHz
HSYNC period time	T _H	1380	1440	1500	DCLK
Horizontal display area	T _{HD}	1280			DCLK
HSYNC pulse width	T _{HPW}	Min.	2		
		Typ.	-		
		Max.	40		
HSYNC back porch(with pulse width)	T _{HBP}	88	88	88	DCLK
HSYNC front porch	T _{HFP}	12	72	132	DCLK
VSNC period time	T _V	824	838	872	H
Vertical display area	T _{VD}	800			H
VSNC pulse width	T _{VPW}	Min.	2		H
		Typ.	-		
		Max.	20		
VSNC back porch(with pulse width)	T _{VBP}	23	23	23	H
VSNC front porch	T _{VFP}	1	15	49	H

9. RELIABILITY TEST

NO.	TEST ITEM	CONDITIONS	
1	HIGH TEMPERATURE STORAGE	TA=+85℃	240H
2	LOW TEMPERATURE STORAGE	TA=-30℃	240H
3	HIGH TEMPERATURE OPERATION	TA=+70℃	240H
4	LOW TEMPERATURE OPERATION	TA=-20℃	240H
5	HIGH TEMPERATURE AND HIGH HUMIDITY OPERATION	+60℃, 90%RH	240H



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10. LCD MODULES HANDLING PRECAUTIONS

- The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from a high place, etc.
- If the display panel is damaged and the liquid crystal substance inside it leaks out, do not get any in your mouth. If the substance come into contact with your skin or clothes promptly wash it off using soap and water.
- Do not apply excessive force to the display surface or the adjoining areas since this may cause the color tone to vary.
- The polarizer covering the display surface of the LCD module is soft and easily scratched. Handle this polarize carefully.
- To prevent destruction of the elements by static electricity, be careful to maintain an optimum work environment.
 - Be sure to ground the body when handling the LCD module.
 - Tools required for assembly, such as soldering irons, must be properly grounded.
 - To reduce the amount of static electricity generated, do not conduct assembly and other work under dry conditions.
 - The LCD module is coated with a film to protect the display surface. Exercise care when peeling off this protective film since static electricity may be generated.
- Storage precautions
When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps. Keep the modules in bags designed to prevent static electricity charging under low temperature / normal humidity conditions (avoid high temperature / high humidity and low temperatures below 0°C). Whenever possible, the LCD modules should be stored in the same conditions in which they were shipped from our company.

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11. OTHERS

- Liquid crystals solidify at low temperature (below the storage temperature range) leading to defective orientation of liquid crystal or the generation of air bubbles (black or white). Air bubbles may also be generated if the module is subjected to a strong shock at a low temperature.
- If the LCD modules have been operating for a long time showing the same display patterns may remain on the screen as ghost images and a slight contrast irregularity may also appear. Abnormal operating status can be resumed to be normal condition by suspending use for some time. It should be noted that this phenomena does not adversely affect performance reliability.
- To minimize the performance degradation of the LCD modules resulting from caused by static electricity, etc. exercise care to avoid holding the following sections when handling the modules:
 - Exposed area of the printed circuit board
 - Terminal electrode sections.

