

P9135

1.5" CSTN , 128 x RGB x 128

Transflective Display Module

This cost-effective, compact yet robust display module uses transflective CSTN technology to deliver improved outdoor readability while maintaining high color saturation. Supporting 128 x RGB x 128 resolution 65k colors, it includes an LCD panel, a COG driver IC, a peripheral circuit, and a backlight unit.



SPECIFICATIONS

Mechanical:

Width	35.8 mm
Height	41.65 mm
Module Thickness	3.55 mm
Weight	7.8 grams
Active Area	26.87 x 26.87 mm
Dot Pitch	0.21 x 0.21 mm
Resolution	128 x RGB x 128
Pixel Configuration	RGB Vertical Stripe
Diagonal	1.5"

Electrical

Technology	CSTN passive LCD 65k; Negative mode
Supply Voltage	Logic 1.8-3.0 V Analog 2.6-3.0 V
Power Consumption	Max. 2.55 mA (Video mode: 65k)

Temperature Conditions

Operating	-20°C to +55°C
Storage	-30°C to +80°C

Interface

4line and 3line Serial interface, 16bit RGB. Connection via 10-pins incl. power supply (Spring connector on Customer PCB); possibility to enable parallel 8bit / 16bit CPU interface (8080 and 6800).

Optical

Image Mode	Normally Black
Illumination Mode	Transflective
Backlight	2 LEDs (white)
Viewing Direction	6 o'clock
Color	65k
Response Time	< 250ms (Ton + Toff)

Backlight ON

Contrast Ratio	30:1
NTSC (u',v') (%)	15
Viewing Direction 180 degrees, CR >= 2	45°
Viewing Direction 0 degrees, CR >= 2	45°
Viewing Direction 90 degrees, CR >= 2	30°
Viewing Direction 270 degrees, CR >= 2	65°
Luminance (module)	80Cd/m2
Uniformity	1.3
BL Power Consumption	15mA @ 14.4V (typ)

Backlight OFF

Reflectance Diffuse	4.0%
Contrast Ratio Diffuse	6.5:1
NTSC (u',v') (%)	8
Viewing Direction 180 degrees, CR >= 2	30°
Viewing Direction 0 degrees, CR >= 2	30°
Viewing Direction 90 degrees, CR >= 2	20°
Viewing Direction 0 degrees, CR >= 2	45°

APPLICATION INFORMATION

- Mobile Applications

PRODUCT ADVANTAGES

- High brightness and contrast
- 65k colors
- Excellent reflective performance
- Compact, robust format
- Easy assembly via "click-in" module design
- Mass production available now

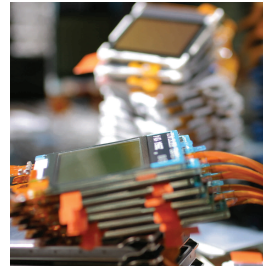
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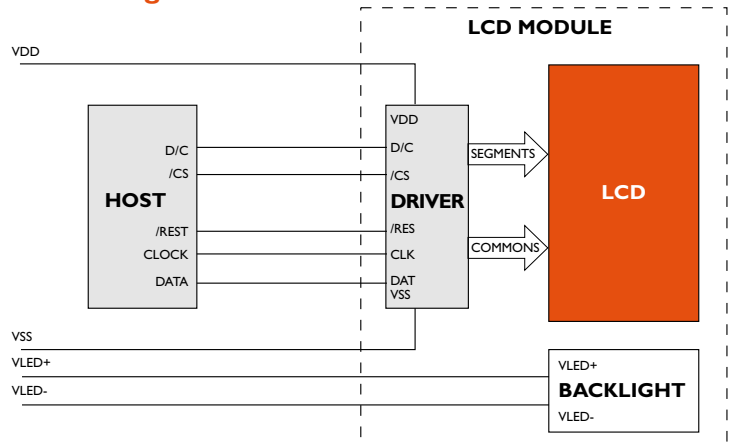
Pinning

PIN	SYMBOL	I/O	FUNCTION
1	LCD_CS	I	Chip select
2	LCD_RESET	I	Reset (low active) RES
3	LCD_RS	I	Control /display data/command (D/C)
4	LCD_CLK	I	Serial clock (SCL)
5	LCD_DAT	I/O	Serial data (SDA)
6	VDD	P	Power supply VDD1, VDD2
7	LCD_GND	P	Ground VSS
8	LCD_ID	O	Module ID by coding resistors
9	LED_A	LED	Anode LED
10	LED_C	LED	Cathode LED



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Block Diagram



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