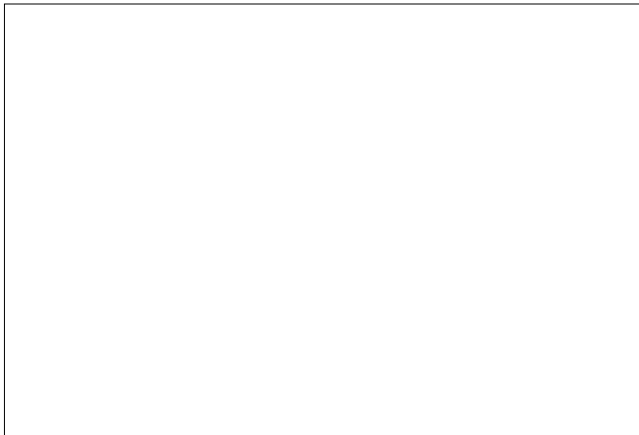




AND1742MST-C

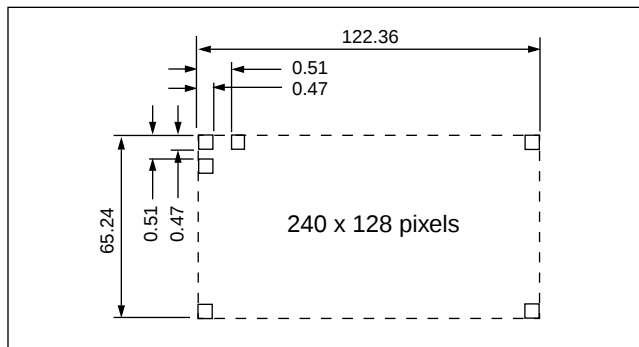
240 x 128 Dots Graphics Display

The AND1742MST-C display is a compact, full dot matrix, with "white page" appearance, LCD module. The AND1742MST-C can display TEXT information, numerals, letters and symbols, as well as GRAPHIC patterns. These devices are suitable for medical and measurement equipment, point-of-sale terminals, portable equipment, and marine instrumentation.

Features

- Black and white ST (MST) transmissive negative mode
- Built-in CCFL backlight
- 40 characters x 18 line capability
- 240 x 128 dot graphic display
- Excellent readability and high-contrast ratio
- 4-bit parallel interface
- Wide operating temperature range (0° to 50°C)
- Built-in DC/DC converter
- Anti-glare polarizer

Dot Matrix Dimensions



Mechanical Characteristics

Item	Specification	Unit
Outline Dimensions	180.0 (W) x 110.0 (H) x 15.1 Max (D)	mm
Number of Dots	240 x 128 Dots (40 characters x 16 lines)	
# of Characters	40 x 16 (480), 6 x 8 font	
Viewing Area	134.0 (W) x 76.0 (H)	mm
Dot Size	0.47 (W) 0.47 (H)	mm
Dot Pitch	0.51 (W) 0.51 (H)	mm
Weight (approx.)	280	gram

Absolute Maximum Ratings

Item	Absolute Maximum			Unit
	Symbol	Min	Max	
Supply Voltage	V_{DD}	0	6.0	V
	$V_{DD} - V_{EE}$	0	V_{DD}	V
CCFL Input Current	I_{FL}	—	10	mA rms
CCFL Driving Voltage ⁽¹⁾	V_{FL}	—	1300	V _{rms}
CCFL Drive Frequency	f_{FL}	—	50	kHz
Input Voltage	V_{IN}	-0.3	V_{DD}	V
Storage Temperature	T_{stg}	-20	60	°C
Operating Temperature	T_{op}	0	50	°C
Humidity	—	10	85	% RH

Electrical Characteristics (TA = 25°C)

			Specifications			Unit
Item	Symbol	Cond.	Min	Typ	Max	
Supply Voltage	V_{DD}		4.75	5.0	5.25	V
	V_{LC}		—	-13.0*	—	
High Level In V	V_{IN}	$V_{DD}=5.0V$	0.8	—	V_{DD}	V
Low Level In V	V_{IH}		0	—	0.8	
FL Driving V	V_{IN}	V_{FL}	190	220	250	V rms
FL Input Current ⁽¹⁾	I_{FL}		4.5	5.0	5.5	mA rms
FL Starting V	V_{FLS}	$T_a = 0^{\circ}C$	850	—	1300	V rms



AND1742MST-C Graphics Display

Electrical Characteristics (TA = 25°C) (Continued)

			Specifications			
Item	Symbol	Cond.	Min	Typ	Max	Unit
FL Driving Frequency	$f_{FL}^{(2)}$		25	30	35	kHz
Current Consumption	I_{DD}	Typical Pattern ⁽³⁾	—	40	50	mA
	I_{EE}		—	—	—	

* V_{LC} when internal DC/DC converter is not used

1. Life time of backlight will change according to the FL input current.
2. Choose a driving frequency that is not in sync with the frame frequency otherwise, you may experience flickering.
3. Typical pattern is checkered.

Optical Characteristics (TA = 25°C, $\phi = 0^\circ$, $\theta = 0$)

			Specifications			
Item	Symbol	Conditions	Min	Typ	Max	Unit
Viewing Angle	θ	$\phi = 0^\circ$	—	—	40	deg.
		$\phi = 180^\circ$	—	—	15	
Contrast Ratio	K	$\theta = 0^\circ$, $\phi = 0^\circ$	5	8	—	—
Response Time	T_{ON}	$\theta = 0^\circ$	—	—	500	ms
	T_{OFF}	$\phi = 0^\circ$	—	—	400	
Luminance	L	$\theta = 0^\circ$, $\phi = 0^\circ$ $I_{FL} = 5.0$ mA rms	60	—	—	cd/m ²

Note: Refer to Applications Section for definitions of viewing angle, contrast ratio, response time (on and off) and luminance.

Connector Pin Assignment

Pin No.	Signal	Function
1	NC	Not Connected
2	NC	Not Connected
3	NC	Not Connected
4	NC	Not Connected
5	NC	Not Connected
6	NC	Not Connected
7	INHX	Display On/Off H: On L: Off
8	D0	Data Input/Output (LSB)
9	D1	Data Input/Output
10	D2	Data Input/Output
11	FLM	Frame Start-up
12	M	LC AC Signal
13	CL2	Display Data Shift

Connector Pin Assignment

Pin No.	Signal	Function
14	CL2	Data Display Shift
15	CL1	Data Display Latch
16	V_{DD}	Power Supply (5V)
17	GND	Ground
18	V_O	Contrast Adjustment Voltage
19	V_{EE}	Power Supply for LCD Drive
20	FGND	Frame Ground

FL Connector

Pin No.	Signal	Function
1	V_{FL}	Power supply for FL backlight
2	NC	Not connected
3	NC	Not connected
4	NC	Not connected
5	V_{FL}	Power supply for FL backlight

Note: Connector: IL-G-5S-S3C2, Japan Aviation Electronics Industry. Mating Housing: IL-M-5P-S3C2-PM. Contact: IL-M-C2.

Power Supply

This LCD module contains a DC/DC converter which supplies the V_{EE} voltage internally.

Temperature Variations

Temperature	$V_{DD} - V_{LC}$ (MST)
0°C	18.0
+25°C	17.0
+50°C	16.2



Timing Relationships and Diagram

Signal Timing Relationships

Item	Symbol	Min.	Max.	Unit
System Cycle Time	t_{CVC}	100	—	ns
C/D Hold Time	t_{CDH}	10	—	
$\overline{CE}$, $\overline{RD}$, $\overline{WR}$ Pulse Width	$t_{CE}t_{RD}t_{WR}$	220	—	
Data Set Up Time	t_{DS}	120	—	
Data Hold Time	t_{DH}	10	—	
Access Time	t_{ACC}	—	120	
Output Hold Time	t_{OH}	10	50	

Dimensional Outline

