AND1742MST

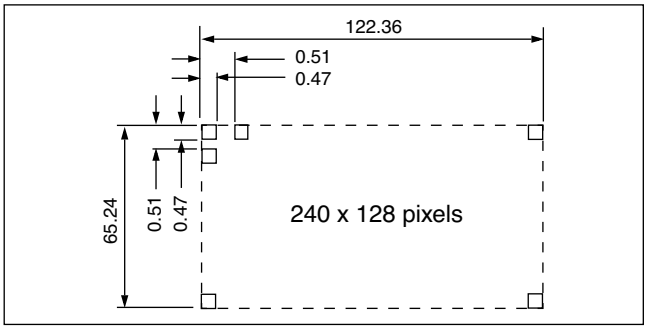
240 x 128 Dots
Intelligent Graphics Display

The AND1742MST display is a compact, full dot matrix, with "white page" appearance, LCD modules that have an on-board LCD controller (SED1330) and display memory (RAM). The AND1742MST 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 16 line capability
- 240 x 128 dot graphic display
- Excellent readability and high-contrast ratio
- Built-in LCD controller (SED1330)
- Wide operating temperature range (0° to 50°C)
- Built-in DC/DC converter
- 12 o'clock viewing angle with anti-glare polarizer
- Transflective version available (AND1742MST-TF)

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			
Item	Symbol	Cond.	Min	Typ	Max	Unit
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}	Ta = 0°C	850	—	1300	V rms
FL Driving Frequency	f_{FL}(2)		25	30	35	kHz

Product specifications contained herein may be changed without prior notice.
It is therefore advisable to contact Purdy Electronics before proceeding with the design of equipment incorporating this product.

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

			Specifications			
Item	Symbol	Cond.	Min	Typ	Max	Unit
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, ϕ = 0°, θ = 0)

		Specifications			
Item	Symbol	Min	Typ	Max	Unit
Viewing Angle	Right to Left	–	90	–	degree
	Up & Down	–	55	–	
Contrast Ratio	K	5	8	—	—
Response Time	T_{ON}	—	250	500	ms
	T_{OFF}	—	180	400	
Luminance I_{FL} = 5.0 mA rm	L	60	—	—	cd/m²

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	$\overline{RESET}$	Controller Reset
2	$\overline{RD}$	Data Read
3	$\overline{WR}$	Data Write
4	SEL2	MPU Select
5	$\overline{SEL1}$	MPU Select
6	$\overline{CS}$	Chip Select
7	AO	Command Mode Set
8	D0	Data Input/Output (LSB)
9	D1	Data Input/Output
10	D2	Data Input/Output
11	D3	Data Input/Output
12	D4	Data Input/Output
13	D5	Data Input/Output
14	D6	Data Input/Output
15	D7	Data Input/Output (MSB)
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

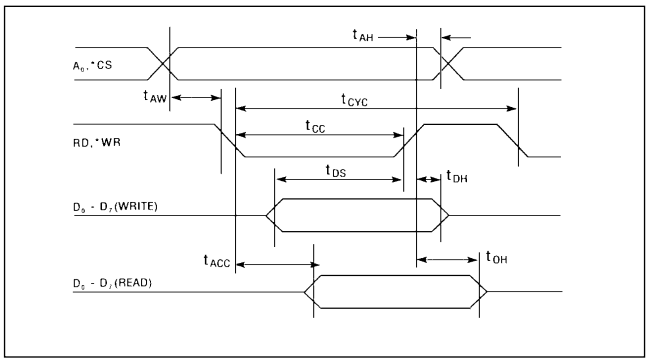
Temperature	$V_{DD} - V_{LC}$ (MST)
0°C	18.0
+25°C	17.0
+50°C	16.2

Timing Relationships and Diagram

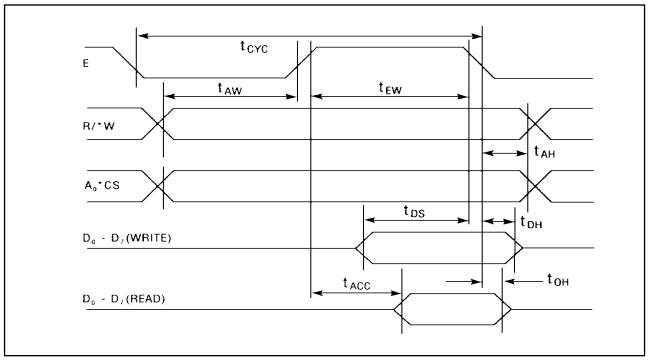
Signal Timing Relationships

Item	Symbol	Min.	Max.	Unit
System Cycle Time	t_{CYC}	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	

80 Series Timing Diagram



68 Series Timing Diagram



Dimensional Outline