

# AZ DISPLAYS, INC.

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*COMPLETE LCD SOLUTIONS*

## **SPECIFICATIONS FOR LIQUID CRYSTAL DISPLAY**

PART NUMBER:

ACM 1602C SERIES

DATE:

July 14, 2006

# **INTRODUCTION**

This USER'S MANUAL is introduced the outside dimensions, optical characteristics, electrical characteristics, interface, controller commands, etc. of the custom design LCD module.

## **FEATURE**

- (1) Compact, integral COG display module.
- (2) 2 Lines of 5 X 8 Dots STN LCD module.
- (3) COG low power consumption.
- (4) STN LCD, reflective mode

# MECHANICAL SPECIFICATIONS

ITEM	STANDARD VALUE	UNIT
DOTS	2 Lines of 5 X 8 Dots	-
DOT SIZE	0.55X0.55	mm
MODULE DIMENSION	69.0(W) × 28.0(H) × 2.0(T)	mm
EFFECTIVE DISPLAY AREA	64.5(W) × 15.0(H)MIN	mm
APPROX. WEIGHT	20	G
LCD TYPE	STN (Positive / Reflective )	
DUTY,BIAS	1/16,1/5	
VIEWING DIRECTION	6 O'clock	
CONTROLLER IC	SPLC781A	

## MAX STANDARD VALUE

ITEM	SYMBOL	MIN.	TYPE	MAX	UNIT
OPERATING TEMPERATURE	Top	0	25	50	
STORAGE TEMPERATURE	Tst	-10	/	60	
INPUT VOLTAGE	VI	VSS	/	VDD	V
SUPPLY VOLTAGE FOR LOGIC	VDD-VSS	Vss-0.5	/	3.3	V
SUPPLY VOLTAGE FOR LCD	VO-VSS	VSS-0.5	0	0.2	V <sub>5</sub>
STATIC ELECTRICITY	Be sure that you are grounded when handing LCM				

## ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
SUPPLY VOLTAGE FOR LOGIC	$V_{DD}-V_{SS}$	$T_a = 25\text{ }^{\circ}\text{C}$	-	3.3	-	V
SUPPLY VOLTAGE FOR LCD	$V_{LCD}-V_{SS}$ (V <sub>OP</sub> )	$T_a = 25\text{ }^{\circ}\text{C}$	-0.2	0	0.2	v
INPUT HIGH VOL.	$V_{IH}$	$T_a = 25\text{ }^{\circ}\text{C}$	$0.7V_{DD}$	-	$V_{DD}$	V
INPUT LOW VOL.	$V_{IL}$	$T_a = 25\text{ }^{\circ}\text{C}$	$V_{SS}$	-	$0.3V_{DD}$	V
OUTPUT HIGH VOL.	$V_{OH}$	$T_a = 25\text{ }^{\circ}\text{C}$	$V_{DD}-0.4$	-	-	V
OUTPUT LOW VOL.	$V_{OL}$	$T_a = 25\text{ }^{\circ}\text{C}$	-	-	0.4	V
SUPPLY CURRENT	$I_{DD}$	$V_{DD} = 3.3\text{V}$	-	280	450	$\mu\text{A}$

## OPTICAL MEASUREMENT SYSTEM

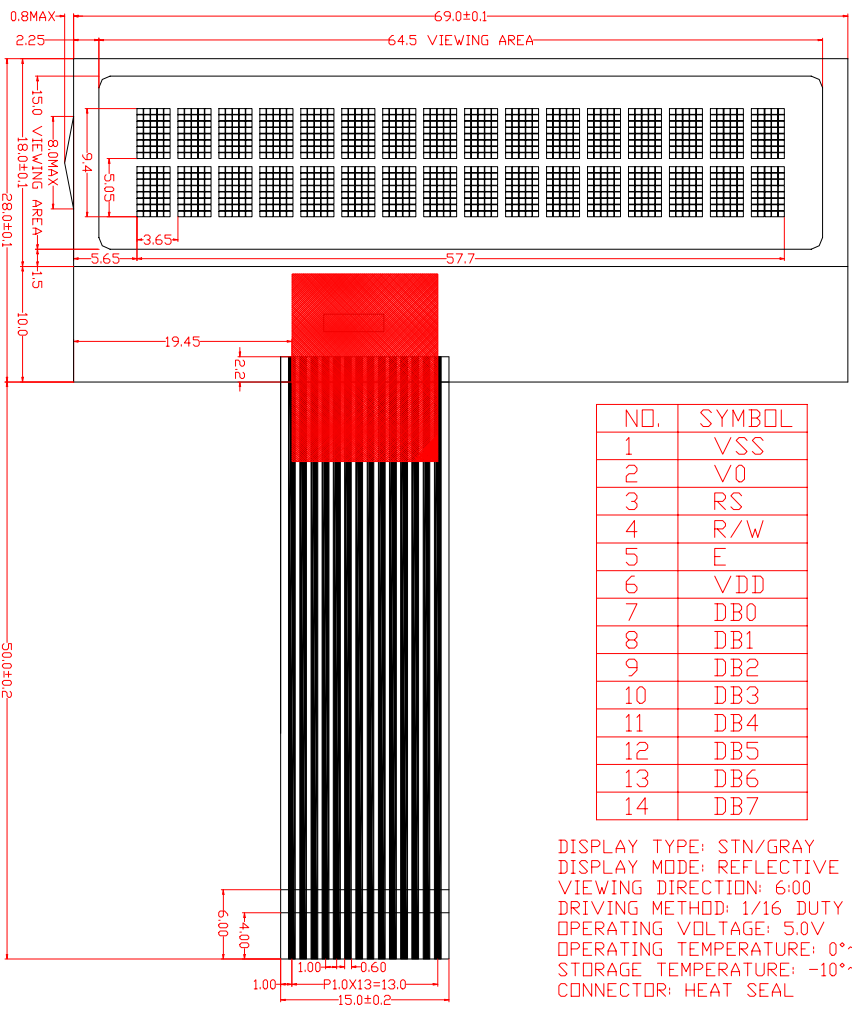
	SYMBOL	CONDITION	MIN.	TYPE	MAX.	UNIT
Viewing Angle	(BK-FT)	$Cr > 2.0$	5	/	45	DEG
	(R-L)	$T_a = 25\text{ }^{\circ}\text{C}$	-40	/	40	DEG
Contrast ratio (Max)	Cr(Max)	=0	-	4.9	-	
Response Time(Rise)	T <sub>on</sub>	=0	/	147	200	ms
Response Time(Fall)	T <sub>off</sub>	$V_{LCD} = 5.7\text{v}$ $T_a = 25$	/	129	180	ms

# INTERFACE

PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	VSS	8	D1
2	V0	9	D2
3	RS	10	D3
4	R/W	11	D4
5	E	12	D5
6	VDD	13	D6
7	D0	14	D7

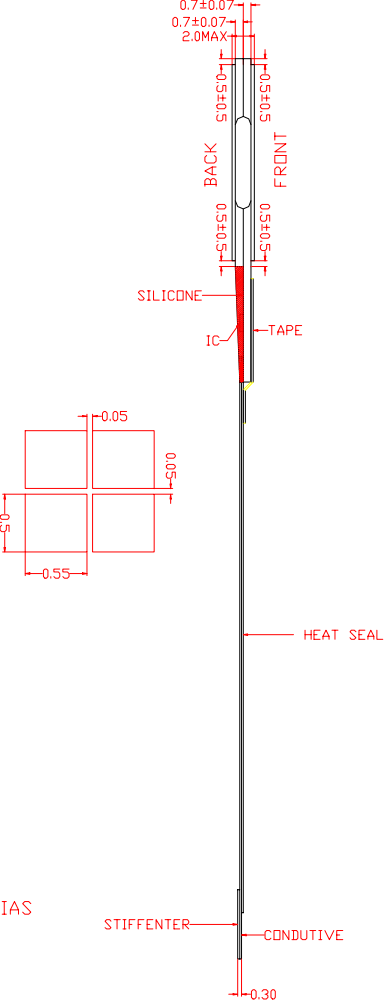
# ACM1602C SERIES LCD MODULE

## MECHANICAL DIAGRAM



NO.	SYMBOL
1	VSS
2	V0
3	RS
4	R/W
5	E
6	VDD
7	DB0
8	DB1
9	DB2
10	DB3
11	DB4
12	DB5
13	DB6
14	DB7

DISPLAY TYPE: STN/GRAY  
 DISPLAY MODE: REFLECTIVE  
 VIEWING DIRECTION: 6:00  
 DRIVING METHOD: 1/16 DUTY 1/5 BIAS  
 OPERATING VOLTAGE: 5.0V  
 OPERATING TEMPERATURE: 0°~50°C  
 STORAGE TEMPERATURE: -10°~60°C  
 CONNECTOR: HEAT SEAL



CUSTOMER APPROVED:

AZ Displays, Inc.	DRAWN:	CHECKED:	CONFIRMED:	ACM1602C	UNIT: MM	
				DWG NO:ED-3421-LCM/A		