Display Elektronik GmbH

DATA SHEET

LCD MODULE

DEM 120064A-SERIES

Product specification

VERSION: 6 **29.07.2003**

GENERAL SPECIFICATION

COG MODULE N0 :

DEM 120064A-SERIES

CUSTOMER P / N :

VERSION NO.	CHANGE DESCRIPTION	DATE
0	ORIGINAL VERSION	**11.08.2000**
1	CHANGE PIN	**15.08.2000**
2	LCD TYPE CHANGE	**31.10.2000**
3	DISPLAY TYPE&POLARIZER &FPC CHANGED	**16.11.2000**
4	ADDING ITO TRACE	**20.12.2000**
5	LCD PIN PITCH & FPC CHANGED	**12.01.2001**
6	ADDING VERSION	**01.02.2001**

PREPARED BY: DXW DATE: 01.02.2001

APPROVED BY: MH DATE: 29.07.2003

CONTENTS

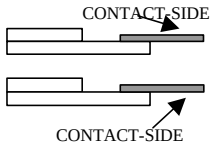
1 Functions and Features

DEM 120064A_SERIES LCD Type:

MODULE	LCD-MODEL	LCD-TYPE	FPC-TYPE
DEM 120064A (FPCR,refl.)	FSTN, silvergrey	Reflective Positive	FPCR
DEM 120064A (FPCF,refl.)	FSTN, silvergrey	Reflective Positive	FPCF
DEM 120064A (FPCR,refl.)	FSTN, silvergrey	Transflective Positive	FPCR
DEM 120064A (FPCF,refl.)	FSTN, silvergrey	Transflective Positive	FPCF

Mechanical Overview : FPCF (FPC-Front)

: FPCR (FPC-Rear)



Viewing Angle : 6:00 o'clock

Driving Scheme : Duty =1/64, Bias=1/9, V(LCD) =11.0V

Display Contents : 120 x 64 Dots

Operating Voltage : 1.8V ~3.5V (3V typ.)

Interface : Parallel/Serial

Operating Temperature : -20°C ~ 70°C

Storage Temperature : -30°C ~ 80°C

2 Module Dimensions(Please refer to Diagram 2.1)

Overall Size : 55 x 74.2 x 1.84 (mm)

Dot Size : 0.32 x 0.32 (mm)

Dot gap : 0.035 (mm)

3 Block Diagram

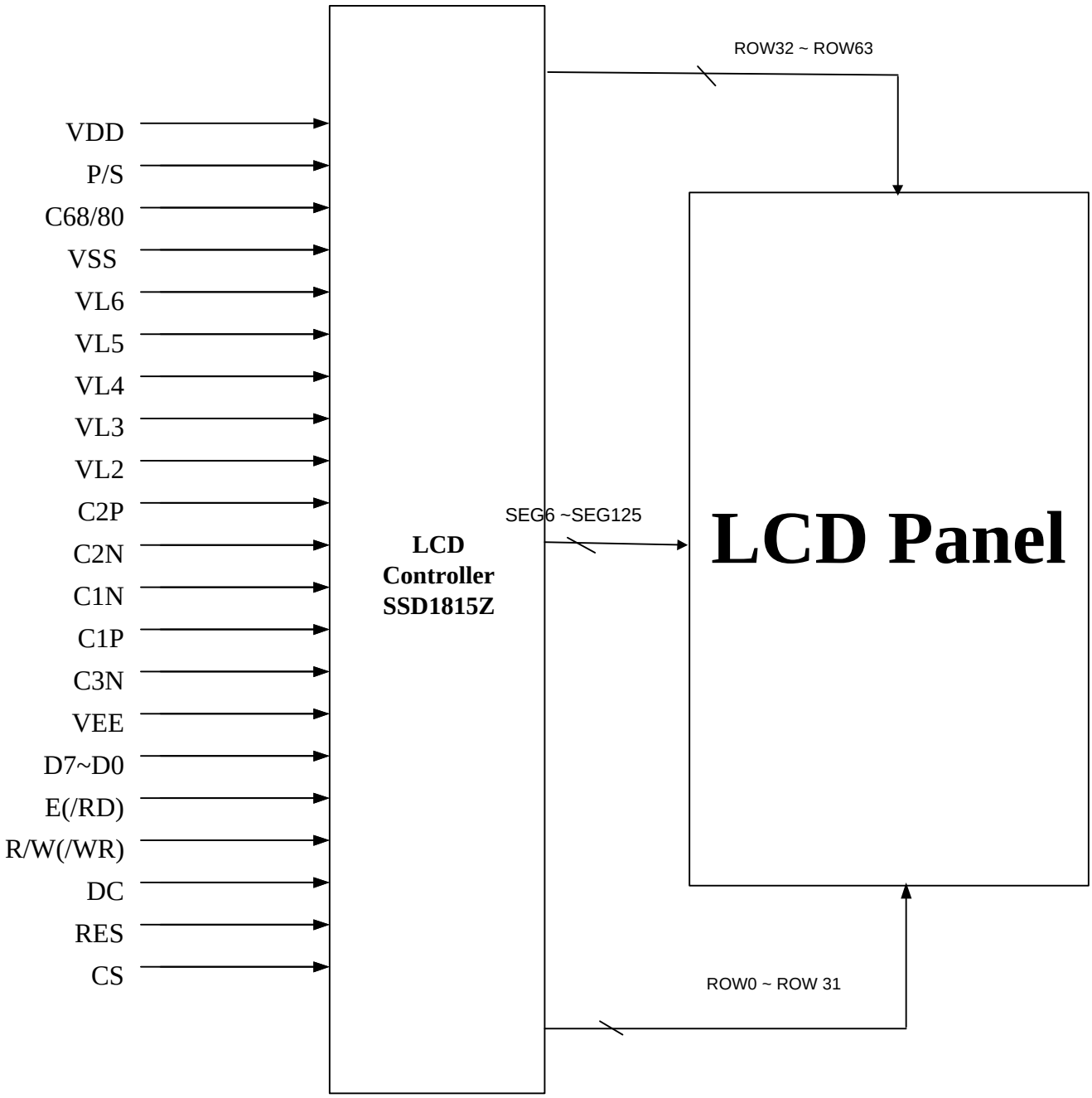
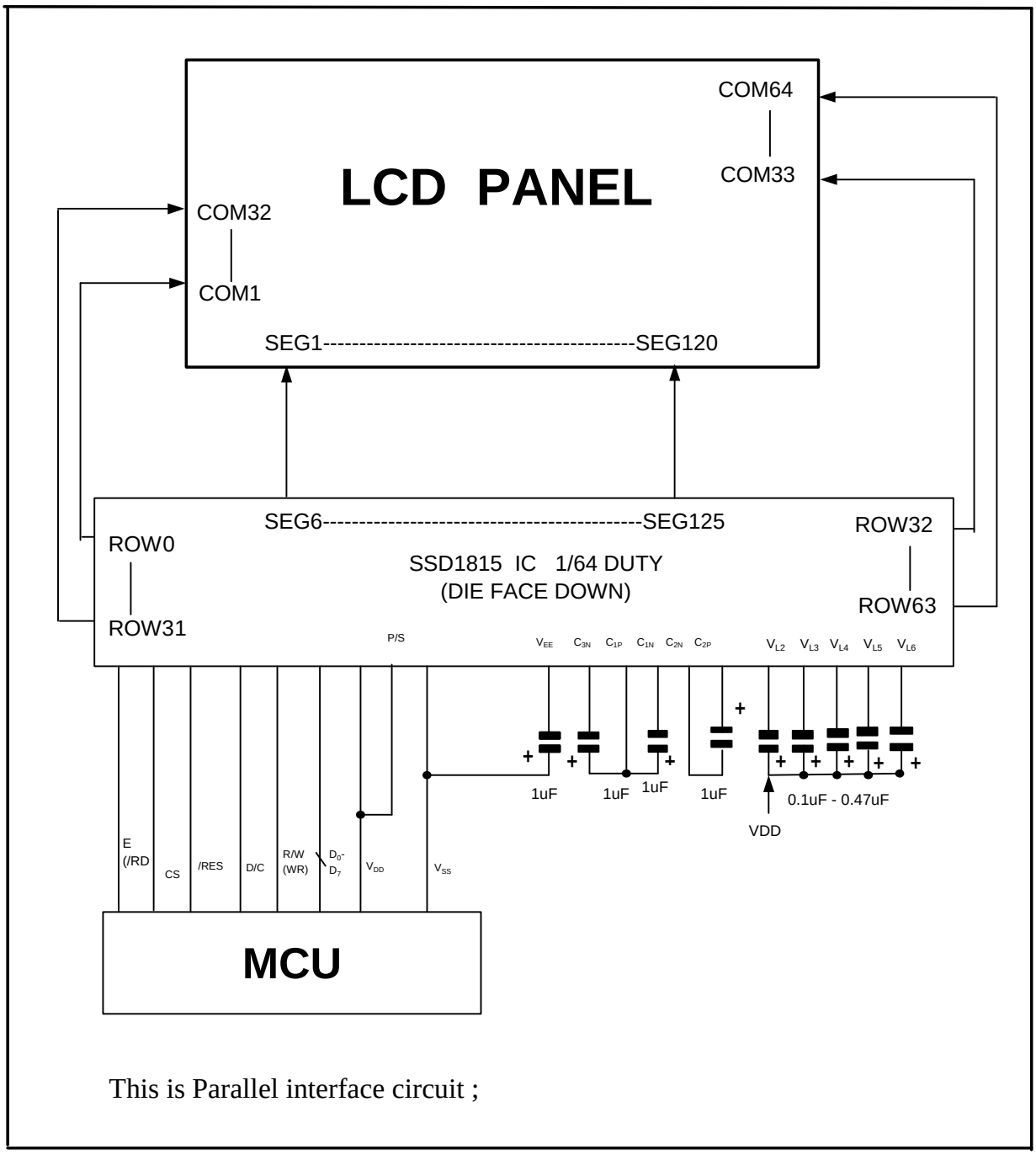


Diagram 3.1

4 Pin Assignment

Pin Number	Symbol	Function
1	V_{DD}	Power supply pin.
2	P/S	This pin is serial/parallel interface selection input. When this pin is pulled high,parallel mode is selected. When it is pulled low,serial interface will be selected. Read back operation is only available in parallel mode.
3	C68/80	This pin is microprocessor interface selection input. When the pin is pulled high,6800 series interface is selected and when the pin is pulled low,8080 series MCU interface is selected.
4	V_{L6}	This pin is the most negative LCD driving voltage.
5	V_{L5}	LCD driving voltage.
6	V_{L4}	LCD driving voltage.
7	V_{L3}	LCD driving voltage.
8	V_{L2}	LCD driving voltage.
9	C_{2P}	for internal DC-DC voltage converter.
10	C_{2N}	for internal DC-DC voltage converter.
11	C_{1N}	for internal DC-DC voltage converter.
12	C_{1P}	for internal DC-DC voltage converter.
13	C_{3N}	for internal DC-DC voltage converter.
14	V_{EE}	This is the most negative voltage supply pin of the chip.
15	V_{SS}	Ground.
16	D_7/SDA	When serial mode is selected , D_7 is the serial data input (SDA) and D_6 is the serial clock input (SCK).
17	D_6/SCK	
18~23	D_5~D_0	These pins are 8-bit bi-directional data bus.
24	E/(RD)	This is microprocessor interface input. When interfacing to an 8080-microprocessor, this pin reveives the RD signal.Data read operation is initiated when this pin is pulled low when the chip is selected.
25	R/W(WR)	This pin is microprocessor interface input.When interfacing to an 8080-microprocessor, this pin will be the /WR input. Data write operation is initiated when this pin is pulled low when the chip is selected.
26	D/C	This pin is Data/Command control pin , high is data , Low is command .
27	/RES	This pin is reset signal input .
28	CS	This pin is chip select input.

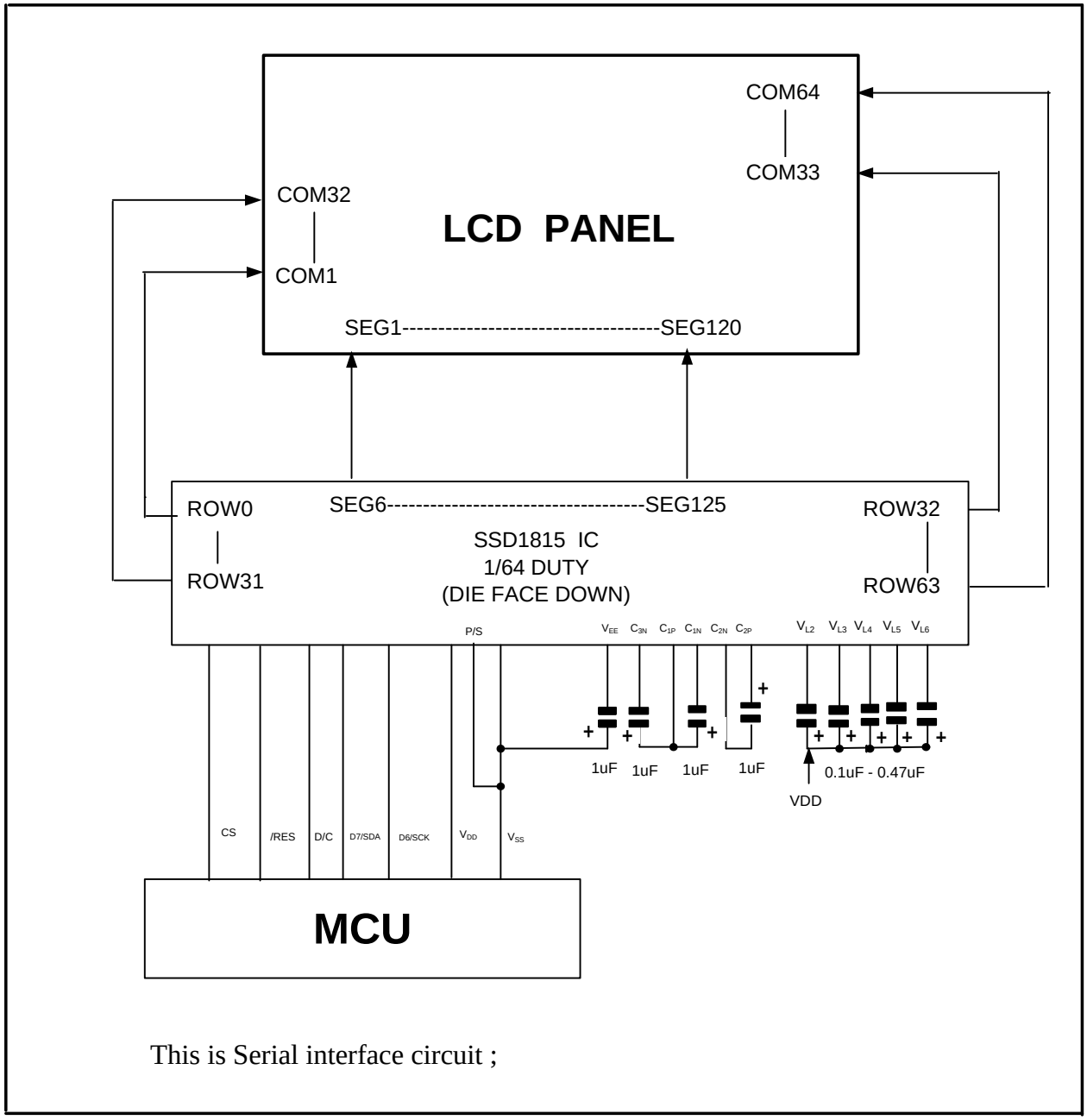
5 REFERENCE CIRCUIT EXAMPLES (parallel interface)



This is Parallel interface circuit ;

Voltage Regulator Circuit is :ON;
Voltage Follower Circuit is :ON.
Voltage Converter Circuit is :ON.

6 REFERENCE CIRCUIT EXAMPLES (serial interface)

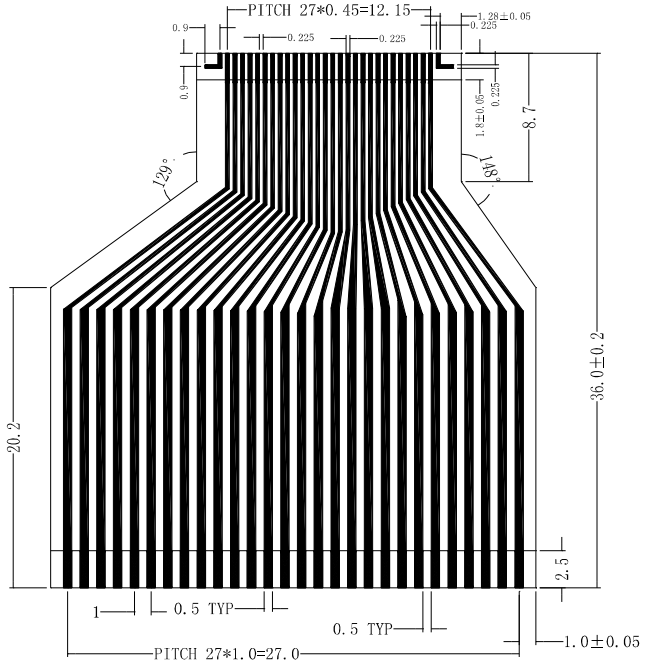


This is Serial interface circuit ;

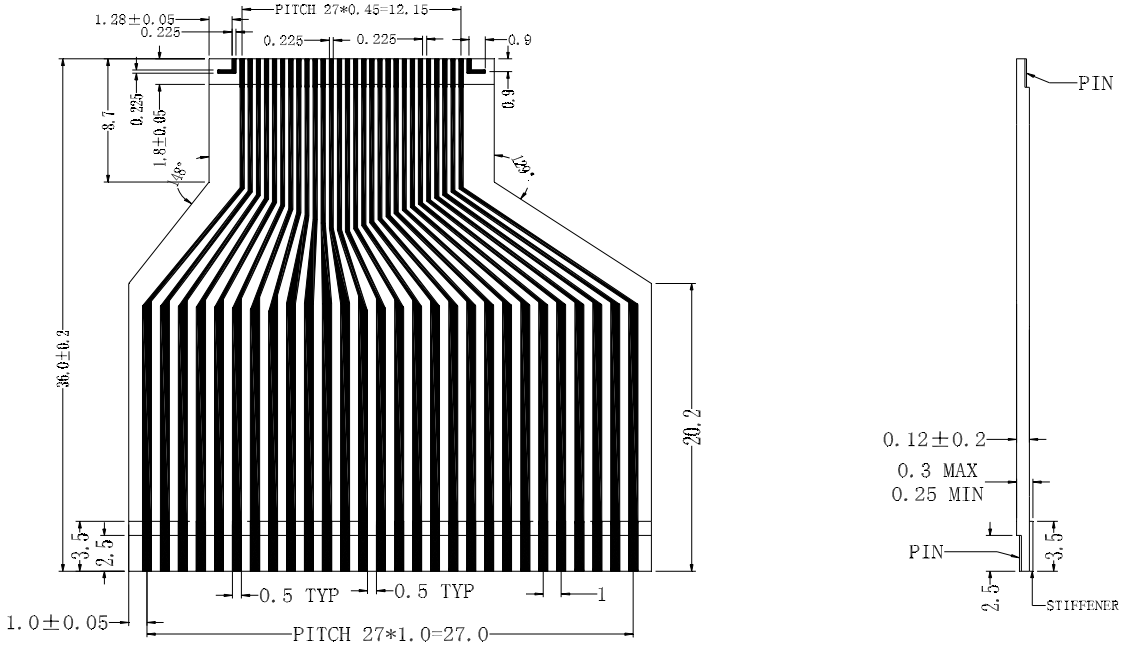
Voltage Regulator Circuit is :ON;
Voltage Follower Circuit is :ON.
Voltage Converter Circuit is :ON.

7 FPC DIMENSIONS

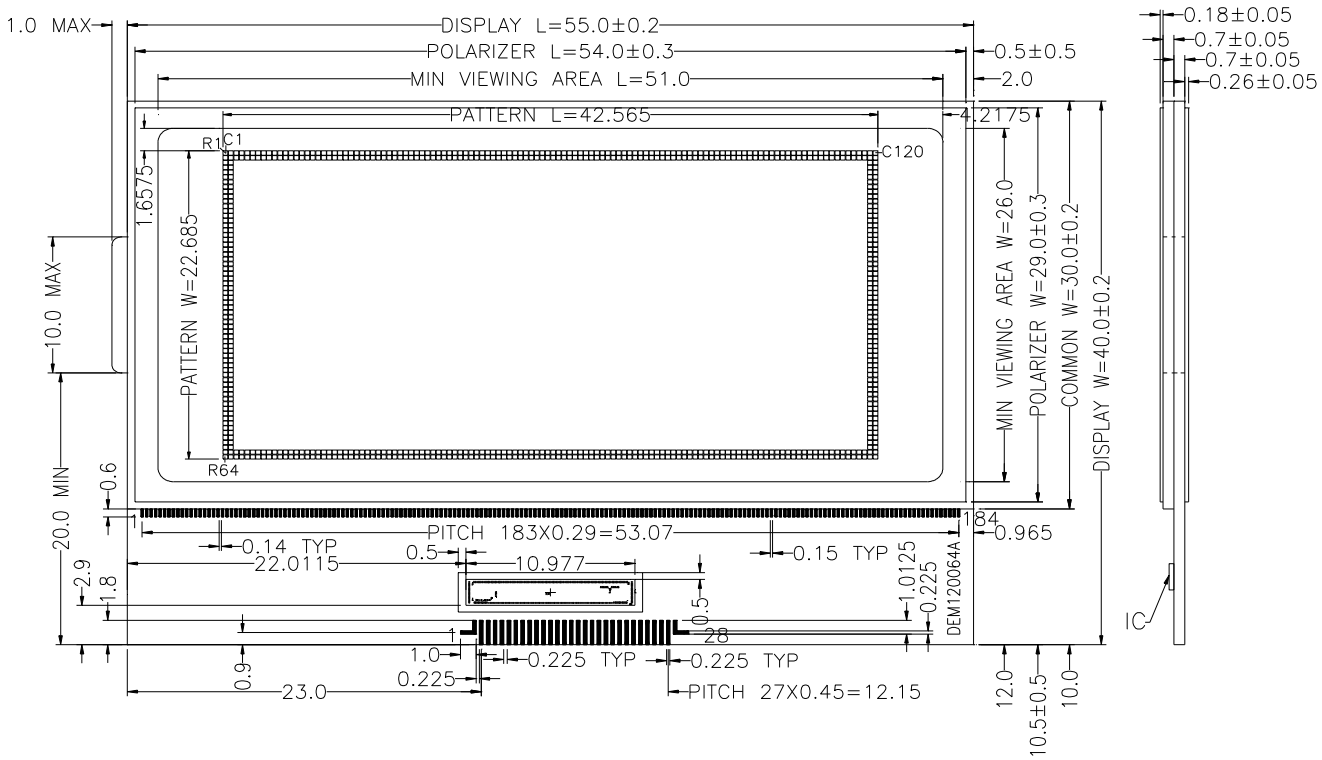
FPCR - FPC contacts on the rear side of module FPC (1)



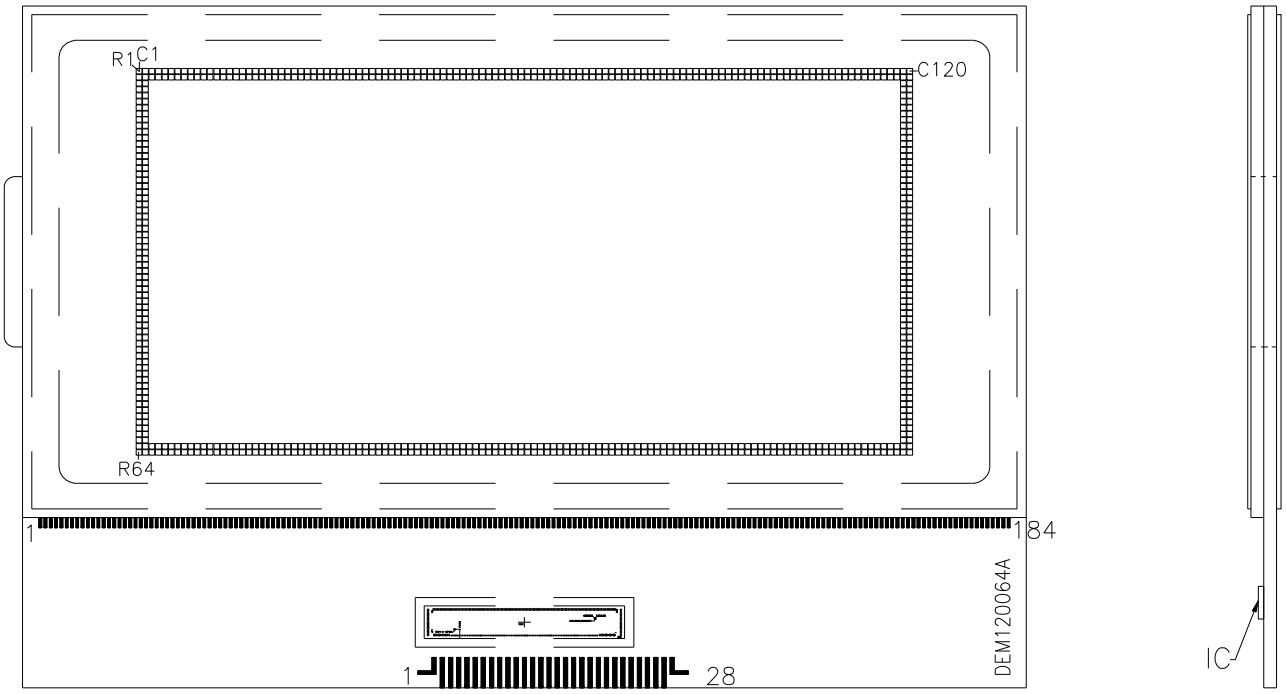
FPCF - FPC contacts on the front side of module FPC (2)



8 LCD ARTWORK

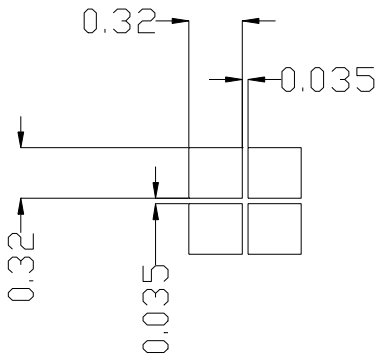


9 LABELLING

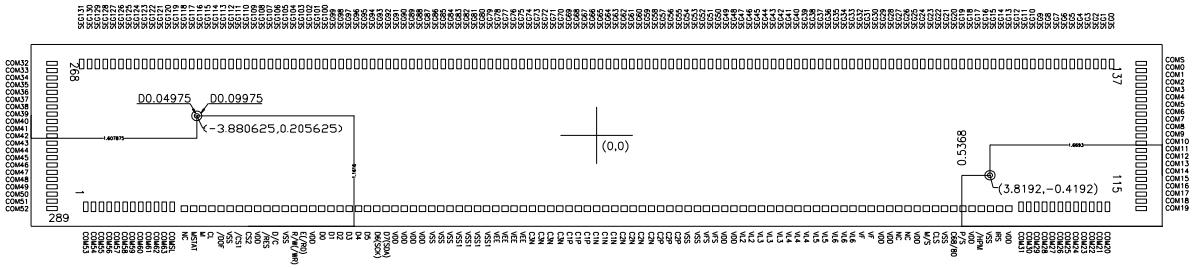


10 Pad Configuration Graphic Dimension

PAD NO.	CONFIGURATION
1	COM31[R33(C1−C120)]
32	COM0[R64(C1−C120)]
33	SEG6[C1(R1−R64)]
152	SEG125[C120(R1−R64)]
153	COM32[R32(C1−C120)]
184	COM63[R1(C1−C120)]



11 IC PIN NO. CONFIGURATION



PIN NO.	CONFIGURATION	PIN NO.	CONFIGURATION
1	VDD	16	D7(SDA)
2	P/S	17	D6(SCK)
3	C68/80	18	D5
4	VL6	19	D4
5	VL5	20	D3
6	VL4	21	D2
7	VL3	22	D1
8	VL2	23	D0
9	C2P	24	E(/RD)
10	C2N	25	R/W(/WR)
11	C1N	26	D/C
12	C1P	27	/RES
13	C3N	28	CS
14	VEE		
15	VSS		