

## VACUUM FLUORESCENT DISPLAY MODULE

### ENGINEERING PROPOSAL

GP1183A01A

EVALUATION

- ACCEPTED WITHOUT ANY CHANGE  
 THE FOLLOWING CHANGE IS REQUIRED

May 19, 2006

VFD MODULE FACTORY

Electronic Components Division

**Futaba Corporation**

ISSUED BY

Hideki Miyazaki

CHECKED BY

Iroyuki Takano

CHECKED BY

Katsunori Kase

APPROVED BY

Toshihiro Yamaguchi

## 1. FEATURES

- 1-1. High quality and long life can be achieved with FUTABA VFD.
- 1-2. Being equipped with VFD driver ICs, CPU, a controller, RS-232C interface IC and PSU.
- 1-3. It realizes displaying  $5 \times 7$  dots character by RS-232C serial communication and parallel communication.

## 2. GENERAL SPECIFICATIONS

### 2-1. Outer Dimension, Weight (Refer to page 27)

**Table- 1**

Item	Specification	Unit
Outer dimension	(W) $80.0 \pm 1$	mm
	(H) $36.0 \pm 1$	
	(T) 13.7 Max.	
Weight	Approx. 30	g

### 2-2. Display Specification

**Table- 2**

Item	Specification	Unit
Display Area	52.5 (W) $\times$ 11.45 (H)	mm
Number of Pixels	112(W) $\times$ 16 (H)	DOT
Dot Size	0.33 (W) $\times$ 0.575 (H)	mm
Dot Pitch	0.47 (W) $\times$ 0.725 (H)	mm
Color of Illumination	Green( $\lambda$ p=505nm)	—

### 2-3. Environmental Conditions

**Table- 3**

Item	Symbol	Min.	Max.	Unit
Operating Temperature	<i>Topr</i>	-40	+85	°C
Storage Temperature	<i>Tstg</i>	-40	+85	°C
Operating Humidity (Note)	<i>Hopr</i>	20	80	%
Storage Humidity (Note)	<i>Hstg</i>	20	90	%
Vibration (10~55Hz)	—	—	4	G
Shock	—	—	40	G

Note) Avoid operations and/or Storage in moist environmental conditions.

## 2-4. Absolute Maximum Ratings

Table- 4

Item	Symbol	Min.	Max.	Unit
Supply Voltage	$V_{cc}$	-0.3	6.0	Vdc
Input signal Voltage D0-D7, /WR, /RD, /RESET	$V_{IS}$	-0.3	$V_{cc}+0.3$	Vdc
Input signal Voltage SIN	$V_{IS}$	-20	+20	Vdc

## 2-5. Recommended Operation Conditions

Table- 5

Item	Symbol	Min.	Typ.	Max	Unit
Supply Voltage	$V_{cc}$	4.75	5.0	5.25	Vdc
Input Signal Voltage D0-D7, /WR, /RD, /RESET	$V_{IH}$	$0.8V_{cc}$	—	$V_{cc}$	Vdc
	$V_{IL}$	0	—	$0.2V_{cc}$	
Input Signal Voltage SIN	$V_{IH}$	3	—	15	Vdc
	$V_{IL}$	-15	—	0.5	

## 2-6. Electrical Optical Characteristics

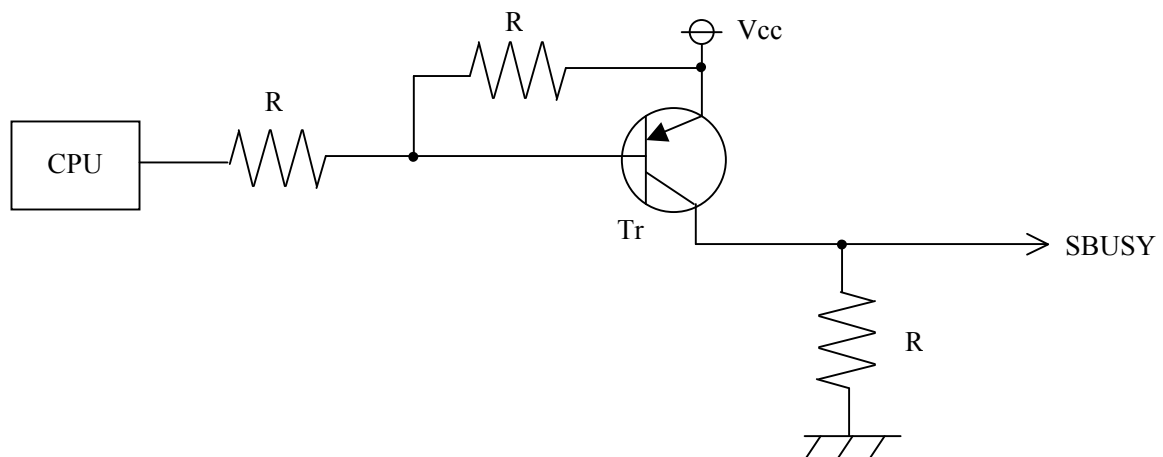
Table- 6

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Current (Note1)	$I_{cc}$	$V_{cc}=5.0V$ All dots on	—	250	330	mA
Power Consumption	—		—	1.25	1.65	W
Luminance (Note2)	$L$		350	700	—	cd/m <sup>2</sup>
High-level output voltage	$V_{OH}$	$V_{cc}=5.0V$ $R_L=3k\Omega$ to GND	4.0	—	$V_{cc}$	Vdc
Low-level output voltage	$V_{OL}$	$V_{cc}=5.0V$ $R_L=3k\Omega$ to GND	0	—	0.5	Vdc

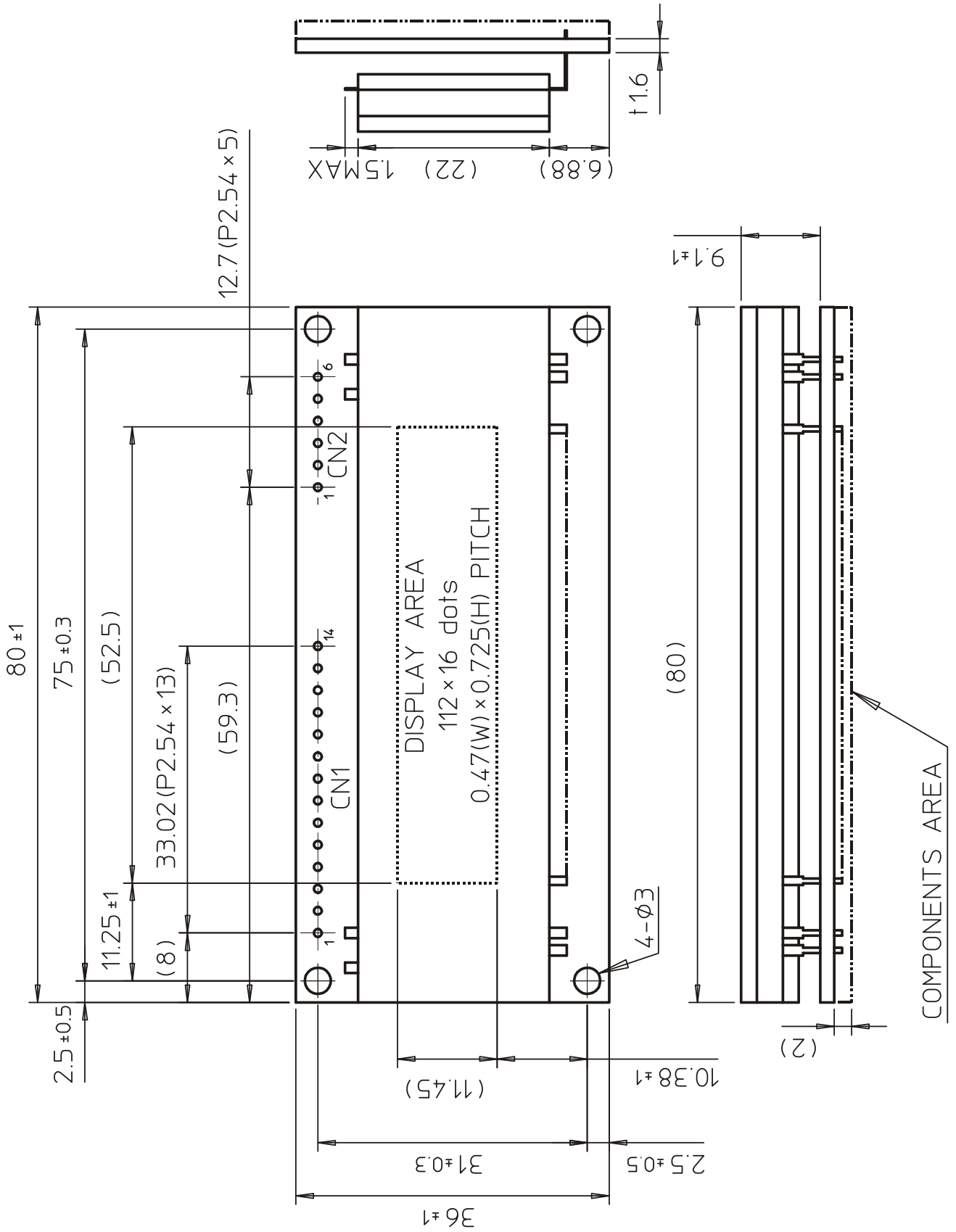
Note1) The surge current can be approx.5 times of specified maximum supply current at power on.

Note2) It indicates the value at 100% luminance adjustment level.

Note3) “SBUSY” is open collector terminal.



8. MECHANICAL DRAWING



9. BLOCK DIAGRAM

