

APPLICATION NOTE

VACUUM FLUORESCENT DISPLAY MODULE

GRAPHIC DISPLAY MODULE

GP1063A01A

GENERAL DESCRIPTION

Futaba GP1063A01A is a graphic display module using 256×64 dots graphic VFD with 1.0×1.0mm dot pitch.

The module consists of control ASIC, SRAM, power source and VFD drivers.

The module requires the two kinds of power sources of +5V and +12V.

It can be connected directly to the 8 bits data bus line of the host CPU.

Important Safety Notice

Please read this note carefully before using the product.

Warning

- The module should be disconnected from the power supply before handling.
- The power supply should be switched off before connecting or disconnecting the power or interface cables.
- The module contains electronic components that generate high voltages which may cause an electrical shock when touched.
- Do not touch the electronic components of the module with any metal objects.
- The VFD used on the module is made of glass and should be handled with care. When handling the VFD, it is recommended that cotton gloves be used.
- The module is equipped with a circuit protection fuse.
- Under no circumstances should the module be modified or repaired. Any unauthorized modifications or repairs will invalidate the product warranty.
- The module should be abolished as the factory waste.

1. FEATURES

- 1-1. High quality and long life can be achieved with FUTABA VFD.
- 1-2. Compact and light-weight unit by using packed display drivers and one-chip VFD control.
- 1-3. Driven through a simple interface.
- 1-4. High speed 8 bits data write-in capability.

2. GENERAL SPECIFICATIONS

2-1. DIMENSIONS, WEIGHT (Refer to FIGURE-1)

Table-1

Item	Specification	Unit
Outer Dimensions	(L) 320.0±1	mm
	(W) 120.0±1	
	(T) 41.5 Max.	
Weight	approx. 1000	g

2-2. SPECIFICATIONS OF THE DISPLAY PANEL

Table-2

Item	Specification	Unit
Display Area	255.7×63.7	mm
Number of Dots	256×64	Dot
Dot Pitch	1.0×1.0	mm
Dot Size	0.7×0.7	mm
Color Illumination	Green ($\lambda_p=505\text{nm}$)	–
Luminance	350 Typ.	cd/m ²

Note)

By using a filter, uniform color ranging from blue to orange (including white) can be obtained.

2-3. ENVIRONMENT CONDITIONS

Table-3

Item	Symbol	Min.	Max.	Unit
Operating Temperature	<i>T_{opr}</i>	0	+50	°C
Storage Temperature	<i>T_{stg}</i>	-20	+70	°C
Operating Humidity	<i>H_{opr}</i>	20	80	%
Storage Humidity	<i>H_{stg}</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_{cc1}	-0.3	6.0	Vdc
	V_{cc2}	-0.3	14.4	Vdc
Input Signal Voltage	V_{IS}	-0.3	$V_{cc}+0.3$	V

2-5. RECOMMENDED OPERATING CONDITIONS

Table-5

Item	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V_{cc1}	4.5	5.0	5.5	Vdc
	V_{cc2}	10.8	12.0	13.2	Vdc
H-Level Input Voltage	V_{IH}	2.4	–	–	V
L-Level Input Voltage	V_{IL}	–	–	0.6	V

2-6. ELECTRICAL CHARACTERISTICS

Table-6

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Current	I_{cc1}	$V_{cc1}=5.0Vdc$ $V_{cc2}=12.0Vdc$ All on	–	0.1	0.15	A
Supply Current	I_{cc2}		–	1.8	2	A
Power Consumption	–		–	22.1	24.75	W
Luminance	L		175	350	–	cd/m ²
H-Level output Voltage	V_{OH}	$V_{cc}=4.5Vdc$ $I_{OH}=-2mA$	4	–	–	V
L-Level output Voltage	V_{OL}	$V_{cc}=4.5Vdc$ $I_{OL}=3.2mA$	–	–	0.4	V

Note) The surge current can be approx. five times the specified supply current at power on.

GP1063A01A MECHANICAL DRAWING

FIGURE-1



