

40×240 dots**DG04241**

(Built-in controller) 1/40 Duty

SANYO SEMICONDUCTOR CORP

This dot matrix module has a controller that allows 40 characters by 4 lines or 40 dots by 240 dots of graphics to be displayed. It can be interfaced with a CPU through an 8-bit data bus and connected directly to 68- or 80-series CPUs. The CG ROM stores 192 patterns. The DD RAM has a capacity of 16 Kbits.

Mechanical characteristics

Parameter	Dimensions	unit
Out line	190.0 (W) × 54.0 (H) × 12.0 (T)	mm
Min. viewing area	147.0 (W) × 29.5 (H)	mm
Dot display area	139.15 (W) × 23.15 (H)	mm
Dot size	0.53 (W) × 0.53 (H)	mm
Dot pitch	0.58 (W) × 0.58 (H)	mm
Weight	91 (approximately)	g

Absolute maximum ratings

Parameter	Symbol	min.	max.	unit
Logic supply voltage	$V_{DD} - V_{SS}$	-0.3	6.0	V
LCD supply voltage	$V_{DD} - V_O$	-0.3	20.0	V
Input voltage	V_I	-0.3	$V_{DD} + 0.3$	V
Operating temperature	T_{opg}	0	+50	°C
Storage temperature	T_{stg}	-20	+70	°C

Electrical characteristics ($T_a = 25^\circ\text{C}$, $V_{DD} = 5.0 \pm 0.25\text{V}$)

Parameter	Symbol	Condition	min.	typ.	max.	unit
Input high-level voltage	V_{IH}	—	2.0	—	V_{DD}	V
Input low-level voltage	V_{IL}	—	0	—	0.8	V
LCD drive voltage	V_O	—	—	10.5	—	V
Oscillation frequency	f_{osc}	—	—	4.0	—	MHz
Supply current	I_{DD}	$V_{DD} - V_O = 10.5\text{V}$	—	7.0	12.0	mA
LCD supply current	I_{EE}	$f_{osc} = 4\text{MHz}$	—	0.6	1.5	mA

Pin functions

No	Symbol	Functions	No	Symbol	Functions
1	NC	(Anode side power supply for LED, +12V)	9	DB 0	Data bus line
2	V_{SS}	Gnd pin, 0V	10	DB 1	
3	V_{DD}	Positive power pin, +5V	11	DB 2	
4	$\overline{CS}$	Chip select input pin	12	DB 3	
5	V_O	LCD voltage control pin	13	DB 4	
6	$\overline{RS}$	Register select input pin	14	DB 5	
7	$\overline{WR(R/W)}$	Write input pin (Read/write select)	15	DB 6	
8	$\overline{RD (E)}$	Read input pin (Enable input pin)	16	DB 7	

* 1 : By solder option, CPU can be selected (80- or 68-series).

* 2 : The symbol in parentheses is the terminal name for the 68-series.

