

64×240
dots**DG06243**

(Built-in controller) 1/64 Duty

SANYO SEMICONDUCTOR CORP

This dot matrix module has a controller that allows 40 characters by 8 lines on 64 dots by 240 dots of graphics to be displayed. It provides the control circuits such as data RAM, character ROM. It can be interfaced with a CPU through an 8-bit bidirectional data bus and connected directly to 80-series CPU.

Mechanical characteristics

Parameter	Dimensions	unit
Out line	180.0 (W) × 65.0 (H) × 13.0(T)	mm
Min. viewing area	132.5 (W) × 39.5 (H)	mm
Dot display area	127.15(W) × 33.87(H)	mm
Dot size	0.48(W) × 0.48(H)	mm
Dot pitch	0.53(W) × 0.53(H)	mm
Weight	105 (approximately)	g

Absolute maximum ratings

Parameter	Symbol	min.	max.	unit
Logic supply voltage	$V_{DD} - V_{SS}$	-0.3	7.0	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_{ops}	0	+50	°C
Storage temperature	T_{stg}	-20	+70	°C

Electrical characteristics (Ta=25°C, $V_{DD}=5.0 \pm 0.25V$)

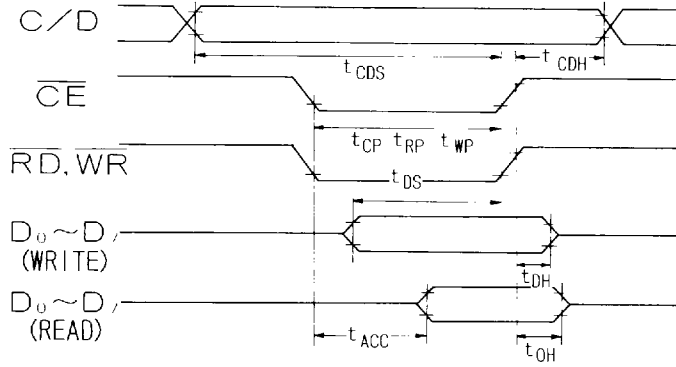
Parameter	Symbol	Condition	min.	typ.	max.	unit
Input high-level voltage	V_{IH}	Input pin	$V_{DD} - 2.2$	—	V_{DD}	V
Input low-level voltage	V_{IL}		0	—	0.8	V
LCD drive voltage	V_O	—	—	14.0	—	V
Oscillation frequency	f_{osc}	—	—	4.0	—	MHz
Supply current	I_{DD}	$V_{DD} - V_{SS} = 5.0V$	—	15.0	25.0	mA
LCD supply current	I_{LE}	$V_{DD} = V_O = 14.0V$	—	1.0	4.0	mA

Pin functions

No	Symbol	Functions	No	Symbol	Functions	
1	FGND/ELGND	Frame Gnd/EL Gnd, pin	11	DB 0	Data bus line D 0 : LSB D 7 : MSB	
2	V_{SS}	Gnd pin, 0V	12	DB 1		
3	V_{DD}	Positive power pin, +5V	13	DB 2		
4	V_{EE}	Negative power pin, -15V max.	14	DB 3		
5	\overline{WR}	Write input pin, L:data write	15	DB 4		
6	\overline{RD}	Read input pin, L:data read	16	DB 5		
7	\overline{CE}	Chip enable input pin, L:enable	17	DB 6		
8	C/D	Command/data select pin, H:command, L:data	18	DB 7		
9	NC		19	FS		Word area select pin, FS1=L(8×8)
10	RESET	Reset input pin, L:reset	20	NC		

21	EL +	(High voltage side, EL input pin)
22	EL (GND)	(Gnd side, EL input pin)

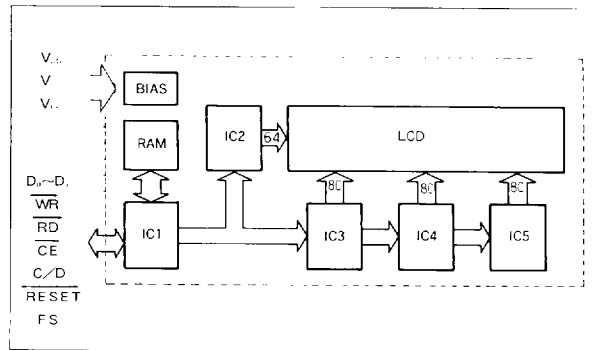
Timing chart



$V_{DD} = 5V \pm 10\%$, $V_{SS} = 0V$, $T_a = -10 \sim +70^\circ C$

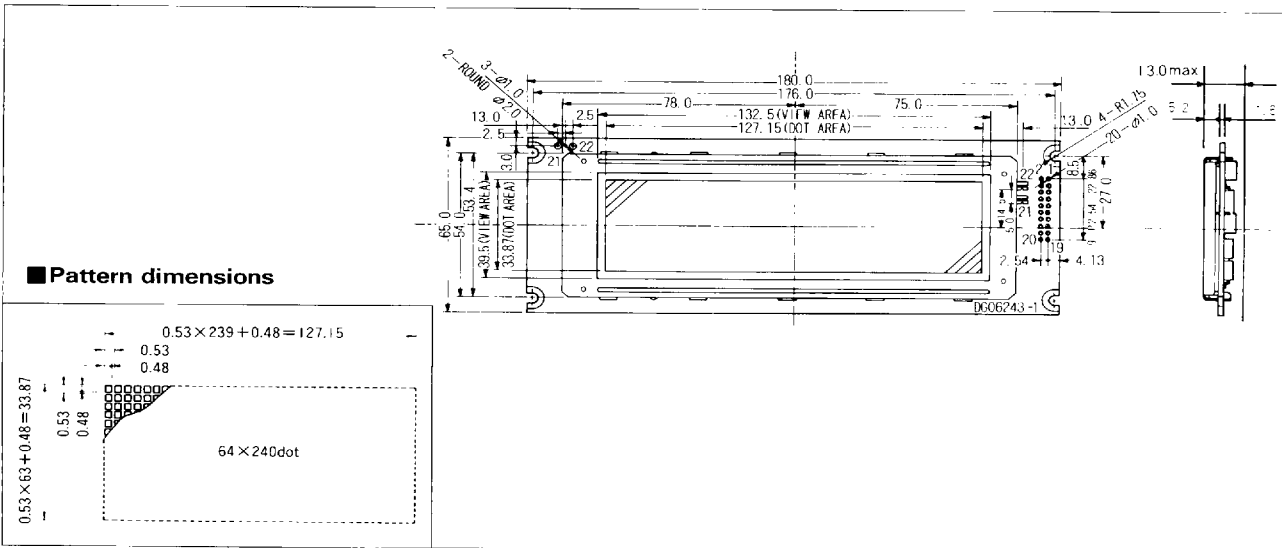
Parameter	Symbol	min.	max.	unit
C/D setup time	tCDS	100	—	ns
C/D hold time	tCDH	10	—	ns
\overline{CE} , \overline{RD} , \overline{WR} pulse width	tCP	—	—	—
	tRP	80	—	ns
	tWP	—	—	—
Data setup time	tDS	80	—	ns
Data hold time	tDH	40	—	ns
Access time	tACC	—	150	ns
Output hold time	tOH	10	50	ns

Block diagram



Module dimensions

(unit : mm)



Graphic type DG series