

***ME* DISPLAYS**

SPECIFICATIONS

FOR

LCD MODULE

SG12864D

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• FEATURES

Number of Dots	128 x 64
Built-in Controller IC	KS0107 or equivalent
Duty Cycle	1/64 Duty
Power Supply	5V
LED Forward Voltage	4.2V
Options	Backlights ,STN

• MECHANICAL PARAMETERS

Module Size	93.0W x 70.0H x 11.8 mm
Viewing Area Size	70.7W x 40.0H mm
Active Area Size	66.52W x 33.24H mm
Dot Size	0.48 x 0.48 mm
Dot Pitch	0.52 x 0.52 mm

• ABSOLUTE MAXIMUM

Item	Symbol	Min.	Max	Unit
Supply Voltage for Logic	$V_{DD} - V_{SS}$	0	+7.0	V
Supply Voltage for LCD Drive	$V_{DD} - V_O$	0	+14.0	V
Input Voltage	V_i	V_{SS}	V_{DD}	V
Operating Temperature	T_a	0	+50	C
Storage Temperature	T_{stg}	-10	+60	C

• ELECTRICAL CHARACTERISTICS

Item	Symbol	Condition	Min	Typ	Max	U
Power Supply Voltage for Logic	$V_{DD} - V_{SS}$	--	4.5	5.0	5.5	V
Power Supply Voltage for LCD	$V_{DD} - V_O$	$V_{DD}=5V$ $T_a=25C$	7.6	8.3	9.2	V
Input "High" Voltage(1)	V_{ih}	--	2.2	--	V_{DD}	V
Input "Low" Voltage(1)	V_{il}	--	--	--	0.6	V
Output "High" Voltage(1)	V_{oh}	--	2.4	--	--	V
Output "Low" Voltage(1)	V_{ol}	--	--	--	0.4	V
Power Supply Current	I_{DD}	$V_{DD} = 5.0V$	--	4.5	10	mA

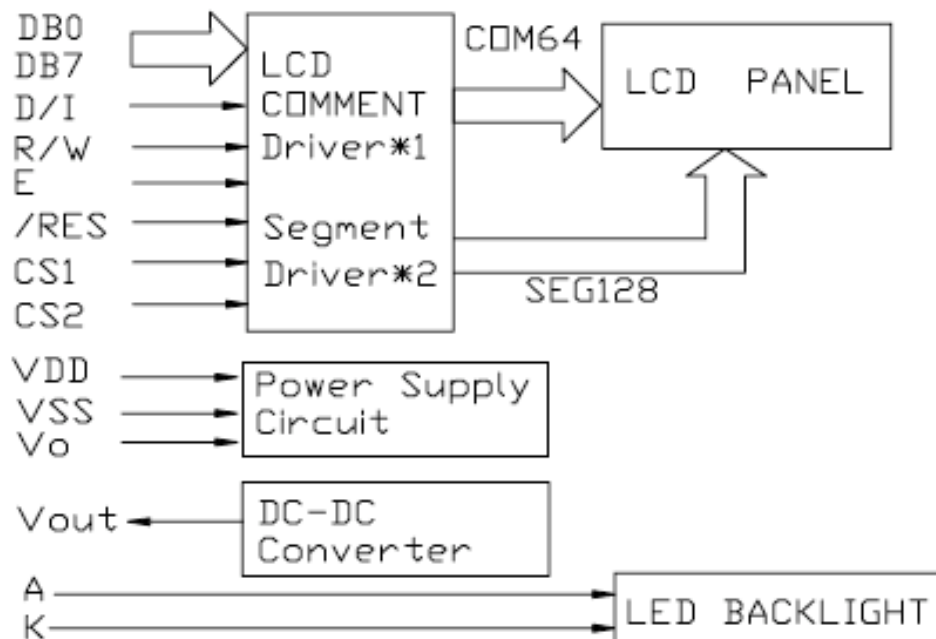
(1) Applied to terminals CS1, CS2, DB0~DB7, R/W, D/I, E RST

• PIN ASSIGNMENT

No.	Symbol
1	V _{SS}
2	V _{DD}
3	V _O
4	D/I
5	R/W
6	E
7	DB0
8	DB1
9	DB2
10	DB3

No.	Symbol
11	DB4
12	DB5
13	DB6
14	DB7
15	CS1
16	CS2
17	/RES
18	V _{OUT}
19	A
20	K

• BLOCK DIAGRAM



TIMING CHARACTERISTICS

Item	Symbol	Min	Max	Unit
Enable Cycle Time	t_{CYC}	1000	--	ns
Enable High Level Pulse Width	P_{WEH}	450	--	ns
Enable Low Level Pulse Width	P_{WEL}	450	--	ns
Enable Rise Time	t_{Er}	--	25	ns
Enable Fall Time	t_{Ef}	--	25	ns
Address Set-up Time	t_{AS}	140	--	ns
Address Hold Time	t_{AH}	10	--	ns
Data Set-up Time	t_{DSW}	200	--	ns
Data Delay Time	t_{DDR}	--	320	ns
Data Hold Time (Write)	t_{DHW}	10	--	ns
Data Hold Time (Read)	t_{DHR}	20	--	ns

TIMING DIAGRAMS

