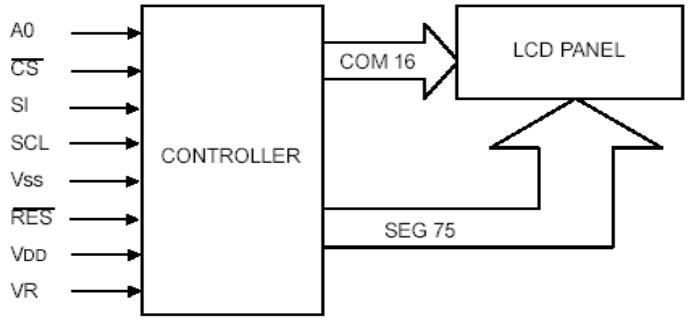
～ General Outline Dimension～

■ **TYPE OF PRODUCTS**

ITEM	DIMENSIONS	UNIT
MODULE SIZE (W x H x T)	40.0 x 26.0 x 1.75	mm
VIEWING AREA (W x H)	36.0 x 13.5	mm
ACTIVE AREA (W x H)	33.8 x 11.3	mm
DOT SIZE (W x H)	0.36 x 0.48 (“A”) + 0.36 x 0.44 (“B”)	mm
DOT PICTH (W x H)	0.40 x 0.52 (“A”) + 0.40 x 0.48 (“B”)	mm

■ **BLOCK DIAGRAM**



■ **PIN ASSIGNMENT**

PIN NO.	SYMBOL	FUNCTION
1	KEY1	KEY FUNCTION
2	KEY2	KEY FUNCTION
3	KEY3	KEY FUNCTION
4	COMMON	COMMON
5	A0	DATA / COMMAND SELECT
6	$\overline{CS}$	CHIP SELECT
7	SI	SERIAL DATA INPUT TERMINAL
8	SCL	SERIAL CLOCK INPUT TERMINAL
9	V_{DD}	Vcc
10	V_{SS}	GND
11	V5	POWER SUPPLY FOR LCD DRIVING VOLTAGE(V0-V5) (OP AMP BUILT-IN)
12	V4	
13	V3	
14	V2	
15	V1	
16	V0	
17	VR	VOLTAGE REGULATING PIN
18	V_{OUT}	DC / DC VOLTAGE CONVERTER CAPACITORS (I / O)
19	CAP2-	
20	CAP2+	
21	CAP1-	
22	CAP1+	
23	V_{SS}	GND
24	V_{DD}	VCC
25	$\overline{RES}$	RESET

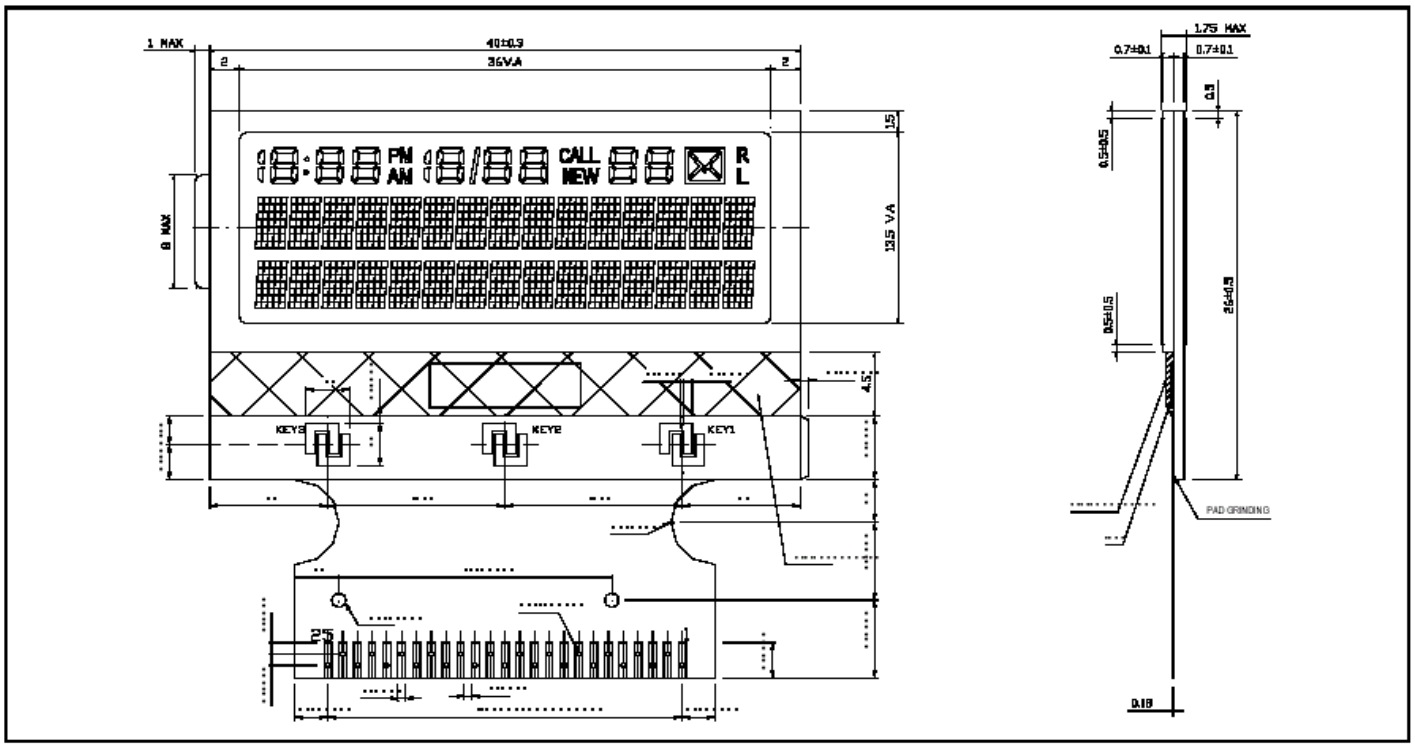
■ **ELECTRICAL CHARACTERISTICS**

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	V_{DD}-V_{SS}	Ta=25℃	2.7	3.0	3.3	V
POWER SUPPLY FOR LCD DRIVING	V_{DD}-V5	Ta=25℃	5.82	6.0	6.2	V
INPUT VOLTAGE “H ” LEVEL	V_{IH}	—	0.8V_{DD}	—	V_{DD}	V
INPUT VOLTAGE “L ” LEVEL	V_{IL}	—	V_{SS}	—	0.2V_{DD}	V
OUTPUT VOLTAGE “H ” LEVEL	V_{OH}	—	—	—	—	V
OUTPUT VOLTAGE “L ” LEVEL	V_{OL}	—	—	—	—	V
POWER SUPPLY CURRENT	I_{DD}	V5=-7V without load	—	—	100	uA

■ **ABSOLUTE MAXIMUM RATING**

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	V_{DD}-V_{SS}	Ta=25℃	-0.3	—	6.0	V
POWER SUPPLY FOR LCD DRIVING	V_{DD}-V5	Ta=25℃	-0.3	—	12.0	V
INPUT VOLTAGE	V_{IN}	Ta=25℃	-0.3	—	V_{DD}+0.3	V
OPERATING TEMPERATURE	T_{OPR}	—	0	—	+50	℃
STORAGE TEMPERATURE	T_{STG}	—	-10	—	+60	℃

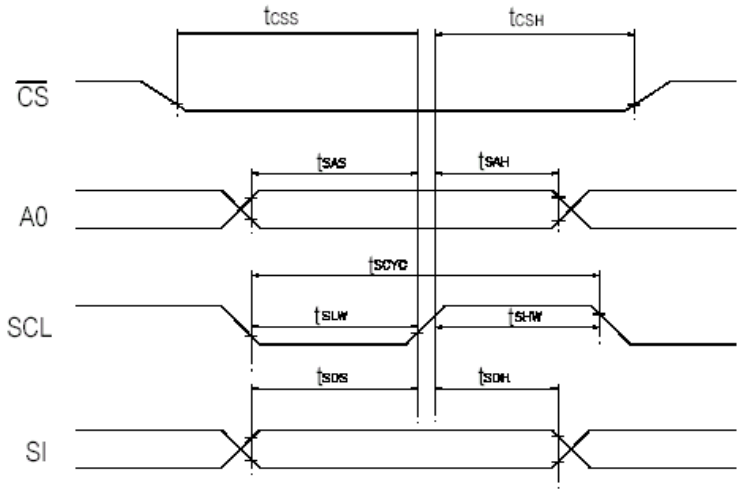
■ OUTLINE DIMENSIONS



■ TIMING CHARACTERISTICS

(V_{DD}=2.4 to 3.6V, Ta=-40 to +85℃)

ITEM	SIGNAL	SYMBOL	MEASURING CONDITION	MIN.	MAX.	UNIT
SERIAL CLOCK CYCLE	SCL	t_{SCYC}	Vss=-3.0	700	—	ns
			-2.7	800	—	ns
			-2.4	1000	—	ns
SCL "H" PULSE WIDTH		t_{SHW}		300	—	ns
SCL "L" PULSE WIDTH		t_{SLW}		300	—	ns
ADDRESS SETUP TIME	A0	t_{SAS}		50	—	ns
ADDRESS HOLD TIME		t_{SAH}	Vss=-3.0	350	—	ns
			-2.7	400	—	ns
			-2.4	500	—	ns
DATA SETUP TIME	SI	t_{SDS}		50	—	ns
DATA HOLD TIME		t_{SDH}		50	—	ns
CS-SCL TIME	CS	t_{CSS}		150	—	ns
		t_{CSH}	Vss=-3.0	550	—	ns
			-2.7	650	—	ns
			-2.4	700	—	ns



SERIAL TIMING CHARACTERISTICS