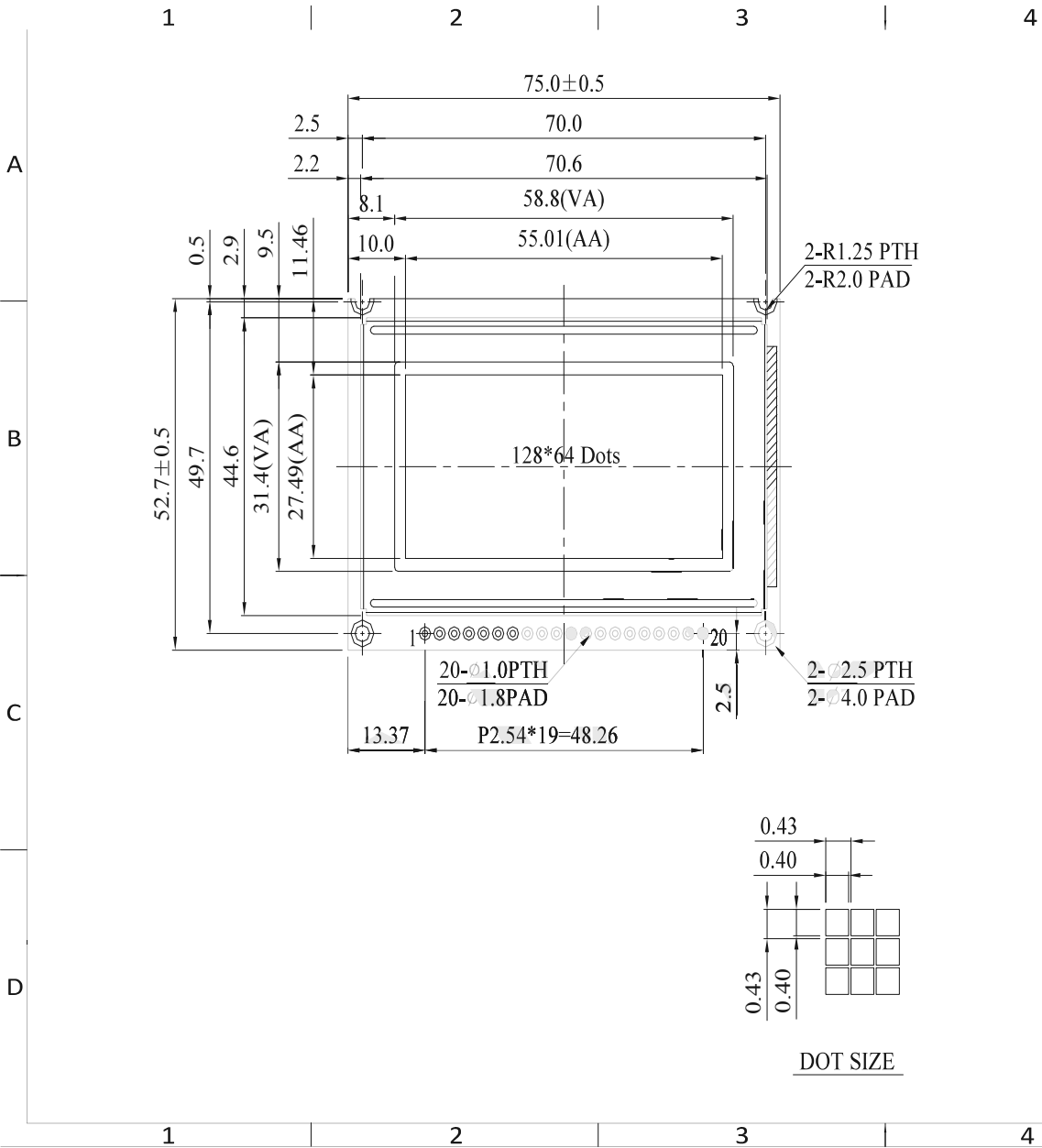
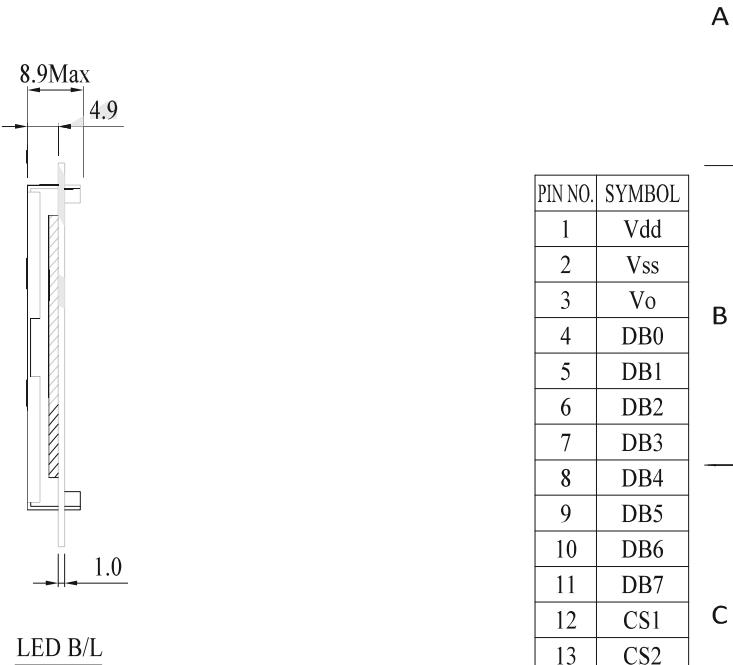


Mechanical Drawing



Rev	Description	Date



PIN NO.	SYMBOL
1	Vdd
2	Vss
3	Vo
4	DB0
5	DB1
6	DB2
7	DB3
8	DB4
9	DB5
10	DB6
11	DB7
12	CS1
13	CS2
14	RST
15	R/W
16	D/I
17	E
18	Vee
19	A
20	K

	Date	
Gen. Tolerance ±0.3mm	Unit mm	Model:

Pin Description and Wiring Diagram

Pin No.	Symbol	External Connection	Function Description
1	VDD	Power Supply	Supply Voltage for Logic (+5.0V)
2	VSS	Power Supply	Ground
3	V0	Adj. Power Supply	Supply Voltage for Contrast (approx. -3.0V)
4-11	DB0-DB7	MPU	Bi-directional 8-bit data bus
12	CS1B	MPU	Chip Selection: CS1=H, CS2=L : select IC1 (left side) CS1=L, CS2=H : select IC2 (right side)
13	CS2B	MPU	
14	/RST	MPU	Active LOW Reset signal
15	R/W	MPU	Read/Write select signal. R/W=1: Read R/W: =0: Write
16	RS	MPU	Register Select: 1=Data, 0= Instruction
17	E	MPU	Operation Enable signal. Falling edge triggered.
18	VEE	Power Supply	Negative voltage output (- 5V)
19	LED+	Power Supply	Backlight Anode(+3.5V)
20	LED-	Power Supply	Backlight Cathode (Ground)

Recommended LCD connector: 2.54mm pitch pins

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	Top	Absolute Max	-20	-	+70	°C
Storage Temperature Range	Tst	Absolute Max	-30	-	+80	°C
Supply Voltage	VDD	-	4.5	5.0	5.5	V
Supply Current	IDD	Ta=25°, VDD=5.0V	1.0	2.0	4.0	mA
Supply for LCD (contrast)	VDD-V0	Ta=25°	7.8	8.0	8.2	V
"H" Level input	VIH	-	0.7*VDD	-	VDD	V
"L" Level input	VIL	-	VSS	-	0.3*VDD	V
"H" Level output	VOH	-	2.4	-	VDD	V
"L" Level output	VOL	-	VSS	-	0.4	V
Backlight Supply Voltage	VLED	-	3.4	3.5	3.6	V
Backlight Supply Current	ILED	VLED=3.5V	43.2	48	60	mA

Optical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Optimal Viewing Angles	Top	φY+	Cr ≥ 2	-	20	-	°
	Bottom	φY-		-	40	-	°
	Left	θX-		-	30	-	°
	Right	θX+		-	30	-	°
Contrast Ratio		Cr	-	-	3	-	-
Response Time	Rise	Tr	-	-	200	300	ms
	Fall	Tf	-	-	250	350	ms