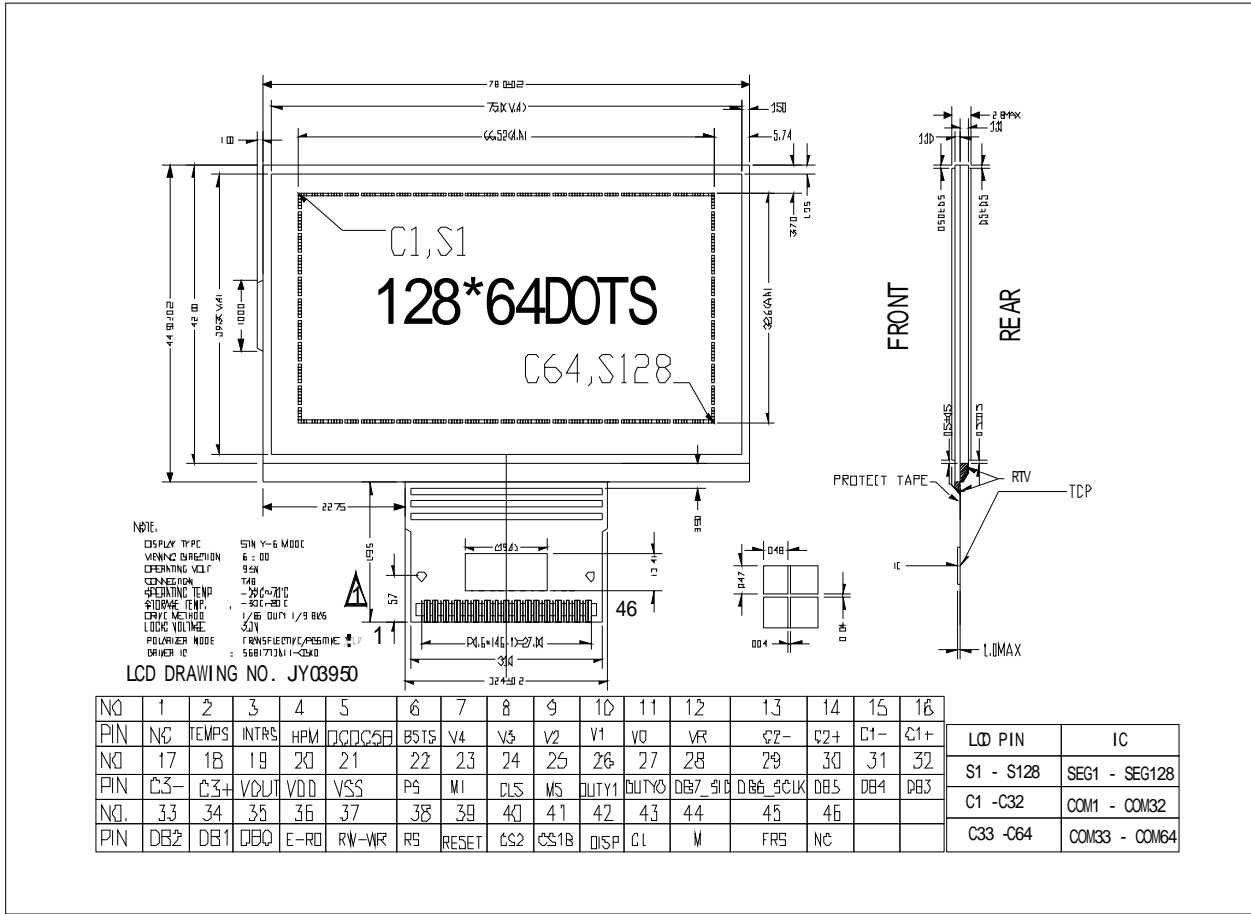
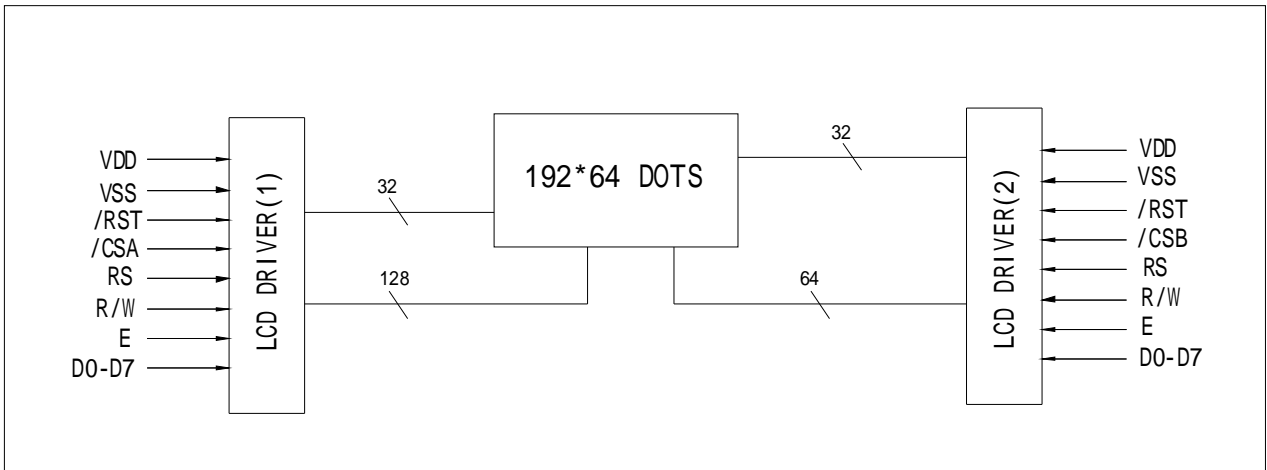


## 1.0 DIMENSIONAL DRAWING



## 2.0 BLOCK DIAGRAM



## 3.0 ELECTRICAL CHARACTERISTICS Ta=25 °C VDD=3.0V±0.25V

Item	Symbol	Test Condition	Standard Value			
			Min.	Typ.	Max.	Unit
Power Supply for Logic	VDD	25°C	2.4	3.3	3.6	V
LCD Operation Voltage	Vop.	25°C	9.3	9.5	9.7	V
LCM Current Consumption	Idd	25°C			1.0	mA

## 4.0 ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Standard Value		
		Min.	Max.	Unit
Power Supply for Logic	VDD	-0.3	7.0	V
LCD Operation Voltage	Vo.	-0.3	17.0	V
Input Voltage	Vin	-0.3	Vdd+0.3	V
Operating Temp	Top.	-20	70	°C
Storage Temp	Tst.	-30	80	°C

## 5.0 PIN ASSIGNMENT

Pin No.	Symbol	Description
1	NC	
2	TEMPS	Selects temperature coefficient of the reference voltage
3	INTRS	Internal resistors select pin INTRS = "H": use the internal resistors. INTRS = "L": use the external resistors.
4	HPM	Power control pin of the power supply circuit for LCD driver
5	DCDC5B	5 times boosting circuit enable input pin
6	BSTS	Selects input voltages of the built-in voltage converter
7	V4	$\approx 1.0\mu\text{F} \rightarrow \text{Vss}$
8	V3	$\approx 1.0\mu\text{F} \rightarrow \text{Vss}$
9	V2	$\approx 1.0\mu\text{F} \rightarrow \text{Vss}$
10	V1	$\approx 1.0\mu\text{F} \rightarrow \text{Vss}$
11	V0	$\approx 1.0\mu\text{F} \rightarrow \text{Vss}$
12	VR	V0 voltage adjustment pin It is valid only when on-chip resistors are not used (INTRS = "L")
13	C2-	$\approx 1.0\mu\text{F} \rightarrow \text{C2+}$
14	C2+	$\approx 1.0\mu\text{F} \rightarrow \text{C2-}$
15	C1-	$\approx 1.0\mu\text{F} \rightarrow \text{C1+}$
16	C1+	$\approx 1.0\mu\text{F} \rightarrow \text{C1-}$
17	C3-	$\approx 1.0\mu\text{F} \rightarrow \text{C3+}$
18	C3+	$\approx 1.0\mu\text{F} \rightarrow \text{C3-}$
19	VOUT	$\approx 1.0\mu\text{F} \rightarrow \text{Vss}$
20	VDD	Power supply VDD:+3.3V
21	VSS	Ground
22	PS	Parallel / Serial data input select input H:Parallel; L:Serial
23	MI	Microprocessor interface selects input pin MI = "H": 6800-series MPU interface MI = "L": 8080-series MPU interface
24	CLS	Built-in oscillator circuit enable / disable select pin CLS = "H": enable CLS = "L": disable
25	MS	Master / Slave operation select pin MS = "H": master operation MS = "L": slave operation
26	DUTY1	The LCD driver duty ratio select pin
27	DUTY0	The LCD driver duty ratio select pin
28	DB7-SID	Data bus
29	DB6-SCLK	Data bus
30	DB5	Data bus
31	DB4	Data bus
32	DB3	Data bus
33	DB2	Data bus
34	DB1	Data bus
35	DB0	Data bus
36	E-RD	Read / Write execution control pin
37	RW-WR	Read / Write execution control pin
38	RS	H: DATA; L: CONTROL
39	RESET	L: RESET
40	CS2	Data / instruction I/O is enabled only when CS1 is "L" and CS2 is "H".
41	CS1	Data / instruction I/O is enabled only when CS1 is "L" and CS2 is "H"
42	DISP	LCD display blanking control input / output
43	CL	Display clock input / output pin

44	M	LCD AC signal input / output pin
45	FRS	Static driver segment output pin
46	NC	

**Remark**

1. LCD option: STN, FSTN .

2. Customized module.

3. Backlight option: EL backlight feature, other specs not available on catalog is under request.