

### ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Min.	Max.	Unit
Supply Voltage(Logic)	V <sub>DD</sub> - V <sub>SS</sub>	-0.3	4.0	V
Supply Voltage(OLED)	V <sub>CC</sub> - V <sub>SS</sub>	-0.3	15.0	V
Input Voltage	V <sub>I</sub>	-0.3	V <sub>DD</sub> + 0.3	V
Operating Temp.	T <sub>opr</sub>	-40	70	°C
Storage Temp.	T <sub>stg</sub>	-40	80	°C

### MECHANICAL DATA

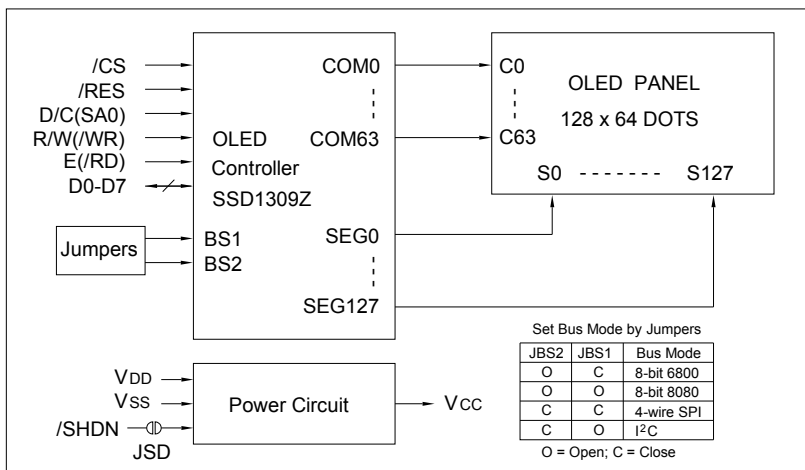
Item	Nominal Dimensions	Unit
Module Size ( W x H x T )	55.0 x 36.0 x 8.0	mm
Viewing Area ( W x H )	37.5 x 19.5	mm
Dot Pitch ( W x H )	0.274 x 0.274	mm
Dot Size ( W x H )	0.254 x 0.254	mm
Weight	Approx. 12	g

### ELECTRICAL CHARACTERISTICS ( V<sub>DD</sub>=2.8V to 3.3V )

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input High Voltage	V <sub>IH</sub>	--	0.8V <sub>DD</sub>	--	V <sub>DD</sub>	V
Input Low Voltage	V <sub>IL</sub>	--	0	--	0.2V <sub>DD</sub>	V
Output High Voltage	V <sub>OH</sub>	I <sub>OH</sub> = - 0.1mA	0.9V <sub>DD</sub>	--	V <sub>DD</sub>	V
Output Low Voltage	V <sub>OL</sub>	I <sub>OL</sub> = 0.1mA	0	--	0.1V <sub>DD</sub>	V
Supply Current	I <sub>DD</sub> <sup>Note 1</sup>	V <sub>DD</sub> = 3.3V	--	95.0	120.0	mA
	I <sub>DD</sub> <sup>Note 2</sup>	V <sub>DD</sub> = 3.3V	--	170.0	210.0	mA

Note 1: White color, 50% display area turned on, contrast register is set to CFH  
 Note 2: White color, 100% display area turned on, contrast register is set to CFH

### BLOCK DIAGRAM



### PIN CONNECTIONS (CN1/CN2)

Pin	Symbol	Level	Function
1	V <sub>SS</sub>	0V	Ground
2	V <sub>DD</sub>	2.8V to 3.3V	Power supply for logic
3	NC or /SHDN	-	JSD open: No connection JSD close: Shutdown input for V <sub>CC</sub> converter /SHDN="H": V <sub>CC</sub> converter is on /SHDN="L": V <sub>CC</sub> converter is off
4	D/C (SA0)	H/L	Data/Command selection for parallel or SPI mode "H": Display data; "L": Instruction code Slave address SA0 for I <sup>2</sup> C mode
5	R/W (/WR)	H/L	R/W for 68 MPU. "H": Read; "L": Write /WR for 80 MPU. Write data at the rising edge of /WR.
6	E (/RD)	H/L	Enable for 68 MPU. Read data when E is "H"; write data at the rising edge. /RD for 80 MPU. Active "L".
7	D0	H/L	For 6800/8080 parallel mode: D0 to D7 are 8-bit bi-directional data bus
8	D1	H/L	
9	D2	H/L	For 4-wire SPI mode: D0 is serial clock input SCLK D1 is serial data input SDIN
10	D3	H/L	
11	D4	H/L	For I <sup>2</sup> C mode: D0 is serial clock SCL D1 is serial data input SDA <sub>IN</sub> D2 is serial data output SDA <sub>OUT</sub> Connect D1 and D2 together to serve as SDA
12	D5	H/L	
13	D6	H/L	
14	D7	H/L	
15	/RES	L	Reset signal. Active "L".
16	/CS	L	Chip selection signal. Active "L".