Specification Sheet

Model No. : ZJY117

Description : 1.8inch TFT LCD Screen resolution 160*128 Size:34*45.83*2.25mm Driver Chip ST7735 interface SPI 18Pin Voltage 3.3V Font Color Option ZJY117

TABLE OF Contents

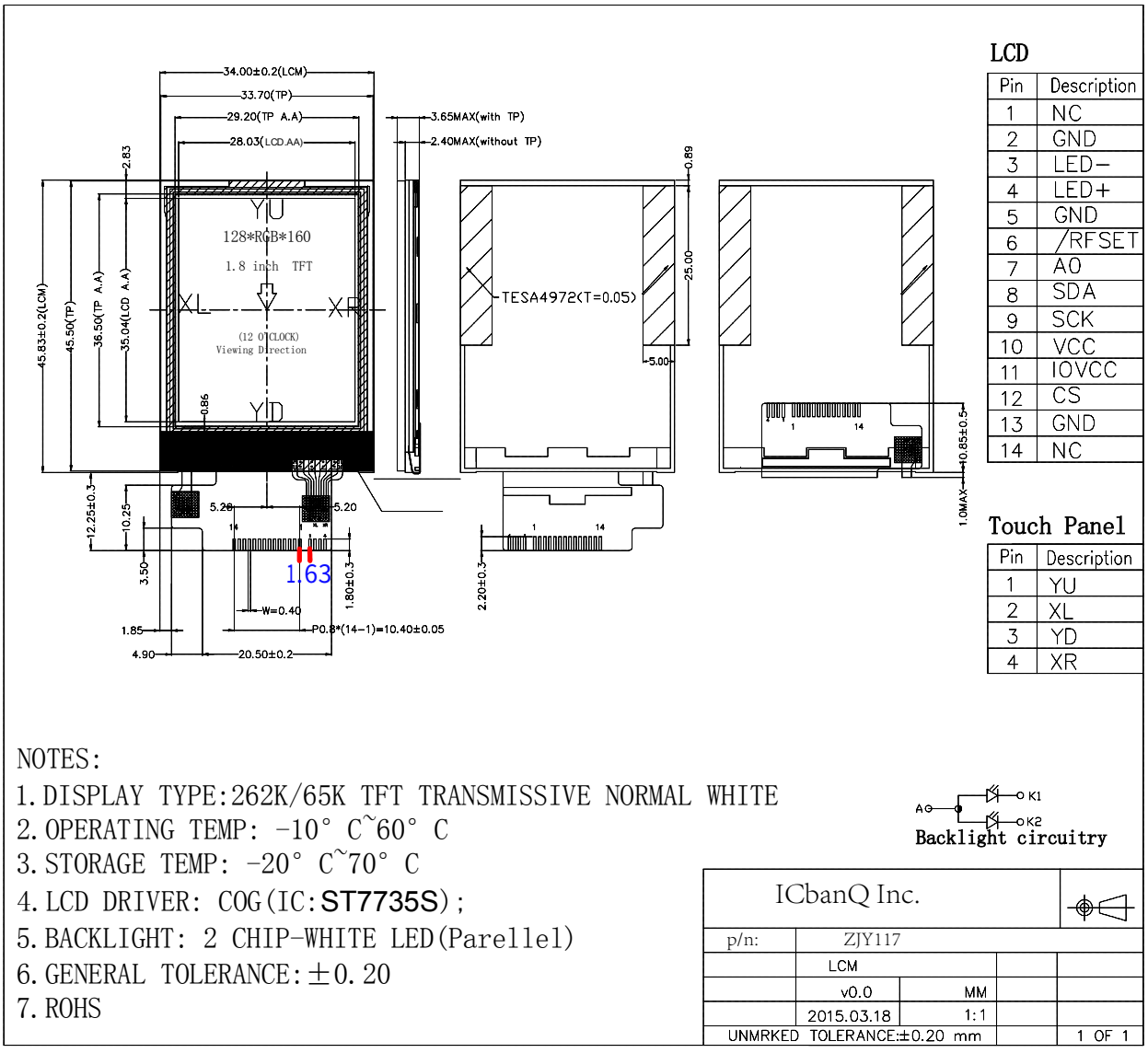
1.General Description

MODEL NO	**ZJY117**
Display Mode	Transmissive
Display Format	Graphic 128RGB*160 Dot-matrix
Input Data	SPI-4wire interface
Viewing Direction	12 o'clock
Drive	ST7735S

2. Mechanical Specification

Item	Specifications	Unit
Dimensional outline Without touch	34.00(W)*45.83(H)*2.40max(T) (FPC not include)	mm
Dimensional outline with touch	34.00(W)*45.83(H)*3.65max(T) (FPC not include)	mm
Resolution	128RGB*160	dots
LCD Active area	28.03 (W)*35.04 (H)	mm
Pixel size	0.219(W)*0.219(H)	mm

3.Mechanical Dimension



LCD

Pin	Description
1	NC
2	GND
3	LED−
4	LED+
5	GND
6	/RFSET
7	A0
8	SDA
9	SCK
10	VCC
11	IOVCC
12	CS
13	GND
14	NC

Touch Panel

Pin	Description
1	YU
2	XL
3	YD
4	XR

NOTES:

1. DISPLAY TYPE:262K/65K TFT TRANSMISSIVE NORMAL WHITE
2. OPERATING TEMP: -10° C~60° C
3. STORAGE TEMP: -20° C~70° C
4. LCD DRIVER: COG(IC:ST7735S);
5. BACKLIGHT: 2 CHIP-WHITE LED(Parellel)
6. GENERAL TOLERANCE:±0.20
7. ROHS

Backlight circuitry

ICbanQ Inc.			
p/n:	ZJY117		
	LCM		
	v0.0	MM	
	2015.03.18	1:1	
UNMRKED TOLERANCE:±0.20 mm			1 OF 1

4. Electrical Maximum Ratings

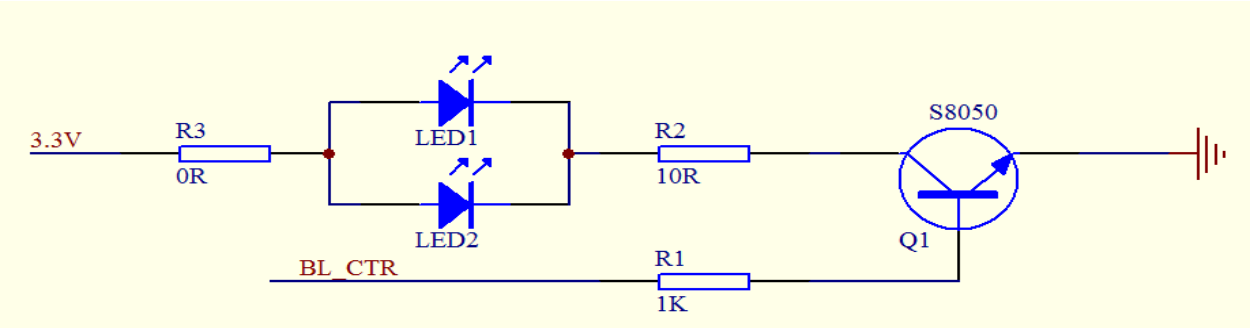
Item	Symbol	Min	Max	Unit	Note
Supply voltage（IOVCC）	V	1.8	3.3	V	
Supply voltage（VCC）	V	2.8	3.3	V	
Operating temperature 工	T_{OPR}	-20	70	℃	
Storage temperature	T_{STR}	-30	80	℃	

NOTE: IOVCC and VCC can be directly connected together to share a single (2.8V~3.3V) voltage supply.

5. Backlight Characteristic

Item	Symbol	Min	Typical	Max	Unit
LED module Forward voltage	V_{LED}	2．9	3.1	3.3	V
LED module current	I_{LED}	-	30	-	mA
LCD Surface Luminance	L_S	150	180	-	Cd/m^2
LCM Surface brightness uniform	L_D	80	-	-	%

Attachment: backlight reference circuit



6. Module Function Description Display module pin definition

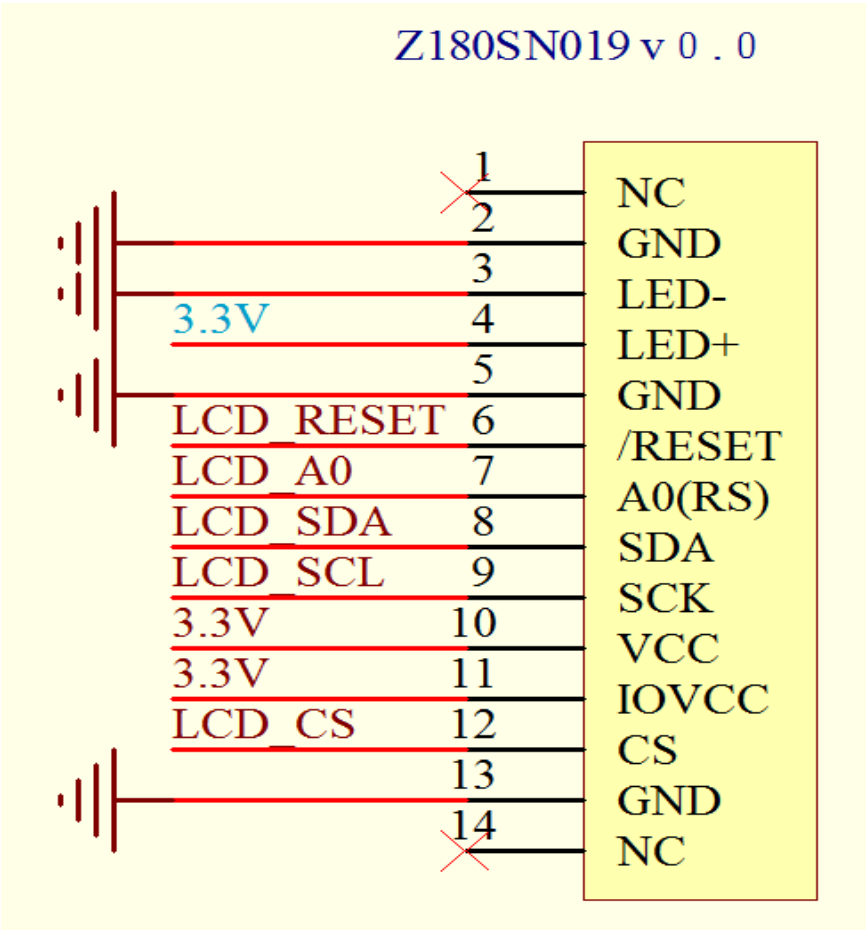
6.1 Display pin definition (**Display screen**)

PIN No.	Symbol	Description	Notes
1	NC	No connection	
2	GND	Ground	
3	LED-	Cathode of Backlight	
4	LED+	Anode of Backlight (Backlight positive 2.9-3.3 volt supply)	
5	GND	Ground	
6	/RESET	LCM Reset pin. Signal is active low	
7	A0	Register select pin RS='0': Display data. RS='1': Display data.	
8	SDA	Serial data input / output.	
9	SCK	Serial clock pin.	
10	VCC	Power supply for LCM (Display power supply pin 2.8-3.3V)	
11	IOVCC	Power supply for LCM (Display power supply pin 1.8-3.3V)	
12	CS	Chip select pin("Low" enable) (display drive chip select pin, active low)	
13	GND	Ground	
14	NC	No connection	

6.2 Touch screen pin definition (touch panel definition)

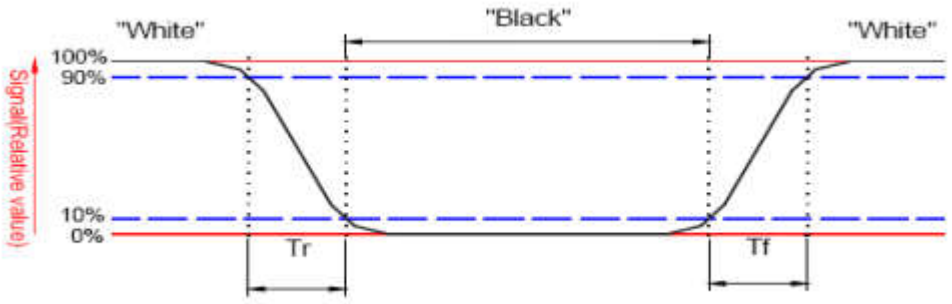
PIN No.	Symbol	Description	Notes
1	YU	Touch panel control pin	
2	XL	Touch panel control pin	
3	YD	Touch panel control pin	
4	XR	Touch panel control pin	

Attachment: Display Z180ST029 v0.0 Reference application circuit



7.Response time&Contrast ratio

Item	Symbol	Condition	Remark			Unit
			Min.	Typ.	Max.	
Response time	Tr+Tf	θ =0°	-	30	60	ms
Contrast ratio	CR	θ =0°	200	300	-	



Response time icon

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the "white" state}}{\text{Brightness on the "black" state}}$$

8.Viewing Angle

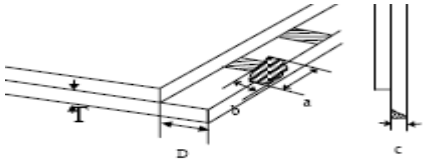
Item	Symbol	Condition	Remark			Unit
			Min.	Typ.	Max.	
Viewing angle	Top	CR≧10	20	30	-	Deg.
	Bottom	CR≧10	40	45	-	
	Left	CR≧10	40	45	-	
	Right	CR≧10	40	45	-	

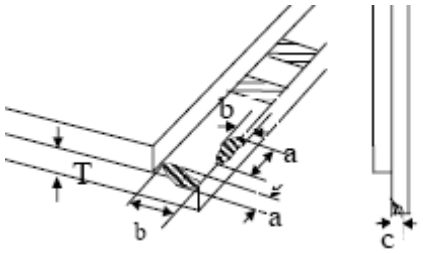
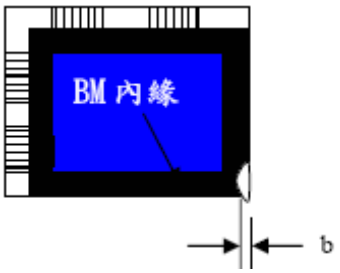
9. Reliability Trial

NO.	ITEM	CONDITION	CRITERION
1	High Temperature Non-Operating Test	80℃*120Hrs	No Defect Of Operational Function In Room Temperature Are Allowable
2	Low Temperature Non-Operating Test	-30℃*120Hrs	
3	High Temperature/Humidity Non Operating Test	60℃*90%RH*120Hrs	
4	High Temperature Operating Test	70℃*72Hrs	
5	Low Temperature Operating Test	-20℃*72Hrs	
6	Thermal Shock Test	-20 ℃ (30Min) ν 70 ℃ (30Min) *10CYCLES	

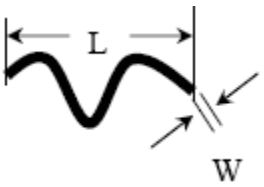
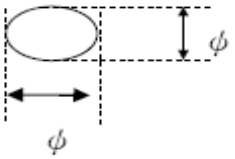
10.Inspection standards

10.1Glass defect

NO	Defect item	Criteria	Remark
1	Dimension Unconformity (Major defect)	By Engineering Drawing	
2	Cracks (Major defect)	1. Linear cracks panel 【Reject】 2. Nonlinear crack contrast by limited sample	
3	Glass extrude the conductive area (minor defect)	a: disregards and no influence assemblage. 1) b≤1/3Pin width(non bonding area) 【Accept】 2)bonding area≤0.5㎜ 【Accept】	A: Length, b: Width
4	Pin-side ,conductive area damaged (minor defect)	(a c: disregards) b≤1/3of effective length for bonding electrode 【Accept】	a: length, b: Width, c: Thickness 
5	Pin-side,non-conductive area damaged (minor defect)	1)Damage area don't touch the ITO (Inclueling contraposition mark, except scribing mark) 【Accept】 2)C<T b≦BM1/3of width	a: Length, b: Width c: Thickness

		【Accept】 3)c=T b not touch the seal glue 【Accept】 4)a disregards	
6	Non-pin-side damage (minor defect)	c<T 1)b exceeds 1/3Bm 【Reject】 c=T b not touch the seal glue 【Reject】	c: Thickness b: width of  damage

10.2LCD appearance defect(View area)

NO	Defect item	Criteria		Remark
1	Fiber、glass cratch、polarizer scratch/folded (minor defect)	Specification	Allowable	note1:L: Length, W: Width note2: disregard if out of AA 
		W≦0.03mm	disregard	
		0.03mm<W≦0.05mm; L≦3.0mm	2	
		0.05mm<W≦0.1mm; L≦3.0mm	1	
		W>0.1mm;L>3.0mm	0	
2	Polarizer bubble、concave and convex (minor defect)	ϕ≦0.2mm	disregard	note1: ϕ=(L+W)/2, L:Length, W :Width note2:disregard if out of AA
		0.2mm<ϕ≦0.3mm	2	
		0.3mm<ϕ≦0.5mm	1	
		0.5mm<ϕ	0	
3	Black dots、dirty dots、impurities、eye winker (minor defect)	ϕ≦0.15mm	disregard	note2:disregard if out of AA 
		0.15mm<ϕ≦0.25mm	2	
		0.25mm<ϕ≦0.3mm	1	
		0.3mm<ϕ	0	
4	Polarizer prick (minor defect)	ϕ≦0.1mm	disregard	note1: ϕ=(L+W)/2, L=Length, W=Width note2:the distance between two dots>5mm
		0.1mm<ϕ≦0.25mm	3	
		ϕ>0.25mm	0	

11.Package Method

Module shipping package schematic: