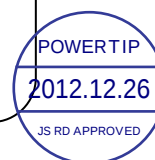


SPECIFICATIONS

CUSTOMER	:	CTW1382
SAMPLE CODE	:	SE9665WRF-002-I02Q
MASS PRODUCTION CODE	:	PE9665WRF-002-I02Q
SAMPLE VERSION	:	02
SPECIFICATIONS EDITION	:	005
DRAWING NO. (Ver.)	:	LMD- PE9665WRF-002-I02Q (Ver:005)
PACKAGING NO. (Ver.)	:	PKG- PE9665WRF-002-I02Q (Ver:003)

Customer Approved

Date:



Approved	Checked	Designer
閻偉	劉進	趙冬冬

- ☐ Preliminary specification for design input
- ☒ Specification for sample approval

POWERTIP TECH. CORP.

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NO.PT-A-005-8



History of Version

[illegible]

Total : 26 Page

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- 1.2 Mechanical Specifications
- 1.3 Absolute Maximum Ratings
- 1.4 DC Electrical Characteristics
- 1.5 Optical Characteristics
- 1.6 Backlight Characteristics

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- 2.1 Counter Drawing
- 2.2 Interface Pin Description
- 2.3 Timing Characteristics

3. QUALITY ASSURANCE SYSTEM

- 3.1 Quality Assurance Flow Chart
- 3.2 Inspection Specification

4. RELIABILITY TEST

- 4.1 Reliability Test Condition

5. PRECAUTION RELATING PRODUCT HANDLING

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- 5.2 Handling
- 5.3 Storage
- 5.4 Terms of Warranty

Appendix :

- 1. LCM drawing
- 2. LCM Packaging Specifications

Note : For detailed information please refer to IC data sheet : SITRONIX –ST7579-G2

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Type	96 * 65 Dots
LCD Type	FSTN, Positive, Transflective
Driver Condition	LCD Module :1/68 Duty, 1/9 Bias
Viewing Direction	6 O'clock
Backlight	LED B/L
Weight	5 g
Interface	3-line SPI (serial peripheral interface)
Driver IC	SITRONIX – ST7579-G2
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer web side : http://www.powertip.com.tw/news/LatestNews.asp

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	34.0 (W) * 30.4 (L) * 3.1 (H)	mm
Viewing Area	27.8 (W) * 18.9 (L)	mm
Active Area	25.42 (W) * 16.88 (L)	mm
Dot Size	0.245 (W) * 0.24 (H)	mm
Dot Pitch	0.265 (W) * 0.26 (H)	mm

Note : For detailed information please refer to LCM drawing

1.3 Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply Voltage	V _{DD}	—	-0.3	3.6	V
LCD Driver Supply Voltage	V ₀ –XV ₀	—	-0.3	15	V
Operating Temperature	T _{OP}	—	-20	70	°C
Storage Temperature.	T _{ST}	—	-30	80	°C
Storage Humidity	H _D	Ta < 40 °C	20	90	%RH

1.4 DC Electrical Characteristics

Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Logic Supply Voltage	V _{dd}	—	2.6	2.8	3.0	V
“H” Input Voltage	V _{IH}	—	0.7V _{DD}	—	V _{DD}	V
“L” Input Voltage	V _{IL}	—	V _{SS}	—	0.3V _{DD}	V
“H” Output Voltage	V _{OH}	I _{OUT} =1mA, V _{DD} =1.8V	0.8V _{DD}	—	V _{DD}	V
“L” Output Voltage	V _{OL}	I _{OUT} =-1mA, V _{DD} =1.8V	V _{SS}	—	0.2V _{DD}	V
Supply Current	I _{dd}	V _{DD} = 2.8 V; V _{OP} = 8.5 V; Pattern= Full display	—	0.2	—	mA
		V _{DD} = 2.8 V; V _{OP} = 8.5 V; Pattern= Horizontal line*1	—	0.2	0.5	
LCM Driver Voltage	V _{OP} *2	-20°C	8.7	8.8	8.9	V
		25°C	8.3	8.5	8.7	
		70°C	7.7	7.8	7.9	

NOTE: *1 The Maximum current display;

*2 The VOP test point is V0~XV0.

1.5 Optical Characteristics

LCD Panel: 1/68 Duty, 1/9 Bias, $V_{LCD} = 8.5\text{ V}$, $T_a = 25^\circ\text{C}$

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit	Reference
Response Time	Rise	tr	25°C	-	120 ms	180 ms	-	Note2
	Fall	tf	25°C	-	200 ms	300 ms		
Viewing angle range	Top	$\theta Y+$	$C \geq 2.0$, $\phi = 90^\circ$	-	20	-	-	Note 1
	Bottom	$\theta Y-$		-	30	-		
	Left	$\theta X-$		-	20	-		
	Right	$\theta X+$		-	25	-		
Contrast Ratio		C	$\theta = 0^\circ$, $\phi = 90^\circ$	2	-	-	-	Note 3
Average Brightness (with B/L)		IV	IF= 20 mA	110	165	220	cd/m ²	-
CIE Color Coordinate (With B/L)		X		0.23	0.28	0.33	-	Note 4
		Y		0.25	0.30	0.35	-	
Uniformity		ΔB		70	-	-	%	

Note 4:

1 : $\Delta B = B(\min) / B(\max) * 100\%$

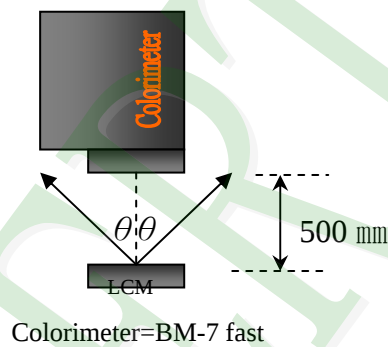
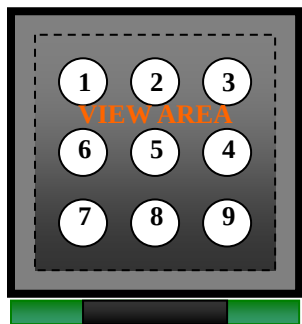
2 : Measurement Condition for Optical Characteristics:

a : Environment: $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ / $60 \pm 20\%$ R.H , no wind , dark room below 10 Lux at typical lamp current and typical operating frequency.

b : Measurement Distance: 500 ± 50 mm , ($\theta = 0^{\circ}$)

c : Equipment: TOPCON BM-7 fast , (field 1°) , after 10 minutes operation.

d : The uncertainty of the C.I.E coordinate measurement ± 0.01 , Average Brightness $\pm 4\%$

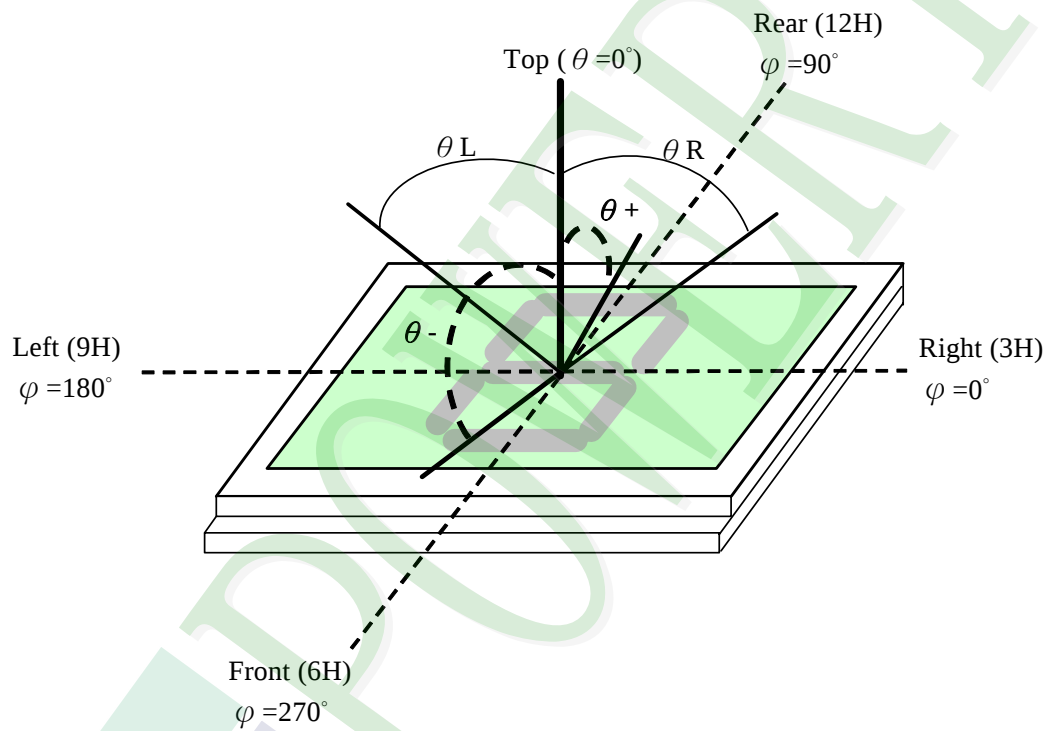




Note 1.

Optical characteristics-2

Viewing angle

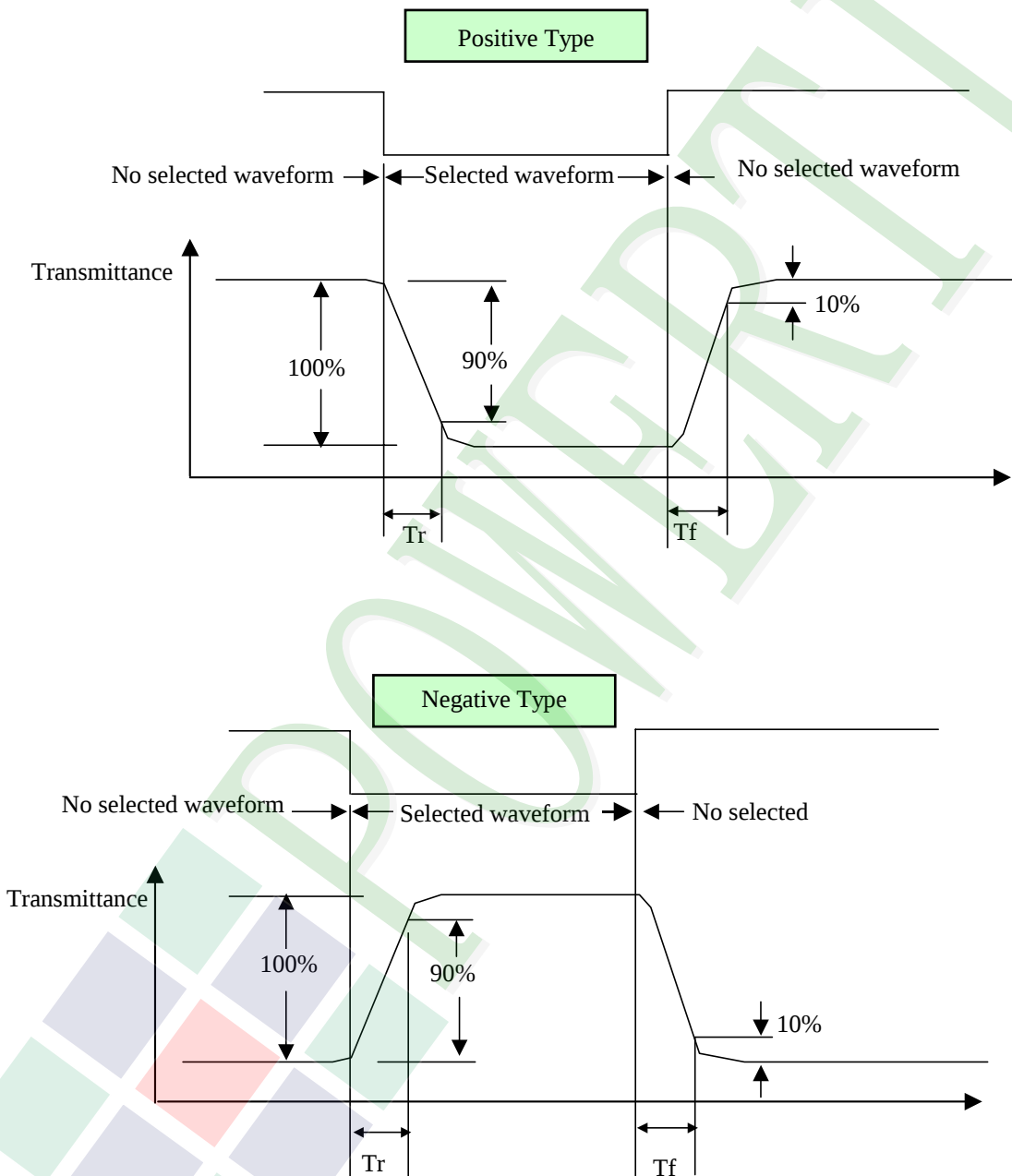




Note 2.

Optical characteristics-3

Fig.2 Definition of response time





Electrical characteristics-2

※2 Drive waveform

V_{op} : Drive voltage

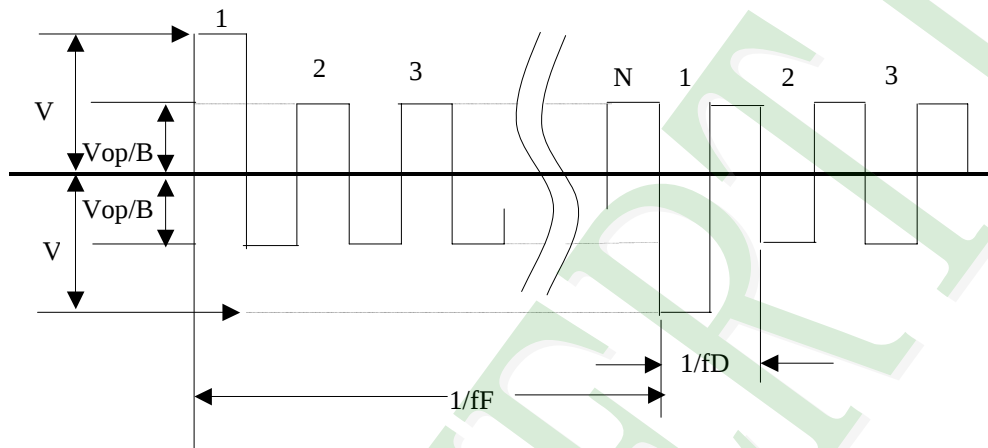
f_F : Frame frequency

$1/B$: Bias

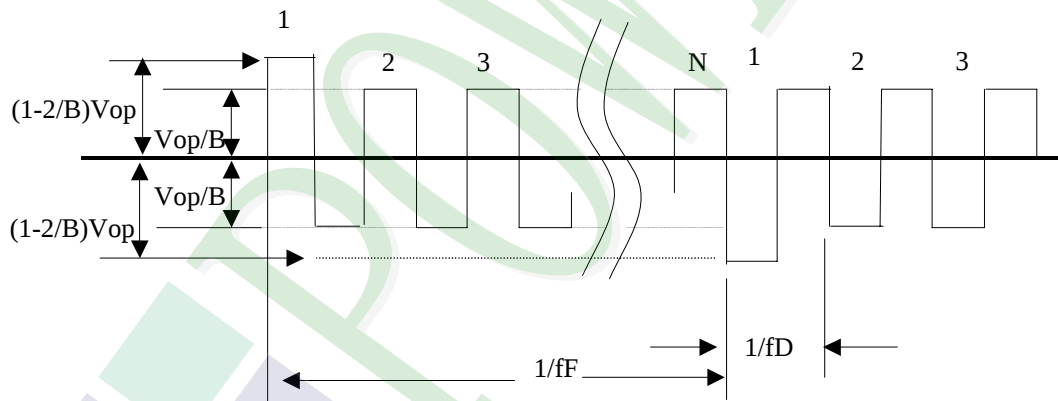
f_D : Drive frequency

N : Duty

(1) Selected waveform



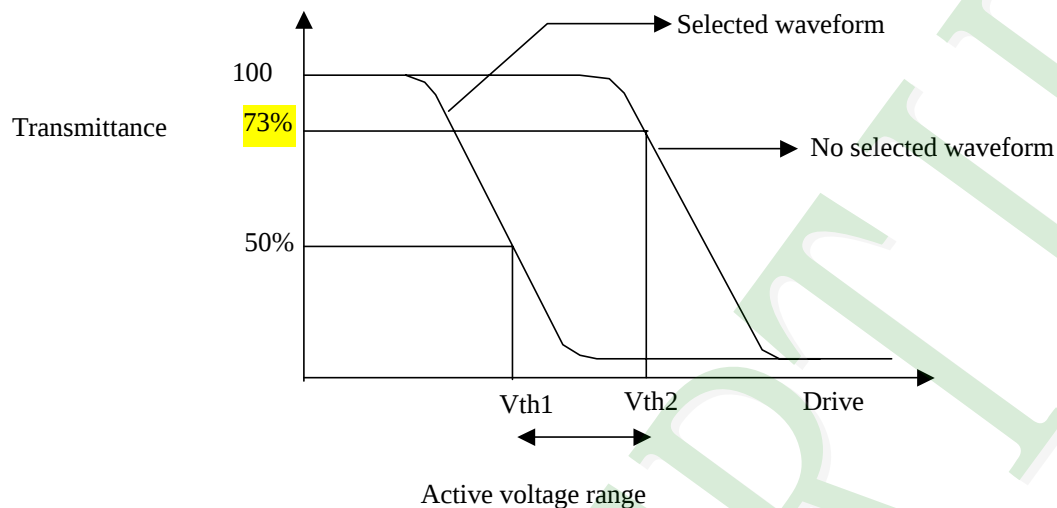
(2) Non- Selected wave form



Note:

Frame frequency is defined as follows: Common side supply voltage peak - to - peak / 2 = 1 period

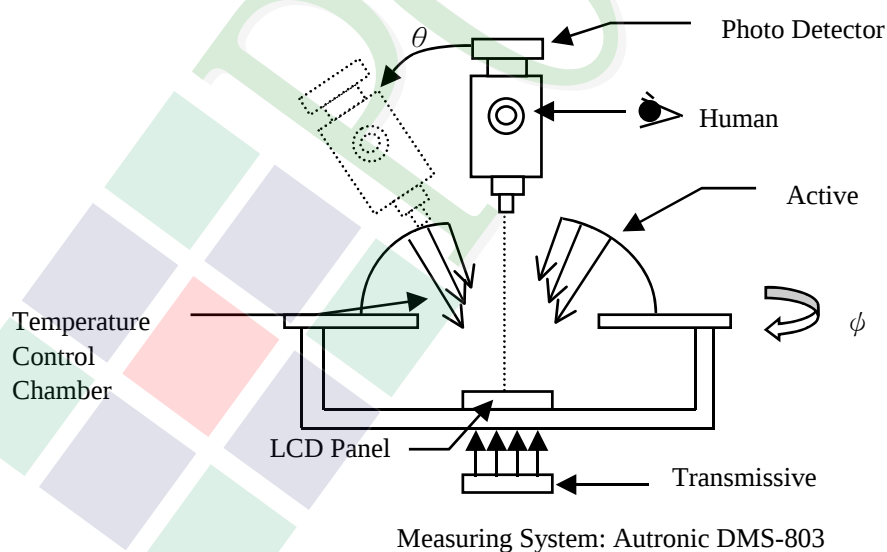
Note 3. : Definition of V_{th}



	Vth1	Vth2
View direction	10°	40°
Drive waveform	(Selected waveform)	(No selected waveform)
Transmittance	50%	73%

※1 Contrast ratio
= (Brightness in OFF state) / (Brightness in ON state)

Outline of Electro-Optical Characteristics Measuring System



1.6 Backlight Characteristics

LCD Module with LED Backlight

Maximum Ratings

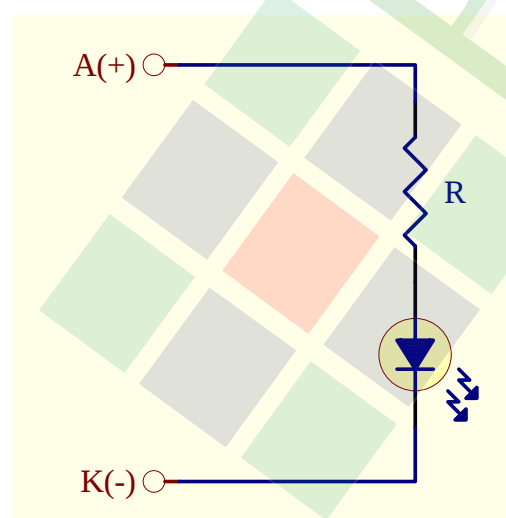
Item	Symbol	Conditions	Min.	Max.	Unit
Forward Current	I_F	$T_a = 25^\circ\text{C}$	-	30	mA
Reverse Current	I_R		-	0.05	mA
Forward Voltage	V_F		-	4	V
Reverse Voltage	V_R		-	5	V

Electrical / Optical Characteristics

$T_a = 25^\circ\text{C}$

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF= 20mA	3.1	3.3	3.5	V
Average Brightness (without LCD)	IV		400	500	600	cd/m ²
CIE Color Coordinate (without LCD)	X		0.25	0.28	0.31	-
	Y		0.25	0.28	0.31	-
Color	White					

Internal Circuit Diagram:



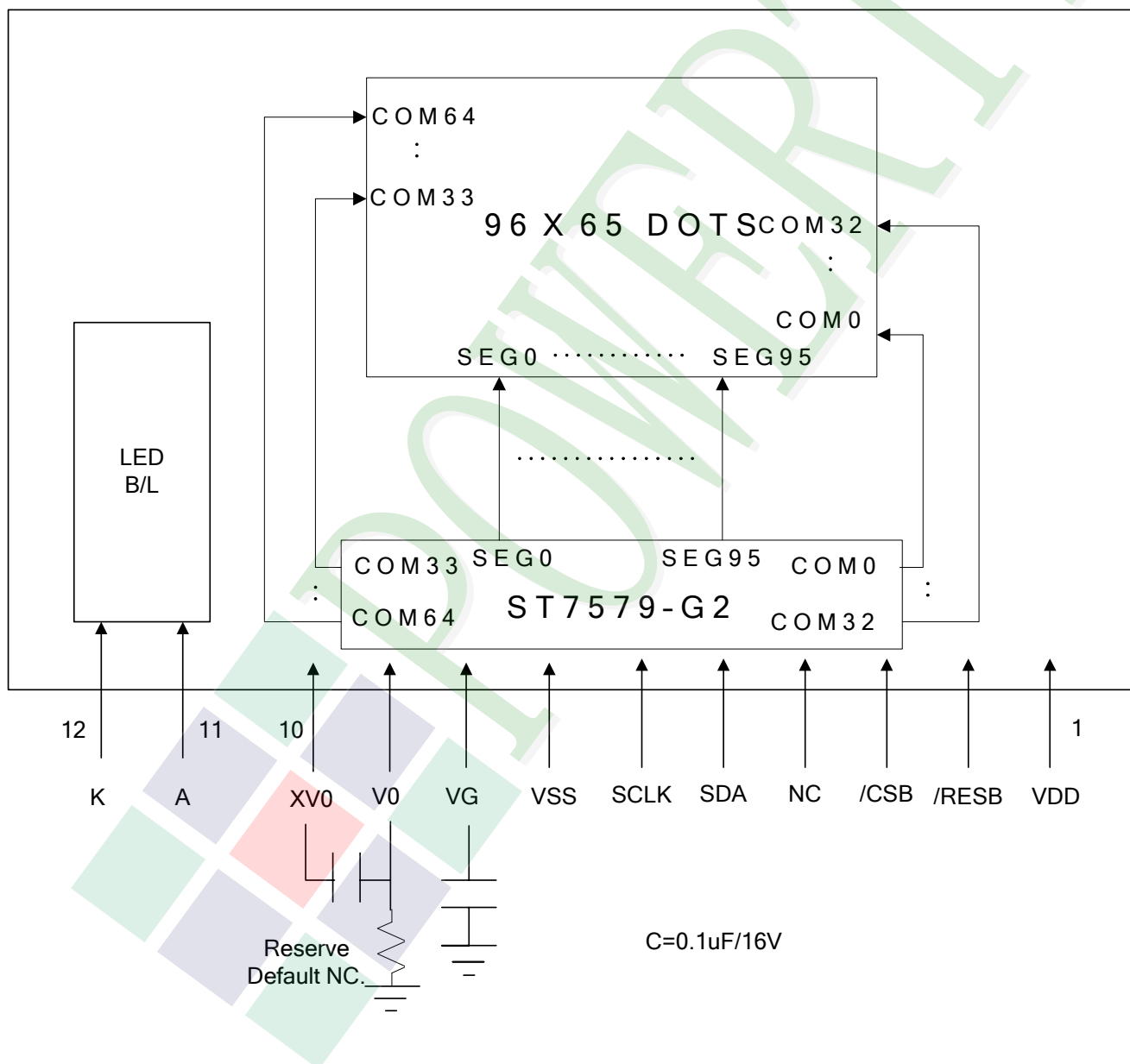
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram

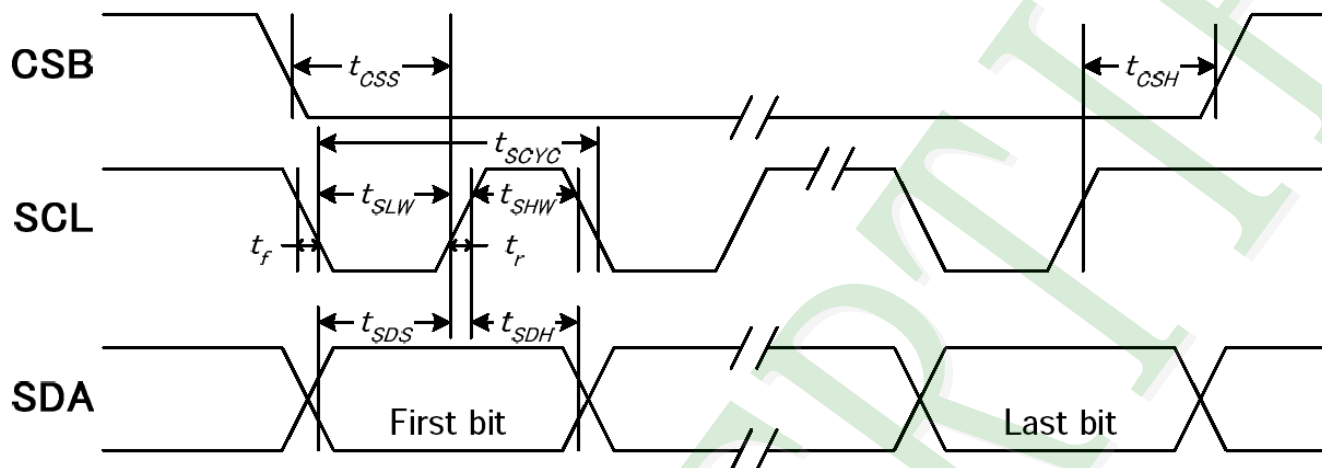


2.2 Interface Pin Description

Pin No.	Symbol	Function
1	VDD	Power supply.
2	/RESB	Reset input pin. When RESB is “L” , internal initialization is executed.
3	/CSB	Chip select input pin. Interface access is enabled when CSB is “L” .
4	NC	Not connection.
5	SDA	Serial data input,
6	SCLK	Serial clock input.
7	VSS	Ground.
8	VG	LCD driving voltage for segments.
9	V0	LCD driving voltage for commons at negative frame.
10	XV0	LCD driving voltage for commons at positive frame.
11	A	Backlight LED anode input pin.
12	K	Backlight LED cathode input pin.

2.3 Timing Characteristics

SERIAL INTERFACE (3-Line Interface)

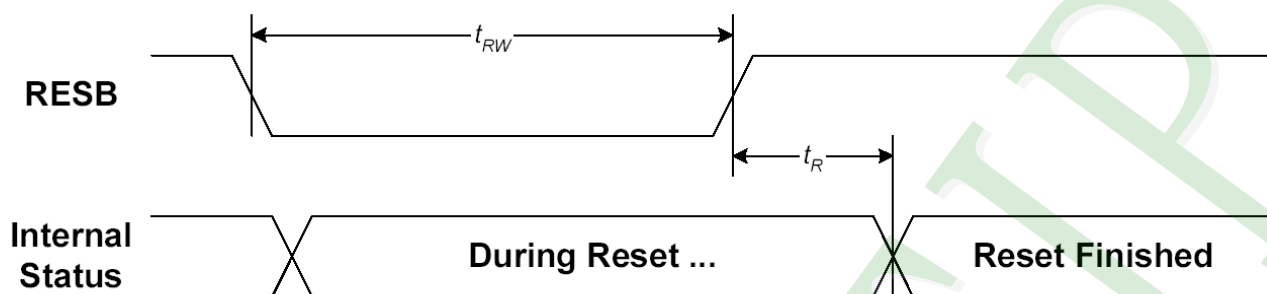


Item	Signal	Symbol	Condition	Min.	Max.	Unit
Serial clock period	SCLK	tSCYC		180	—	ns
SCLK "H" pulse width		tSHW		90	—	
SCLK "L" pulse width		tSLW		90	—	
Data setup time	SDA	tSDS		30	—	
Data hold time		tSDH		20	—	
CSB-SCLK time	CSB	tCSS		30	—	
CSB-SCLK time		tCSH		160	—	

*1 The input signal rise and fall time (t_r , t_f) are specified at 15 ns or less.

*2 All timing is specified using 20% and 80% of VDD1 as the standard.

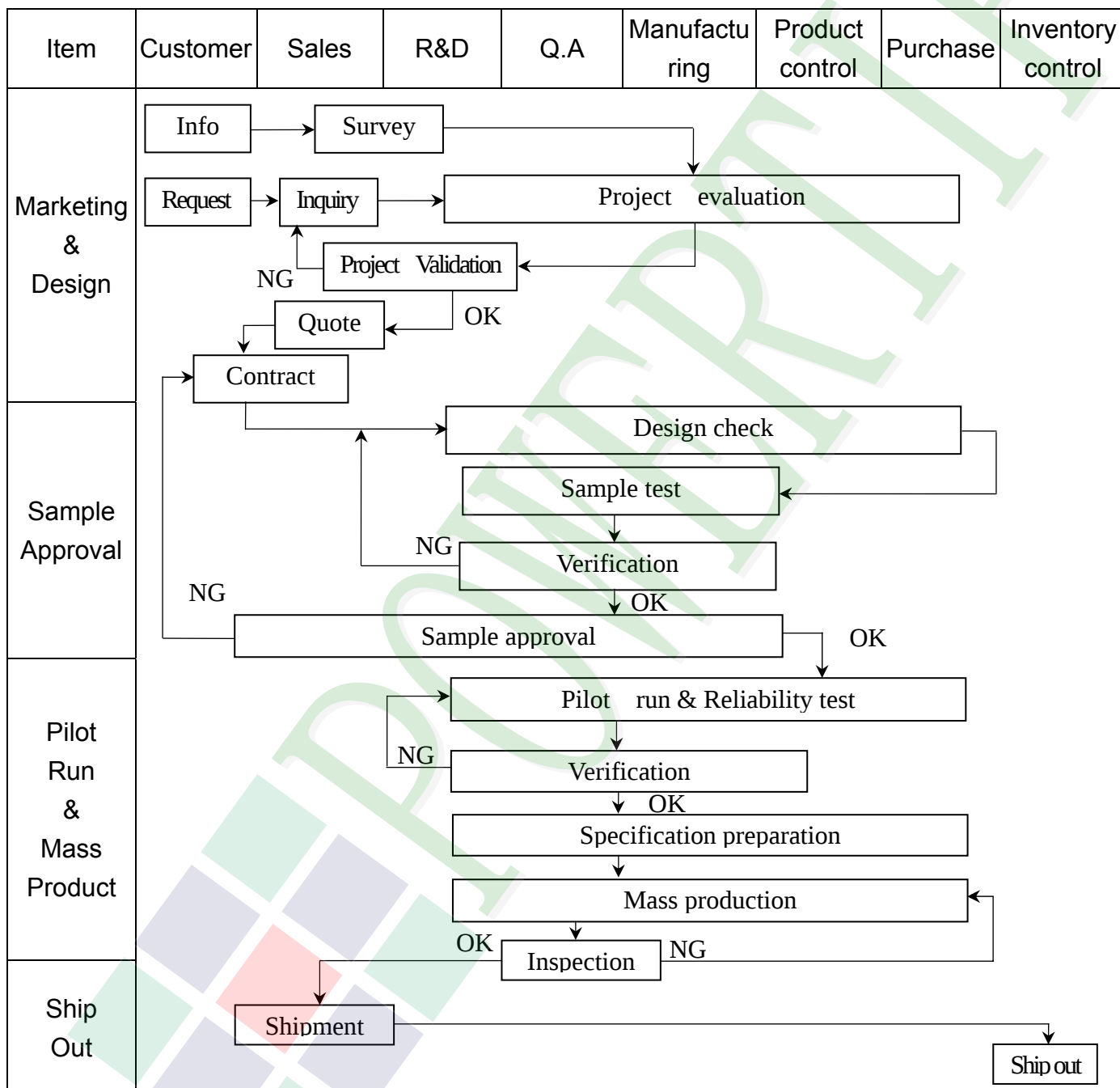
RESET TIMING

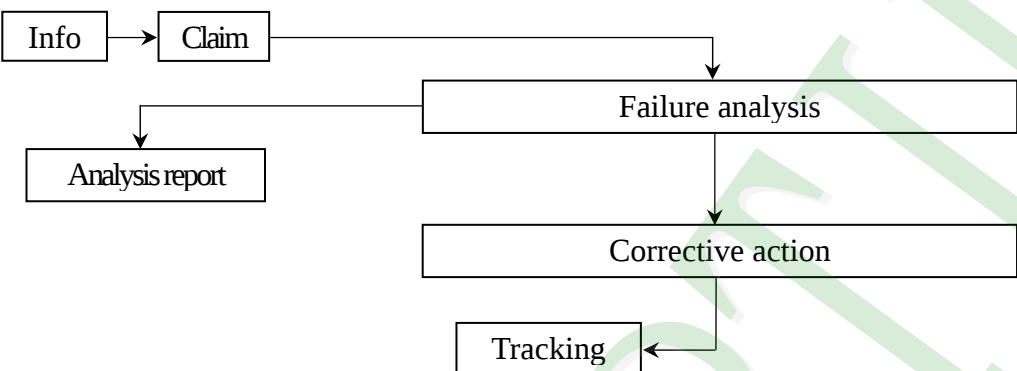


Item	Symbol	Condition	Min.	Max.	Unit
Reset time	t_R		—	2.0	us
Reset "L" pulse width	t_{RW}		2.0		

3. QUALITY ASSURANCE SYSTEM

3.1 Quality Assurance Flow Chart



Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Sales Service	 <pre> graph TD Info[Info] --> Claim[Claim] Claim --> Failure[Failure analysis] Claim --> Report[Analysis report] Failure --> Action[Corrective action] Action --> Tracking[Tracking] </pre>							
Q.A Activity	1. ISO 9001 Maintenance Activities 3. Equipment calibration 5. Standardization Management 2. Process improvement proposal 4. Education And Training Activities							

3.2 Inspection Specification

- ◆ **Scope** : The document shall be applied to LCD Module for Monotype and Color STN(Ver. 02).
- ◆ **Inspection Standard** : MIL-STD-105E Table Normal Inspection Single Sampling Level II .
- ◆ **Equipment** : Gauge 、 MIL-STD 、 Powertip Tester 、 Sample
- ◆ **Defect Level** : Major Defect AQL : 0.4 ; Minor Defect : AQL : 1.5 .
- ◆ **OUT Going Defect Level** : Sampling .
- ◆ **Manner of appearance test** :
 - (1). The test be under 20W×2 fluorescent light ' and distance of view must be at 30 cm.
 - (2). Standard of inspection : (Unit : mm)
 - (3). The test direction is base on about around 45° of vertical line. (Fig. 1)
 - (4). Definition of area . (Fig. 2)

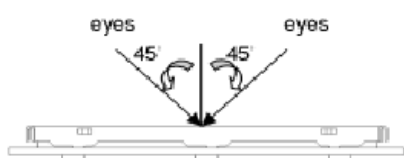


Fig.1

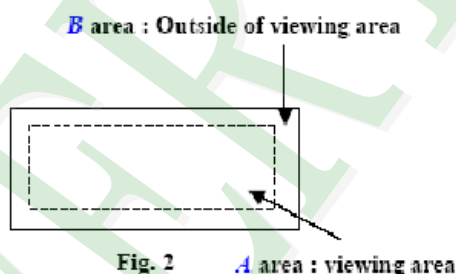


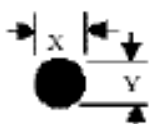
Fig. 2

◆ Specification:

NO	Item	Criterion	level
01	Product condition	1. 1 The part number is inconsistent with work order of Production.	Major
		1. 2 Mixed production types.	Major
		1. 3 Assembled in inverse direction.	Major
02	Quantity	2. 1 The quantity is inconsistent with work order of production.	Major
03	Outline dimension	3. 1 Product dimension and structure must conform to Structure diagram.	Major
04	Electrical Testing	4. 1 Missing line character and icon.	Major
		4. 2 No function or no display.	Major
		4. 3 Output data is error.	Major
		4. 4 LCD viewing angle defect.	Major
		4. 5 Current consumption exceeds product specifications.	Major

◆Specification For Monotype and Color STN :

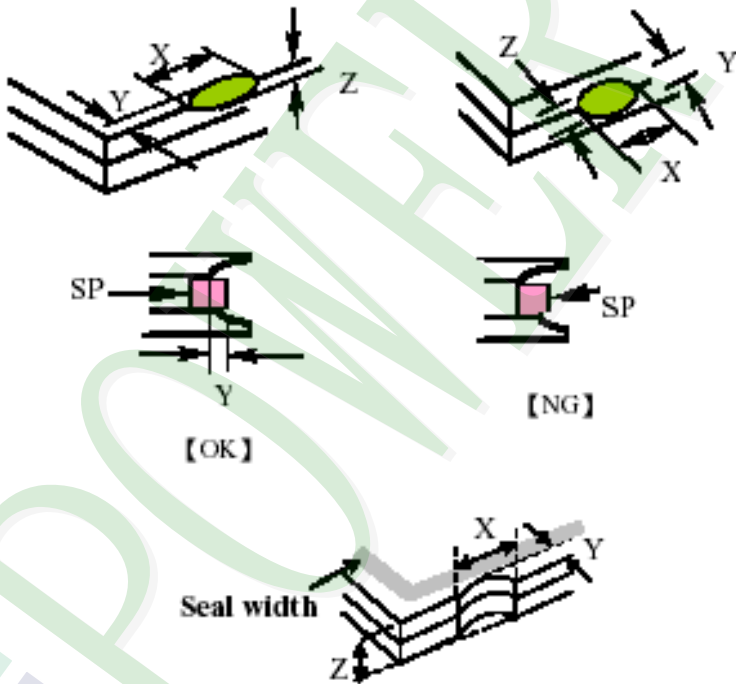
(Ver. 02)

NO	Item	Criterion	level																																	
05	Black or white dot 、 scratch 、 contamination Round type  $\Phi = (x+y)/2$ Line type 	5. 1 Round type: 5. 1. 1 display only : • White and black spots on display ≤ 0.30 mm , no more than 4 white or black spots present. • Densely spaced : NO more than two spots or lines within 3 mm. 5. 1. 2 Non-display : <table><tr><th>Dimension (diameter : Φ)</th><th>Acceptance (Q'ty)</th></tr><tr><td>$\Phi \leq 0.10$</td><td>Accept no dense</td></tr><tr><td>$0.10 < \Phi \leq 0.20$</td><td>3</td></tr><tr><td>$0.20 < \Phi \leq 0.30$</td><td>2</td></tr><tr><td>Total quantity</td><td>4</td></tr></table> 5. 1. 3 Line type: <table><tr><th colspan="2">Dimension</th><th colspan="2">Acceptance (Q'ty)</th></tr><tr><th>Length (L)</th><th>Width (W)</th><th>A area</th><th>B area</th></tr><tr><td>---</td><td>$W \leq 0.03$</td><td>Accept no dense</td><td>Don't count</td></tr><tr><td>$L \leq 3.0$</td><td>$0.03 < W \leq 0.05$</td><td rowspan="2">4</td><td>Don't count</td></tr><tr><td>$L \leq 2.5$</td><td>$0.05 < W \leq 0.075$</td><td>Don't count</td></tr><tr><td>---</td><td>$W > 0.075$</td><td colspan="2">As round type</td></tr></table>	Dimension (diameter : Φ)	Acceptance (Q'ty)	$\Phi \leq 0.10$	Accept no dense	$0.10 < \Phi \leq 0.20$	3	$0.20 < \Phi \leq 0.30$	2	Total quantity	4	Dimension		Acceptance (Q'ty)		Length (L)	Width (W)	A area	B area	---	$W \leq 0.03$	Accept no dense	Don't count	$L \leq 3.0$	$0.03 < W \leq 0.05$	4	Don't count	$L \leq 2.5$	$0.05 < W \leq 0.075$	Don't count	---	$W > 0.075$	As round type		Minor
Dimension (diameter : Φ)	Acceptance (Q'ty)																																			
$\Phi \leq 0.10$	Accept no dense																																			
$0.10 < \Phi \leq 0.20$	3																																			
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Total quantity	4																																			
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Length (L)	Width (W)	A area	B area																																	
---	$W \leq 0.03$	Accept no dense	Don't count																																	
$L \leq 3.0$	$0.03 < W \leq 0.05$	4	Don't count																																	
$L \leq 2.5$	$0.05 < W \leq 0.075$		Don't count																																	
---	$W > 0.075$	As round type																																		
06	Polarizer Bubble	<table><tr><th rowspan="2">Dimension (diameter : Φ)</th><th colspan="2">Acceptance (Q'ty)</th></tr><tr><th>A area</th><th>B area</th></tr><tr><td>$\Phi \leq 0.20$</td><td>Accept no dense</td><td>Don't count</td></tr><tr><td>$0.20 < \Phi \leq 0.50$</td><td>3</td><td>Don't count</td></tr><tr><td>$0.50 < \Phi \leq 1.00$</td><td>2</td><td>Don't count</td></tr><tr><td>$\Phi > 1.00$</td><td>0</td><td>Don't count</td></tr><tr><td>Total quantity</td><td>4</td><td>Don't count</td></tr></table>	Dimension (diameter : Φ)	Acceptance (Q'ty)		A area	B area	$\Phi \leq 0.20$	Accept no dense	Don't count	$0.20 < \Phi \leq 0.50$	3	Don't count	$0.50 < \Phi \leq 1.00$	2	Don't count	$\Phi > 1.00$	0	Don't count	Total quantity	4	Don't count	Minor													
Dimension (diameter : Φ)	Acceptance (Q'ty)																																			
	A area	B area																																		
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$0.50 < \Phi \leq 1.00$	2	Don't count																																		
$\Phi > 1.00$	0	Don't count																																		
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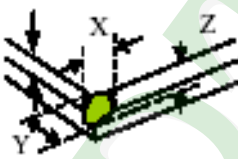
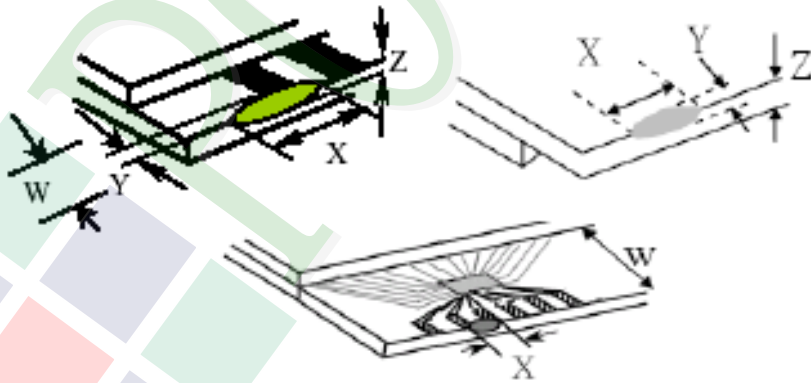
◆Specification For Monotype and Color STN :

(Ver. 02)

NO	Item	Criterion	Level						
07	The crack of glass	Symbols : X : The length of crack Z : The thickness of crack t : The thickness of glass Y : The width of crack. W : terminal length a : LCD side length	Minor						
		7.1 General glass chip : 7.1.1 Chip on panel surface and crack between panels:  <table><tr><th>X</th><th>Y</th><th>Z</th></tr><tr><td>$\leq a$</td><td>Crack can't enter viewing area</td><td>$\leq 1/2 t$</td></tr><tr><td>$\leq a$</td><td>Crack can't exceed the half of SP width.</td><td>$1/2 t < Z \leq 2 t$</td></tr></table>		X	Y	Z	$\leq a$	Crack can't enter viewing area	$\leq 1/2 t$
X	Y	Z							
$\leq a$	Crack can't enter viewing area	$\leq 1/2 t$							
$\leq a$	Crack can't exceed the half of SP width.	$1/2 t < Z \leq 2 t$							

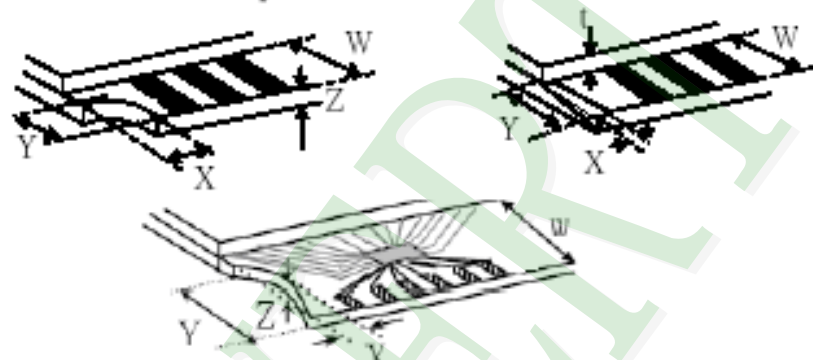
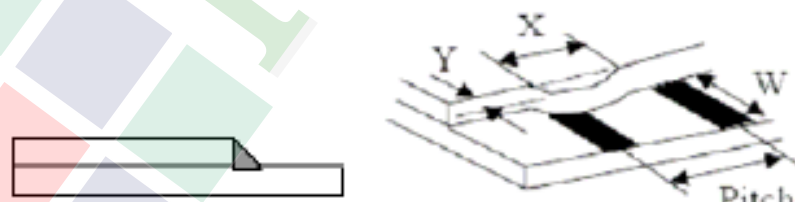
◆ Specification For Monotype and Color STN :

(Ver. 02)

NO	Item	Criterion	Level									
07	The crack of glass	Symbols : X : The length of crack Z : The thickness of crack t : The thickness of glass Y : The width of crack. W : terminal length a : LCD side length 7.1.2 Corner crack :  <table><tr><th>X</th><th>Y</th><th>Z</th></tr><tr><td>$\leq 1/5 a$</td><td>Crack can't enter viewing area</td><td>$Z \leq 1/2 t$</td></tr><tr><td>$\leq 1/5 a$</td><td>Crack can't exceed the half of SP width.</td><td>$1/2 t < Z \leq 2 t$</td></tr></table>	X	Y	Z	$\leq 1/5 a$	Crack can't enter viewing area	$Z \leq 1/2 t$	$\leq 1/5 a$	Crack can't exceed the half of SP width.	$1/2 t < Z \leq 2 t$	Minor
		X	Y	Z								
$\leq 1/5 a$	Crack can't enter viewing area	$Z \leq 1/2 t$										
$\leq 1/5 a$	Crack can't exceed the half of SP width.	$1/2 t < Z \leq 2 t$										
7.2 Protrusion over terminal : 7.2.1 Chip on electrode pad :  <table><tr><th></th><th>X</th><th>Y</th><th>Z</th></tr><tr><td>Front</td><td>$\leq a$</td><td>$\leq 1/2 W$</td><td>$\leq t$</td></tr><tr><td>Back</td><td colspan="3">Neglect</td></tr></table>		X	Y	Z	Front	$\leq a$	$\leq 1/2 W$	$\leq t$	Back	Neglect		
	X	Y	Z									
Front	$\leq a$	$\leq 1/2 W$	$\leq t$									
Back	Neglect											

◆ Specification For Monotype and Color STN :

(Ver. 02)

NO	Item	Criterion	Level									
07	The crack of glass	Symbols : X : The length of crack Z : The thickness of crack t : The thickness of glass Y : The width of crack. W : terminal length a : LCD side length	Minor									
		7.2.2 Non-conductive portion :  <table><tr><th>X</th><th>Y</th><th>Z</th></tr><tr><td>$\leq 1/3 a$</td><td>$\leq W$</td><td>$\leq t$</td></tr></table> ⊙ If the chipped area touches the ITO terminal, over 2/3 of the ITO must remain and be inspected according to electrode terminal specifications. 7.2.3 Glass remain :  <table><tr><th>X</th><th>Y</th><th>Z</th></tr><tr><td>$\leq a$</td><td>$\leq 1/3 W$</td><td>$\leq t$</td></tr></table>		X	Y	Z	$\leq 1/3 a$	$\leq W$	$\leq t$	X	Y	Z
X	Y	Z										
$\leq 1/3 a$	$\leq W$	$\leq t$										
X	Y	Z										
$\leq a$	$\leq 1/3 W$	$\leq t$										

◆ Specification For Monotype and Color STN :

(Ver. 02)

NO	Item	Criterion	Level
08	Backlight elements	8. 1 Backlight can't work normally.	Major
		8. 2 Backlight doesn't light or color is wrong.	Major
		8. 3 Illumination source flickers when lit.	Major
09	General appearance	9. 1 Pin type must match type in specification sheet.	Major
		9. 2 No short circuits in components on PCB or FPC.	Major
		9. 3 Product packaging must the same as specified on packaging specification sheet.	Minor
		9. 4 The folding and peeled off in polarizer are not acceptable.	Minor
		9. 5 The PCB or FPC between B/L assembled distance (PCB or FPC) is ≤ 1.5 mm.	Minor

4. RELIABILITY TEST

4.1 Reliability Test Condition

NO.	TEST ITEM	TEST CONDITION											
1	High Temperature Storage Test	Keep in +80 ±2℃ 96 hrs Surrounding temperature, then storage at normal condition 4hrs.											
2	Low Temperature Storage Test	Keep in -30 ±2℃ 96 hrs Surrounding temperature, then storage at normal condition 4hrs.											
3	High Temperature / High Humidity Storage Test	Keep in +60℃ / 90% R.H duration for 96 hrs Surrounding temperature, then storage at normal condition 4hrs. (Excluding the polarizer)											
4	ESD Test	Air Discharge: Apply 2 KV with 5 times Discharge for each polarity +/-	Contact Discharge: Apply 250 V with 5 times discharge for each polarity +/-										
		1. Temperature ambience : 15℃ ~35℃ 2. Humidity relative : 30% ~60% 3. Energy Storage Capacitance(Cs+Cd) : 150pF±10% 4. Discharge Resistance(Rd) : 330 Ω±10% 5. Discharge, mode of operation : Single Discharge (time between successive discharges at least 1 sec) (Tolerance if the output voltage indication : ±5%)											
5	Temperature Cycling Storage Test	-20℃ → +25℃ → +70℃ → +25℃ (30mins) (5mins) (30mins) (5mins) ← 10 Cycle → Surrounding temperature, then storage at normal condition 4hrs.											
6	Vibration Test (Packaged)	1. Sine wave 10~55 Hz frequency (1 min) 2. The amplitude of vibration :1.5 mm 3. Each direction (X、Y、Z) duration for 2 Hrs											
7	Drop Test (Packaged)	<table><tr><th>Packing Weight (Kg)</th><th>Drop Height (cm)</th></tr><tr><td>0 ~ 45.4</td><td>122</td></tr><tr><td>45.4 ~ 90.8</td><td>76</td></tr><tr><td>90.8 ~ 454</td><td>61</td></tr><tr><td>Over 454</td><td>46</td></tr></table> Drop direction :※1 corner / 3 edges / 6 sides each 1times		Packing Weight (Kg)	Drop Height (cm)	0 ~ 45.4	122	45.4 ~ 90.8	76	90.8 ~ 454	61	Over 454	46
Packing Weight (Kg)	Drop Height (cm)												
0 ~ 45.4	122												
45.4 ~ 90.8	76												
90.8 ~ 454	61												
Over 454	46												

5. PRECAUTION RELATING PRODUCT HANDLING

5.1 SAFETY

- 5.1.1 If the LCD panel breaks , be careful not to get the liquid crystal to touch your skin.
- 5.1.2 If the liquid crystal touches your skin or clothes , please wash it off immediately by using soap and water.

5.2 HANDLING

- 5.2.1 Avoid any strong mechanical shock which can break the glass.
- 5.2.2 Avoid static electricity which can damage the CMOS LSI—When working with the module , be sure to ground your body and any electrical equipment you may be using.
- 5.2.3 Do not remove the panel or frame from the module.
- 5.2.4 The polarizing plate of the display is very fragile. So , please handle it very carefully ,do not touch , push or rub the exposed polarizing with anything harder than an HB pencil lead (glass , tweezers , etc.)
- 5.2.5 Do not wipe the polarizing plate with a dry cloth , as it may easily scratch the surface of plate.
- 5.2.6 Do not touch the display area with bare hands , this will stain the display area.
- 5.2.7 Do not use ketonics solvent & aromatic solvent. Use with a soft cloth soaked with a cleaning naphtha solvent.

5.3 STORAGE

- 5.3.1 Store the panel or module in a dark place where the temperature is $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ and the humidity is below 65% RH.
- 5.3.2 Do not place the module near organics solvents or corrosive gases.
- 5.3.3 Do not crush , shake , or jolt the module.

5.4 TERMS OF WARRANTY

5.4.1 Applicable warrant period

The period is within thirteen months since the date of shipping out under normal using and storage conditions.

5.4.2 Unaccepted responsibility

This product has been manufactured to your company's specification as a part for use in your company's general electronic products. It is guaranteed to perform according to delivery specifications. For any other use apart from general electronic equipment , we cannot take responsibility if the product is used in nuclear power control equipment , aerospace equipment , fire and security systems or any other applications in which there is a direct risk to human life and where extremely high levels of reliability are required.

	A	B	C	D	E	F	G	H
1	(1.1)	(3.1)	(4.29)	34.0	31.8±0.2(LCD)	27.8(V.A)	25.42(A.A)	2-1.3
2	7.2Min	10.0Max	VIEWING DIRECTION	96X65 DOTS	Pull tape	16.88(A.A)	18.9(V.A)	22.2±0.2(LCD)
3	13.0±0.5	30.4	28.2±0.2(LCD)	0.7±0.07	1.9±0.2(LCD)	2-1.3	31.4±0.1	27.8±0.1
4	11.6	11.2	1.4	0.2Max	T:0.2	Double tape	1.0Max	2-1.3
5	1.7	1.4	1.1	0.15±0.05	Conductor	Section A-A	Detail a	Scale:3X
6	NOTES:	1.LCD TYPE:FSTN	2.LCD DISPLAY:POSITIVE/TRANSMISSIVE	3.VIEW DIRECTION: 6 O'CLOCK	4.Top: -20~70°C Tst:-30~80°C	5.The tolerance unless classified ±0.3mm	6.IC NO.:ST7579-G2	7.b:P0.8X11=8.8±0.1
								8.BACKLIGHT: WHITE , 1PCS LED DIES

Ver.003	LCM包裝規格書		Approve	Check	Contact
Documents NO.	PKG-PE9665WRF-002-I02Q	LCM Packaging Specifications (For Tray)	Oliver	Max	Miyake

1.包裝材料規格表 (Packaging Material) : (per carton)

No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PE9665WRF-002-I02Q	34.0 X 30.4	0.0048	1620	7.776
2	多層薄膜(1)POF	OTFILM0BA03ABA	19"X350X0.015	——	6	——
3	TRAY 盤 (2)Tray	TY00000000015	352 X 260 X 10.8	0.1	60	6.0
4	內盒(3)Product Box	BX36627063ABBA	393 X 274 X 68	0.2692	6	1.6152
5	保利龍板(4)Polylon board	OTPLB00PL08ABA	550 X 393 X 20	0.0284	2	0.0568
6	外紙箱(5)Carton	BX57041027CCBA	570 X 410 X 265	1.4208	1	1.4208
7						
8						
9						

2.一 整箱總重量 (Total LCD Weight in carton) : 16.87 Kg±10%

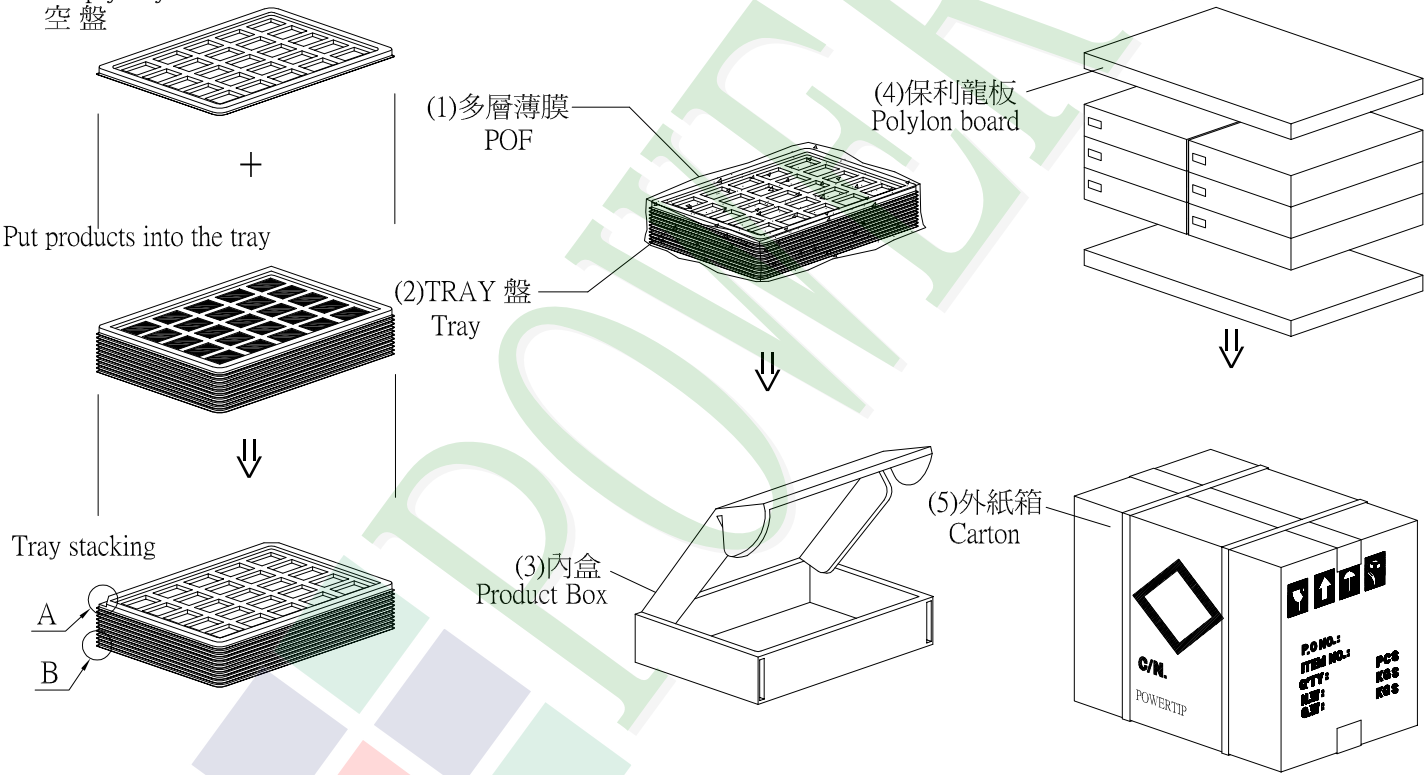
3.單箱數量規格表 (Packaging Specifications and Quantity) :

(1)LCM quantity per box : no per tray	30	x no of tray	9	=	270
(2)Total LCM quantity in carton : quantity per box	270	x no of boxes	6	=	1620

Use empty tray
空盤

Put products into the tray

Tray stacking



特 記 事 項 (REMARK)

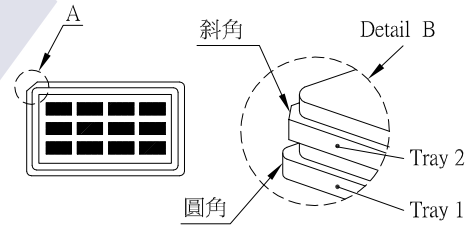
1. Label Specifications :

MODEL:

LOT NO:

QUANTITY:

CHECK:



2. TRAY盤相疊時,需旋轉180度,請詳見B視圖
Rotate tray 180 degrees and place on top of stack.
Check the tray stack using Fig. B.

3.可適用於單品包裝
It's also suitable to Panel

4. Tray料號:
Tray Number:TY00000000015