TFT MODULE SPECIFICATION

RVT43ULSNWC0x V6

4.3" LCD TFT DATASHEET
Rev. 1.0
2026-11-18

Riverdi Sp. z o.o.

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contact@riverdi.com

riverdi.com

ITEM	CONTENTS	UNIT
Display Type	TFT/Transmissive/Normally white	/
Size	4.3	Inch
Viewing Direction	12:00 (without image inversion)	O' Clock
Gray Scale Inversion Direction	6:00	O' Clock
Outside Dimensions (W x H x D)	120.38 x 79.20 x 8.78	mm
Active Area (W x H)	95.04 x 53.86	mm
Pixel Pitch (W x H)	0.198 x 0.198	mm
Resolution	480 (RGB) x 272	/
Surface Luminance	500	cd/m^2
Interface Type	Parallel 8/16b (i80 by default)	/
Color Depth	16.7M	/
Backlight Type	10 LEDs	/
Pixel Arrangement	RGB Vertical Stripe	/
Driver IC	FT5446U	/
Controller IC	SSD1963QL9	/
With/Without Touch	With Capacitive Touch Panel	/
LCD Input Voltage	3.3	V
Weight	TBD	g

Note 1. RoHS compliant

Note 2. LCM weight tolerance: ± 5%.

1. REVISION RECORD

REV NO.	REV DATE	CONTENTS	REMARKS
1.0	2026-11-18	Initial Release	

2. CONTENTS

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3. MODULE CLASSIFICATION INFORMATION

RV	T	43	U	L	S	N	W	C	0x	V6
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.

NO.	PARAMETER	SYMBOL
1.	BRAND	RV – Riverdi
2.	PRODUCT TYPE	T – TFT Standard
3.	DISPLAY SIZE	43 – 4.3”
4.	MODEL SERIAL NO.	U (A-Z)
5.	RESOLUTION	L – 480x272 px
6.	INTERFACE	S– TFT + Controller
7.	FRAME	N – Without Mounting Metal Frame
8.	BACKLIGHT TYPE	W – LED White
9.	TOUCH PANEL	C – Capacitive Touch Panel
10.	VERSION	0x (00-99)
11.	MODULE REVISION	V6

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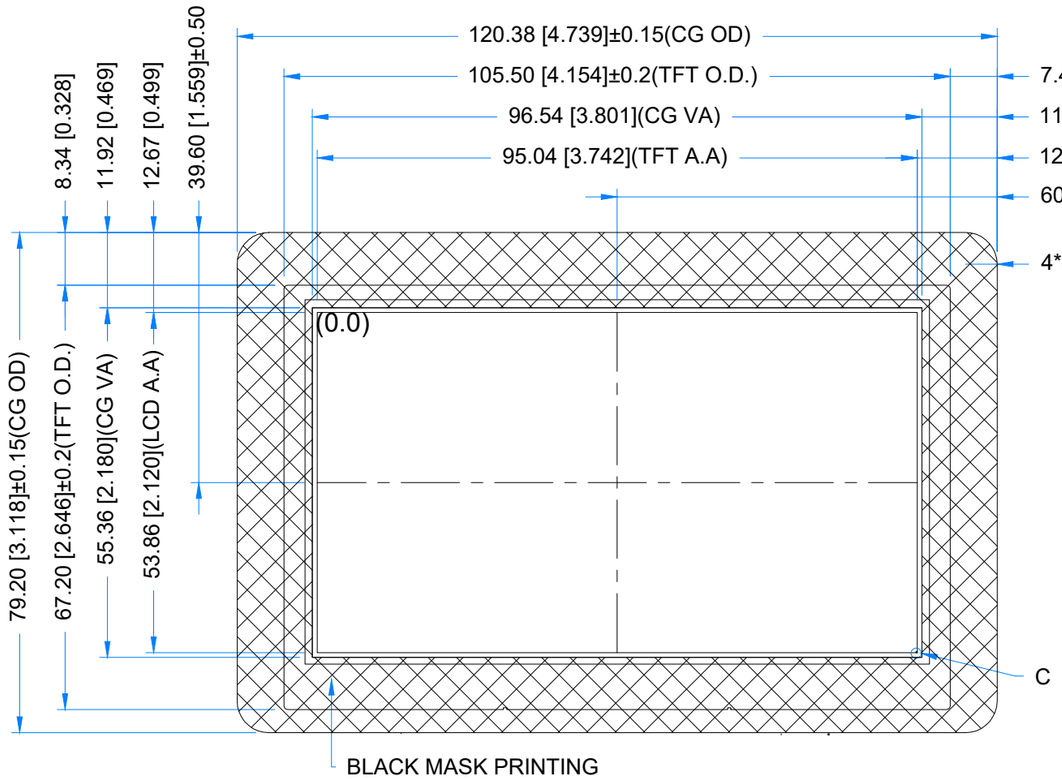
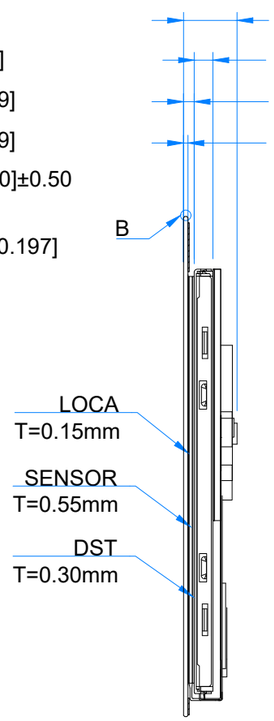
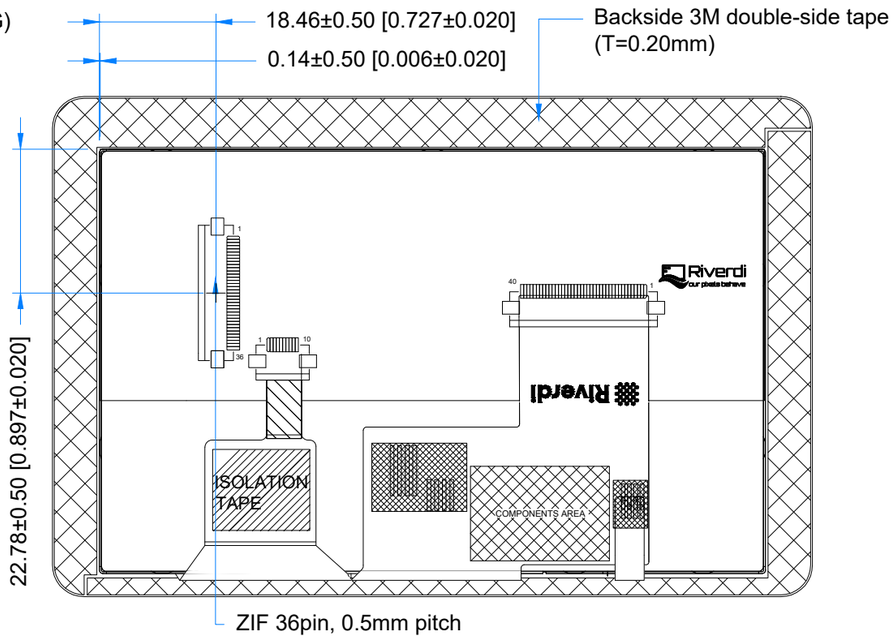
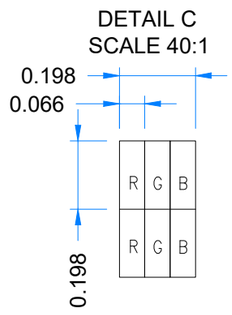
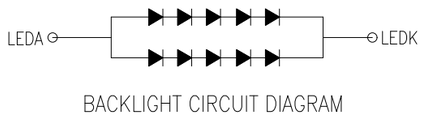
Revision:	Changes:	Date:
1.0	Initial Case, PCN: RVD002-107	2026.11.18

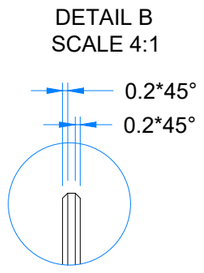












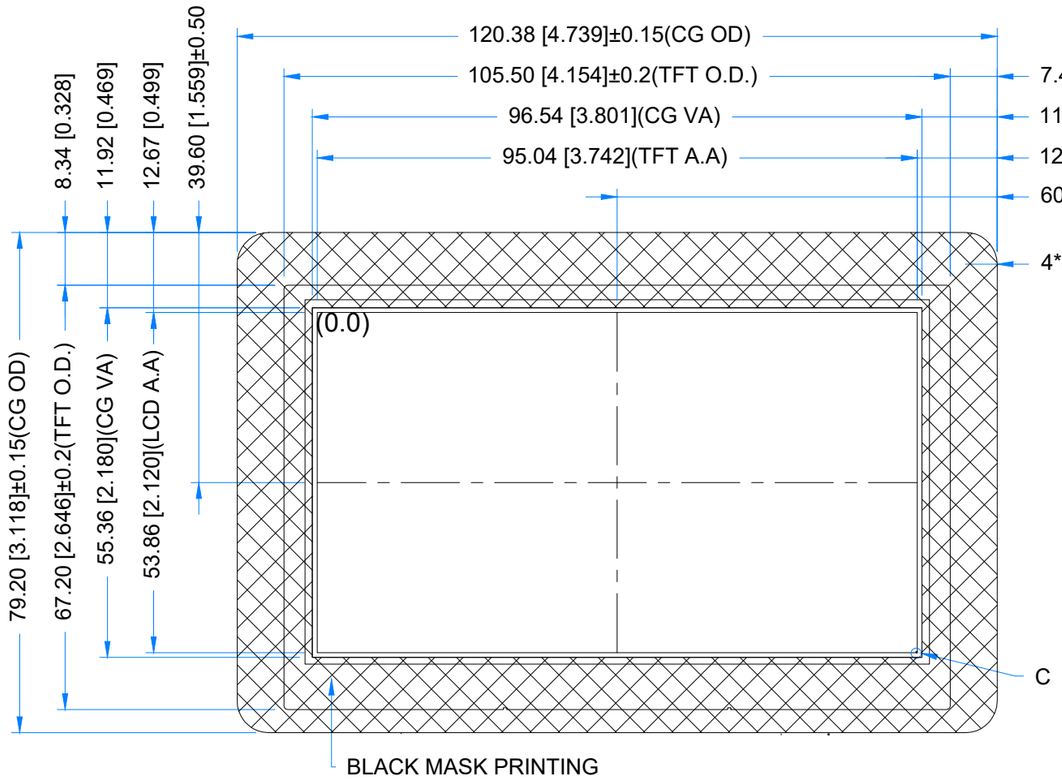
TFT NOTES:
1. DISPLAY TYPE: TFT, TRANSMISSIVE, NORMALLY WHITE
2. RESOLUTION: 480 x 272
3. VIEWING ANGLE: 12 O'CLOCK
4. CONTROLLER IC: SSD1963QL9
5. OPERATION VOLTAGE: VDD=3,3V (TYP.)

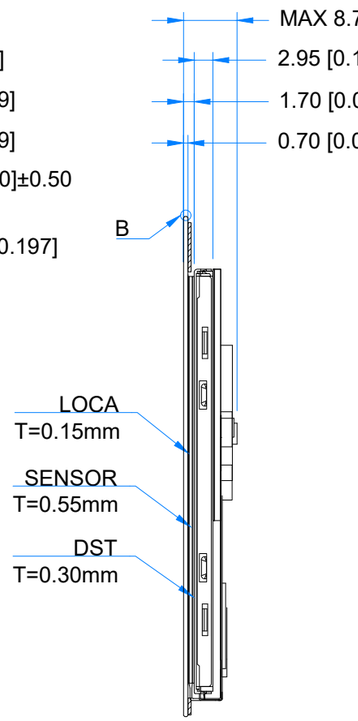
TP NOTES:
1. TP STRUCTURE: G+G
2. CG THICKNESS: 0.70mm
3. DRIVER IC: FT5446U
4. SURFACE HARDNESS: 7H
5. INTERFACE: I2C

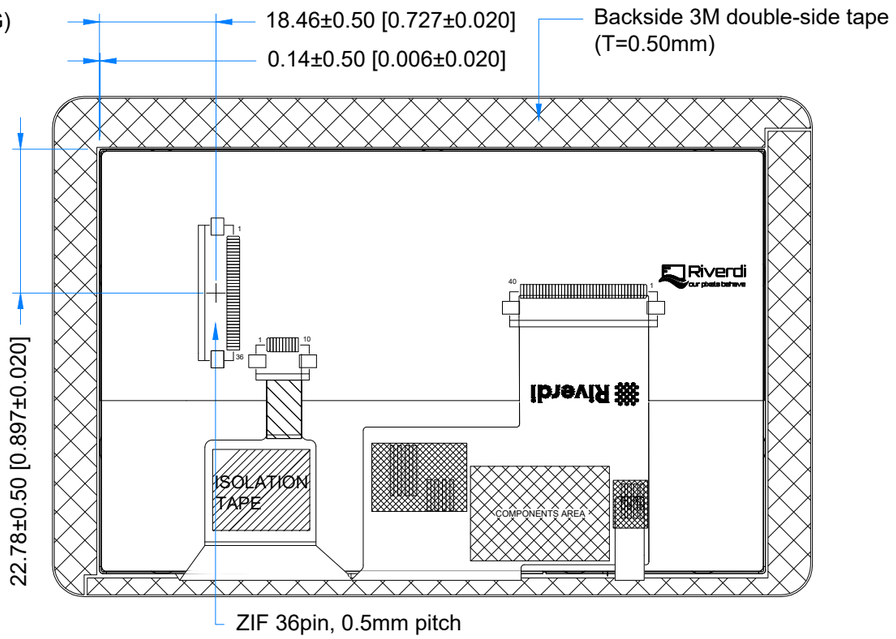
GENERAL NOTES:
1. SURFACE LUMINANCE: 500cd/m^2
2. OPERATING TEMPERATURE: -20°C ~ 70°C
3. STORAGE TEMPERATURE: -30°C ~ 80°C
4. WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm
5. RoHS COMPLIANT

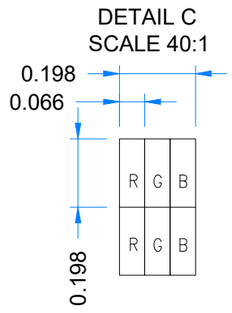
PN: RVT43ULSNWC00 V6				Riverdi
SN:				
DRAWN:	M.Stabinski	2026.11.18	1:0.97	
CHECKED:	M.Wierzbowski	2026.11.18	[mm]	
APPR:	M.Wierzbowski	2026.11.18	ISO A3	P. 1 of 1

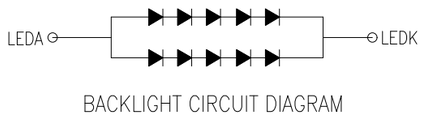
Revision:	Changes:	Date:
1.0	Initial Case, PCN: RVD002-107	2026.11.18

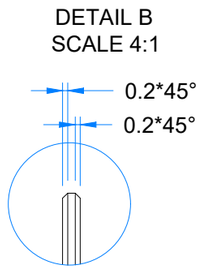












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TP NOTES:
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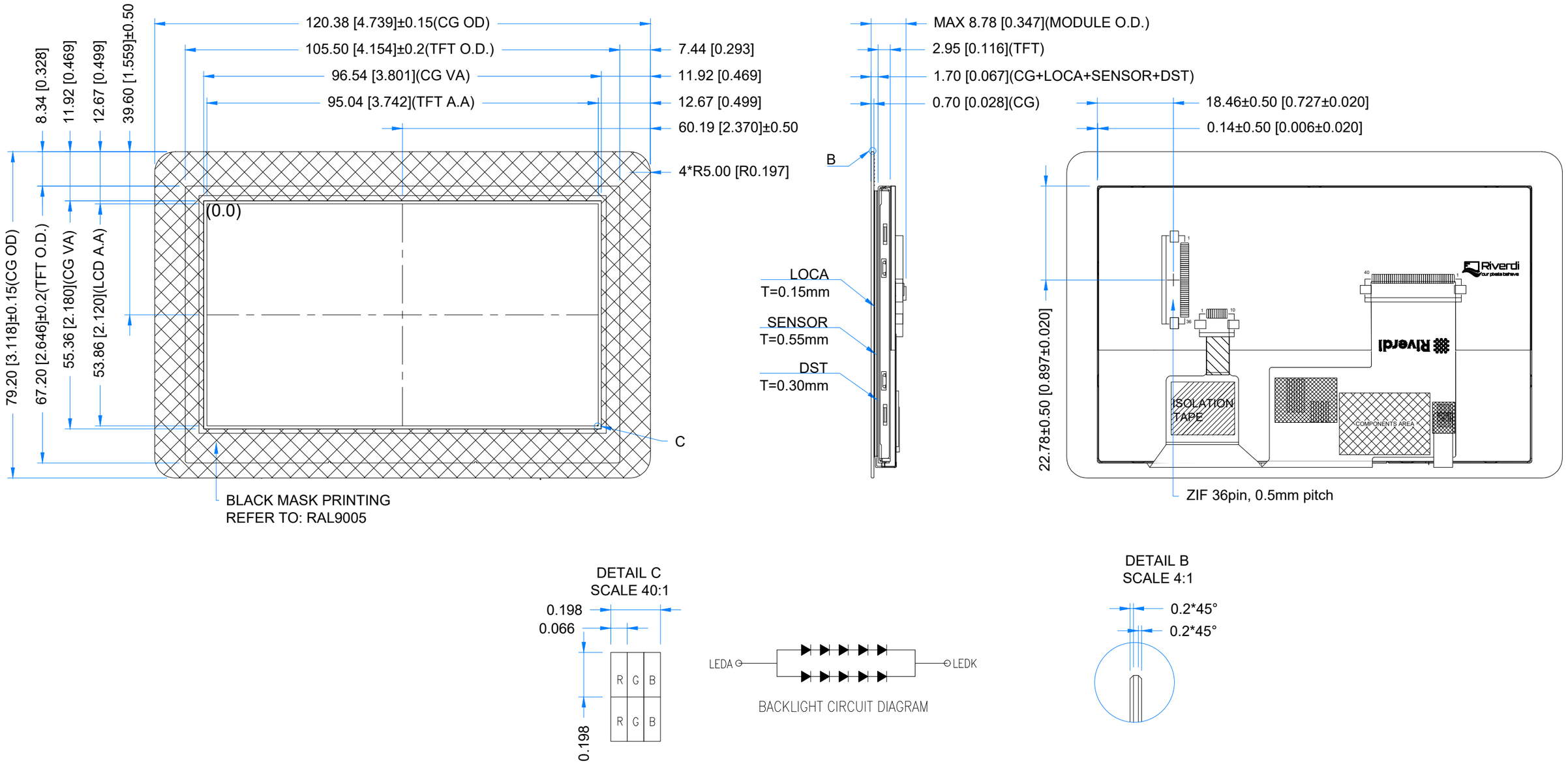
2. CG THICKNESS: 0.70mm
3. DRIVER IC: FT5446U
4. SURFACE HARDNESS: 7H
5. INTERFACE: I2C

GENERAL NOTES:
1. SURFACE LUMINANCE: 500cd/m^2
2. OPERATING TEMPERATURE: -20°C ~ 70°C
3. STORAGE TEMPERATURE: -30°C ~ 80°C
4. WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm
5. RoHS COMPLIANT

PN: RVT43ULSNWC01 V5				Riverdi
SN:				
DRAWN:	M.Stabinski	2026.11.18	1:0.97	
CHECKED:	M.Wierzbowski	2026.11.18	[mm]	
APPR:	M.Wierzbowski	2026.11.18	ISO A3	P. 1 of 1

Revision:	Changes:	Date:
1.0	Initial Case, PCN: RVD002-107	2026.11.18



BACKLIGHT CIRCUIT DIAGRAM

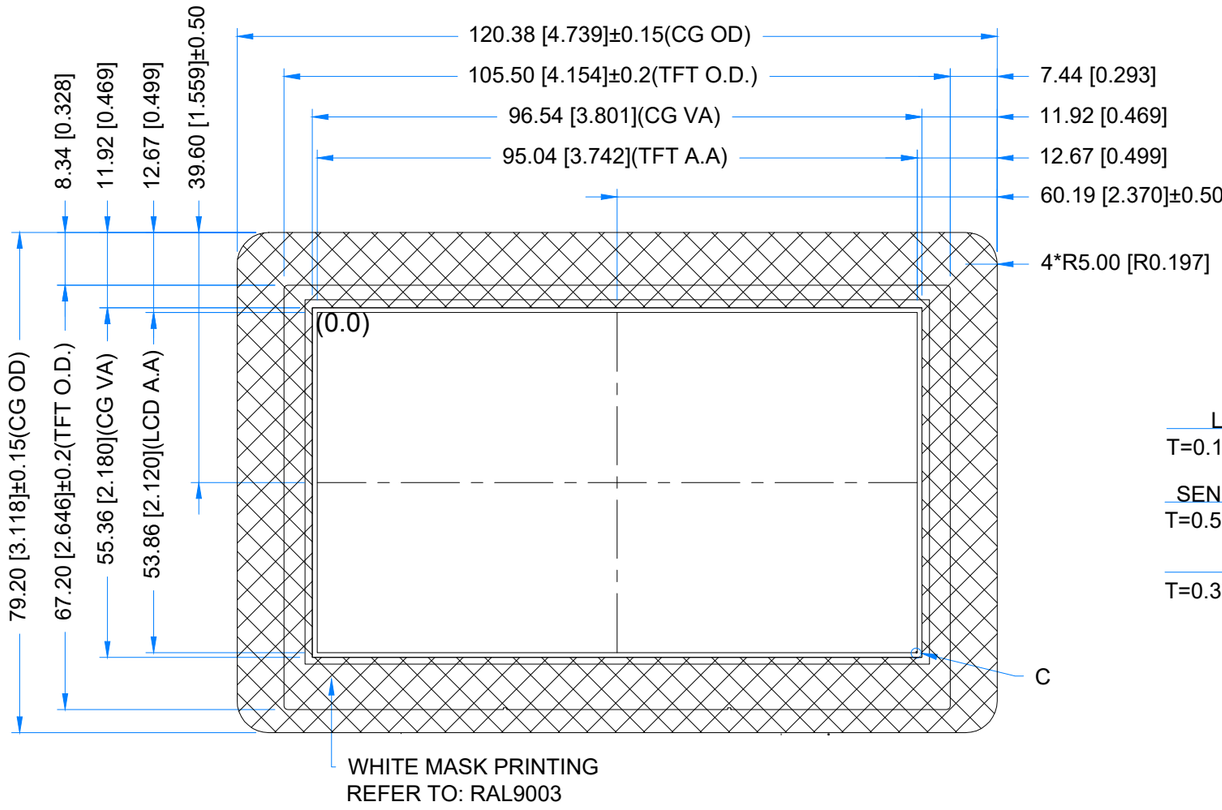
TFT NOTES:
1. DISPLAY TYPE: TFT, TRANSMISSIVE, NORMALLY WHITE
2. RESOLUTION: 480 x 272
3. VIEWING ANGLE: 12 O'CLOCK
4. CONTROLLER IC: SSD1963QL9
5. OPERATION VOLTAGE: VDD=3,3V (TYP.)

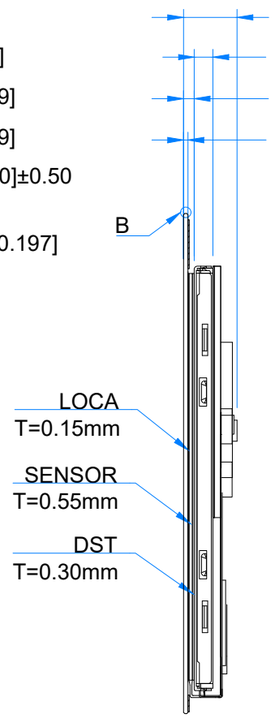
TP NOTES:
1. TP STRUCTURE: G+G
2. CG THICKNESS: 0.70mm
3. DRIVER IC: FT5446U
4. SURFACE HARDNESS: 7H
5. INTERFACE: I2C

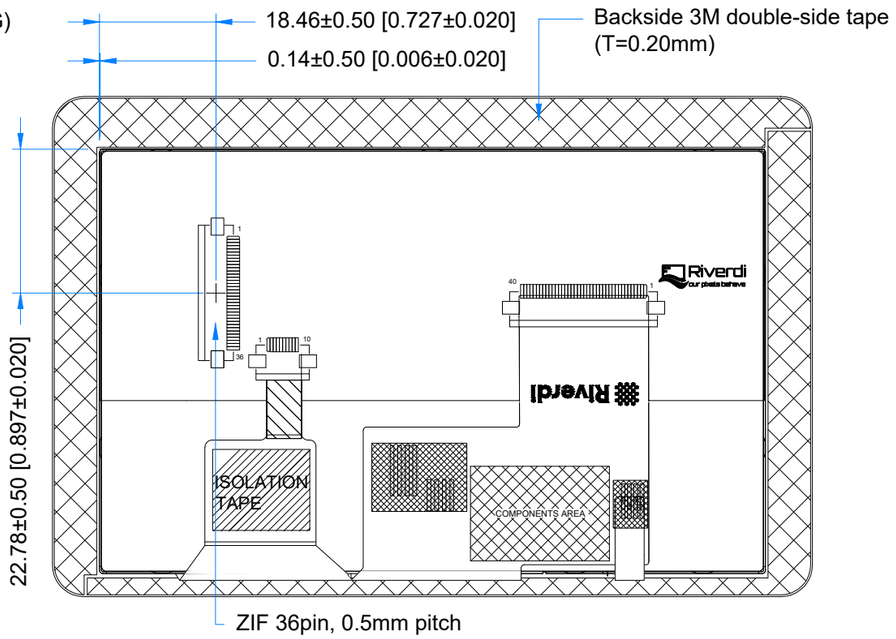
GENERAL NOTES:
1. SURFACE LUMINANCE: 500cd/m^2
2. OPERATING TEMPERATURE: -20°C ~ 70°C
3. STORAGE TEMPERATURE: -30°C ~ 80°C
4. WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm
5. RoHS COMPLIANT

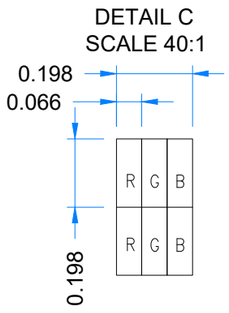
PN: RVT43ULSNWC02 V5				Riverdi
SN:				
DRAWN:	M.Stabinski	2026.11.18	1:0.97	
CHECKED:	M.Wierzbowski	2026.11.18	[mm]	
APPR:	M.Wierzbowski	2026.11.18	ISO A3	P. 1 of 1

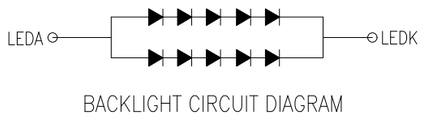
Revision:	Changes:	Date:
1.0	Initial Case, PCN: RVD002-107	2026.11.18



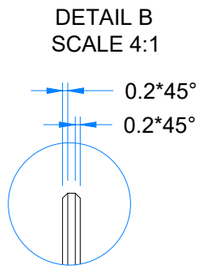








BACKLIGHT CIRCUIT DIAGRAM



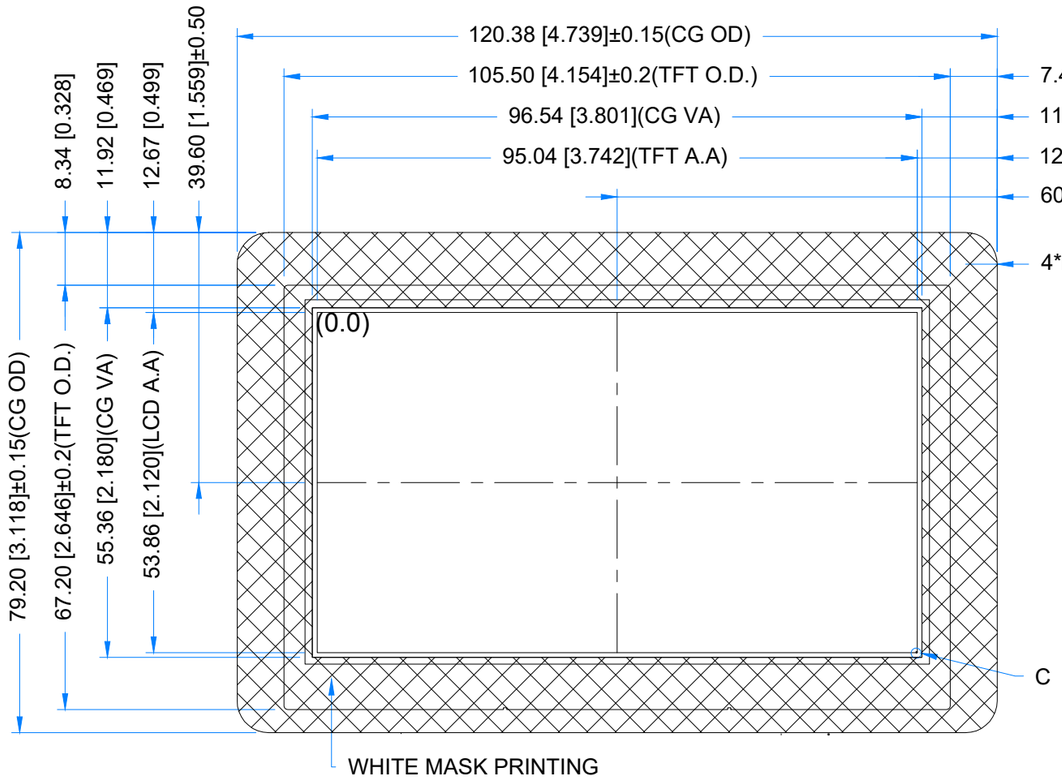
TFT NOTES:
1. DISPLAY TYPE: TFT, TRANSMISSIVE, NORMALLY WHITE
2. RESOLUTION: 480 x 272
3. VIEWING ANGLE: 12 O'CLOCK
4. CONTROLLER IC: SSD1963QL9
5. OPERATION VOLTAGE: VDD=3,3V (TYP.)

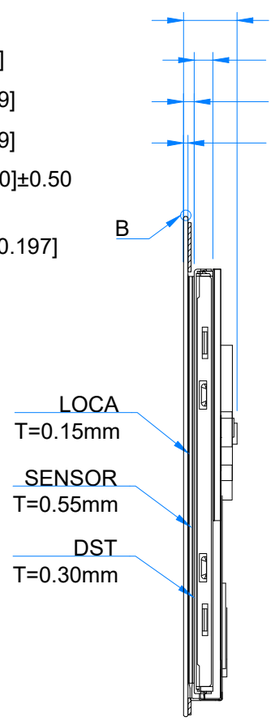
TP NOTES:
1. TP STRUCTURE: G+G
2. CG THICKNESS: 0.70mm
3. DRIVER IC: FT5446U
4. SURFACE HARDNESS: 7H
5. INTERFACE: I2C

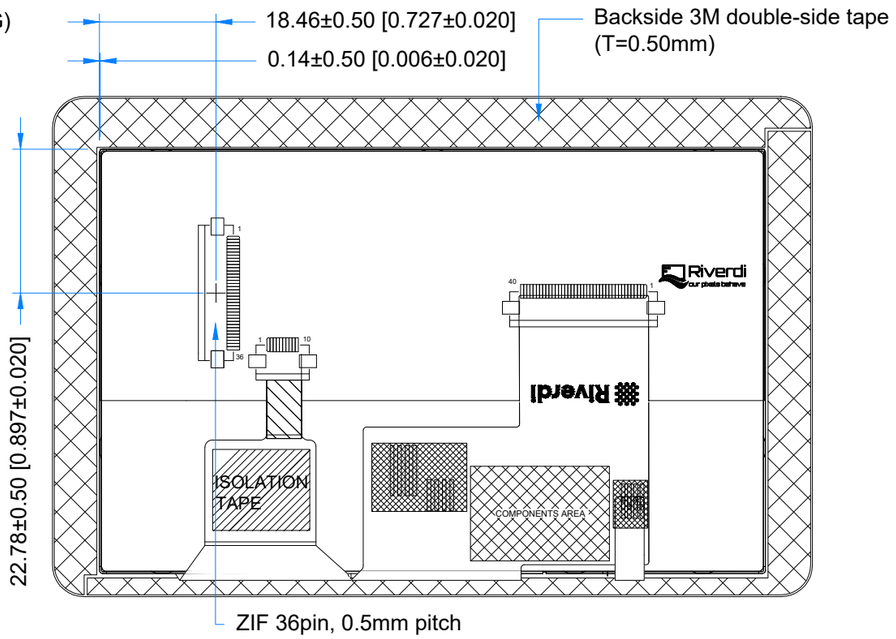
GENERAL NOTES:
1. SURFACE LUMINANCE: 500cd/m^2
2. OPERATING TEMPERATURE: -20°C ~ 70°C
3. STORAGE TEMPERATURE: -30°C ~ 80°C
4. WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm
5. RoHS COMPLIANT

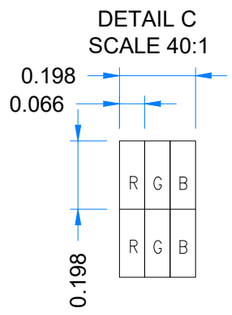
PN: RVT43ULSNWC03 V5				Riverdi
SN:				
DRAWN:	M.Stabinski	2026.11.18	1:0.97	
CHECKED:	M.Wierzbowski	2026.11.18	[mm]	
APPR:	M.Wierzbowski	2026.11.18	ISO A3	P. 1 of 1

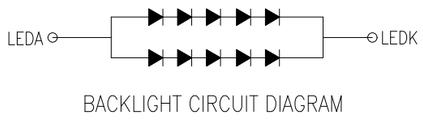
Revision:	Changes:	Date:
1.0	Initial Case, PCN: RVD002-107	2026.11.18



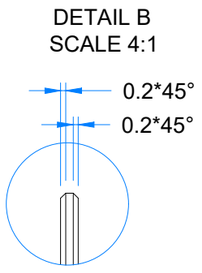








BACKLIGHT CIRCUIT DIAGRAM



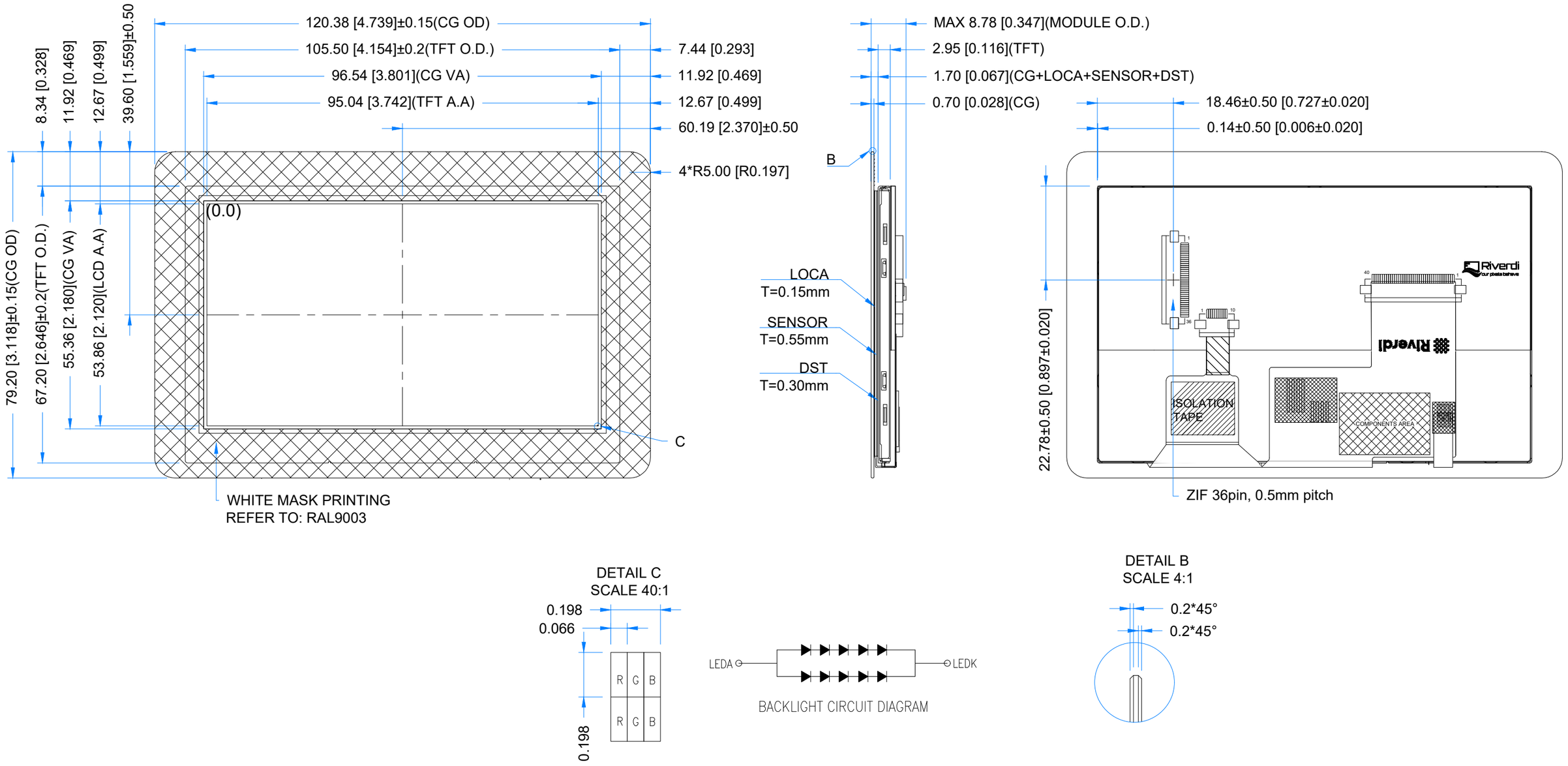
TFT NOTES:
1. DISPLAY TYPE: TFT, TRANSMISSIVE, NORMALLY WHITE
2. RESOLUTION: 480 x 272
3. VIEWING ANGLE: 12 O'CLOCK
4. CONTROLLER IC: SSD1963QL9
5. OPERATION VOLTAGE: VDD=3,3V (TYP.)

TP NOTES:
1. TP STRUCTURE: G+G
2. CG THICKNESS: 0.70mm
3. DRIVER IC: FT5446U
4. SURFACE HARDNESS: 7H
5. INTERFACE: I2C

GENERAL NOTES:
1. SURFACE LUMINANCE: 500cd/m^2
2. OPERATING TEMPERATURE: -20°C ~ 70°C
3. STORAGE TEMPERATURE: -30°C ~ 80°C
4. WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm
5. RoHS COMPLIANT

PN: RVT43ULSNWC04 V5				Riverdi
SN:				
DRAWN:	M.Stabinski	2026.11.18	1:0.97	
CHECKED:	M.Wierzbowski	2026.11.18	[mm]	
APPR:	M.Wierzbowski	2026.11.18	ISO A3	P. 1 of 1

Revision:	Changes:	Date:
1.0	Initial Case, PCN: RVD002-107	2026.11.18



BACKLIGHT CIRCUIT DIAGRAM

TFT NOTES:
1. DISPLAY TYPE: TFT, TRANSMISSIVE, NORMALLY WHITE
2. RESOLUTION: 480 x 272
3. VIEWING ANGLE: 12 O'CLOCK
4. CONTROLLER IC: SSD1963QL9
5. OPERATION VOLTAGE: VDD=3,3V (TYP.)

TP NOTES:
1. TP STRUCTURE: G+G
2. CG THICKNESS: 0.70mm
3. DRIVER IC: FT5446U
4. SURFACE HARDNESS: 7H
5. INTERFACE: I2C

GENERAL NOTES:
1. SURFACE LUMINANCE: 500cd/m^2
2. OPERATING TEMPERATURE: -20°C ~ 70°C
3. STORAGE TEMPERATURE: -30°C ~ 80°C
4. WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm
5. RoHS COMPLIANT

PN: RVT43ULSNWC05 V5				Riverdi
SN:				
DRAWN:	M.Stabinski	2026.11.18	1:0.97	
CHECKED:	M.Wierzbowski	2026.11.18	[mm]	
APPR:	M.Wierzbowski	2026.11.18	ISO A3	P. 1 of 1

5. ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT
Power Supply Voltage	VDD	-0.3	4.6	V
Input Voltage for Logic	VIN	-0.3	VDD	V
Input Voltage for LED Inverter	BLVDD	-0.3	7.0	V
Operating Temperature	T_{OP}	-20	70	°C
Storage Temperature	T_{ST}	-30	80	°C

Note. The above are maximum values. If exceeded, they may cause permanent damage to the unit.

6. ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage for Module	VDD	3.0	3.3	3.6	V
Input Voltage for LED Inverter	BLVDD	2.8	3.3	5.5	V
Input Voltage ‘H’ level for BL_E pin	BL_E_H	1.5	-	5.5	V
Input Voltage ‘L’ level for BL_E pin	BL_E_L	0	-	0.7	
Input Current (Exclude LED Backlight)	IDD	-	25	32	mA
LED Backlight Current	$IDD_{backlight}$		265	332	mA
LED Backlight Current	$IDD_{backlight}$		156	195	mA
Total Input Current (Include LED Backlight 100%)	IDD_{total}	-	290	363	mA
Input Voltage ' H ' level	V_{IH}	0.7VDD	-	VDD	V
Input Voltage ' L ' level	V_{IL}	0	-	0.2VDD	V
Backlight lifetime	-	30,000	50,000	-	hours

7. ELECTRO-OPTICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT	RMK	NOTE
Response Time	Tr+Tf	θ=0° ø=0° Ta=25 °C	-	25	50	ms	FIG 1.	4, 7
Contrast Ratio	Cr		400	500	-	---	FIG 2.	1, 7
Surface Luminance	Lv		-	500	-	cd/m2		2, 7
Luminance Uniformity	δ WHITE		80	-	-	%		3
Viewing Angle Range	θ	ø = 90°	40	50	-	deg	FIG 3.	6
		ø = 270°	60	70	-	deg		
		ø = 0°	60	70	-	deg		
		ø = 180°	60	70	-	deg		
CIE (x, y) Chromaticity	Rx	θ=0° ø=0° Ta=25 °C	0.546	0.596	0.646	-	FIG 2.	5,7
	Ry		0.312	0.362	0.412	-		
	Gx		0.277	0.327	0.377	-		
	Gy		0.524	0.574	0.624	-		
	Bx		0.097	0.147	0.197	-		
	By		0.016	0.066	0.116	-		
	Wx		0.236	0.286	0.336	-		
	Wy		0.256	0.306	0.356	-		
NTSC ratio	-	-		55.2	-	%		

Note 1. Contrast Ratio (CR) is defined mathematically as below, for more information see Figure 1.

$$\text{Contrast Ratio} = \frac{\text{Average Surface Luminance with all white pixels (P1, P2, P3, P4, P5)}}{\text{Average Surface Luminance with all black pixels (P1, P2, P3, P4, P5)}}$$

Note 2. Surface luminance is the LCD surface from the surface with all pixels displaying white. For more information see Figure 2.

Lv = Average Surface Luminance with all white pixels (P1, P2, P3, P4, P5)

Note 3. The uniformity in surface luminance δ WHITE is determined by measuring luminance at each test position 1 through 5, and then dividing the minimum luminance of 5 points luminance by maximum luminance of 5 points luminance. For more information see Figure 2.

$$\delta \text{ WHITE } = \frac{\text{Minimum Surface Luminance with all white pixels (P1, P2, P3, P4, P5)}}{\text{Maximum Surface Luminance with all white pixels (P1, P2, P3, P4, P5)}}$$

Note 4. Response time is the time required for the display to transition from white to black (Rise Time, Tr) and from black to white (Decay Time, Tf). For additional information see Figure 1. The test equipment is BM-7A.

Note 5. CIE (x, y) chromaticity, the x, y value is determined by measuring luminance at each test position 1 through 5, and then make average value.

Note 6. For TFT module, viewing angle is the angle at which the contrast ratio is greater 10. The angles are determined for the horizontal or x axis and the vertical or y axis with respect to the z axis which is normal to LCD surface. For more information see Figure 3.

Note 7. Viewing angle is measured at the center point of the LCD by CONOSCOPE (ergo-80). For response time testing, the testing data is based on BM-7A. Instruments for Contrast Ratio, Surface Luminance, Luminance Uniformity, Chromaticity the test data is based on SR-3A.

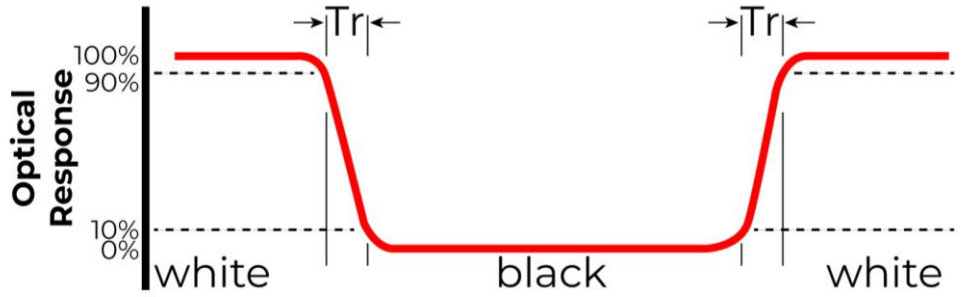
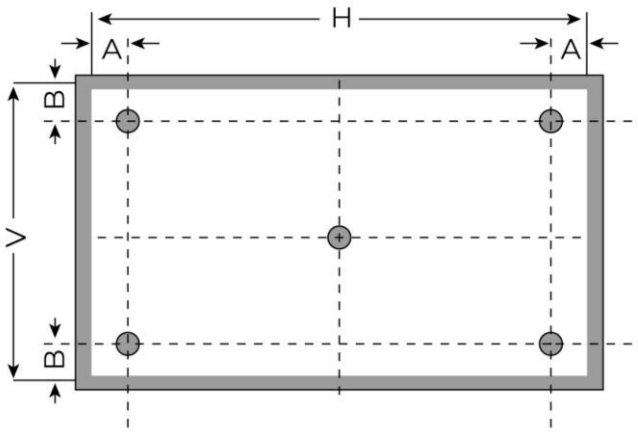


Figure 1. The definition of response time



A: 5mm

B: 5mm

H, V: Active Area

Light spot size ∅=5mm, 500mm distance from the LCD surface to detector lens.

Measurement instrument is SR-3A

Figure 2. Measuring method for Contrast ratio, surface luminance, Luminance uniformity, CIE (x, y) chromaticity

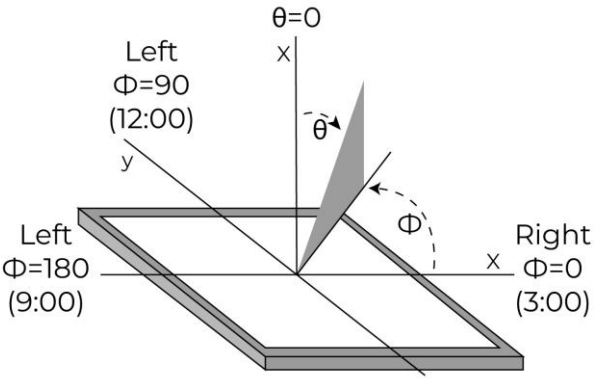


Figure 3. The definition of viewing angle

8. INTERFACES DESCRIPTION

PIN	SYMBOL	I/O/P	DESCRIPTION
1	GND	P	Power Ground
2	VDD	P	Power Supply: +3.3V
3	BL_E	I	Backlight Control Signal, H: On/L: Off (internally pulled-up to BLVDD)
4	D/C	I	Data/Command Select
5	WR	I	Write Strobe Signal
6	RD	I	Read Strobe Signal
7-22	D0-D15	I	Data Bus. Pins not used should be floating.
23	NC	-	No Connection
24	TP_INT	O	Touch panel interrupt output
25	CS	I	Chip Select
26	RESET	I	Hardware reset
27	DISP ON	I	Display Control H: On/L: Off (internally pulled-up)
28	NC	-	No Connection
29	TP_SCL	I	Touch panel I2C clock
30	TP_SDA	I/O	Touch panel I2C data
31	TP_RST	I	Touch panel reset
32	NC	-	No Connection
33	BLED-	P	Backlight ground, can be connected to GND
34	VLED-	P	Backlight ground, can be connected to GND
35	VLED+	P	Backlight power supply, can be connected to VDD
36	VLED+	P	Backlight power supply, can be connected to VDD

I/O/P definition: I----Input O----Output P----Power/Ground

9. INTERFACE TIMING CHARACTERISTICS

9.1 8080 Mode

The 8080 mode MCU interface consist of CS#, D/C#, RD#, WR#, D[15:0]. This interface use WR# to define a write cycle and RD# for read cycle. If the WR# goes low when the CS# signal is low, the data or command will be latched into the system at the rising edge of WR#. Similarly, the read cycle will start when RD# goes low and end at the rising edge of RD#.

9.2 Parallel 8080-series Interface Timing

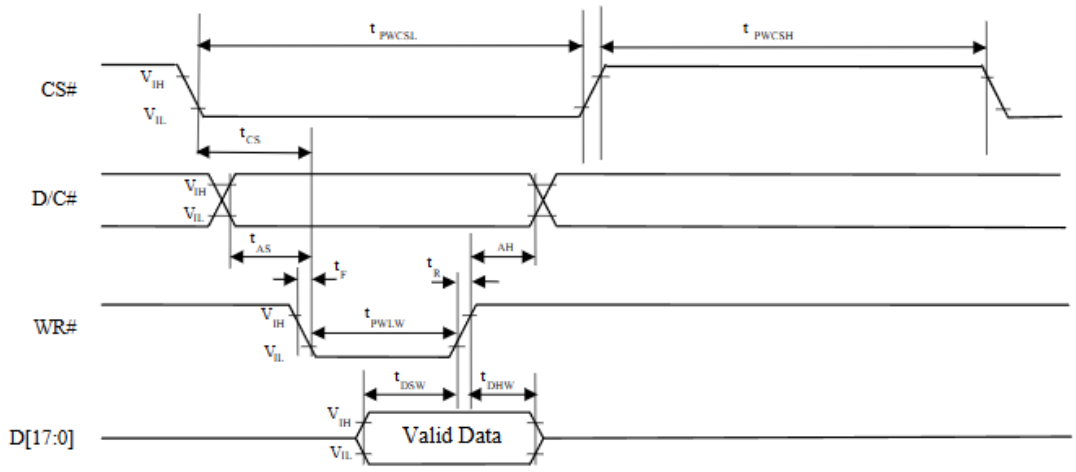


Figure 5. Parallel 8080-series Interface Timing Diagram (Write Cycle)

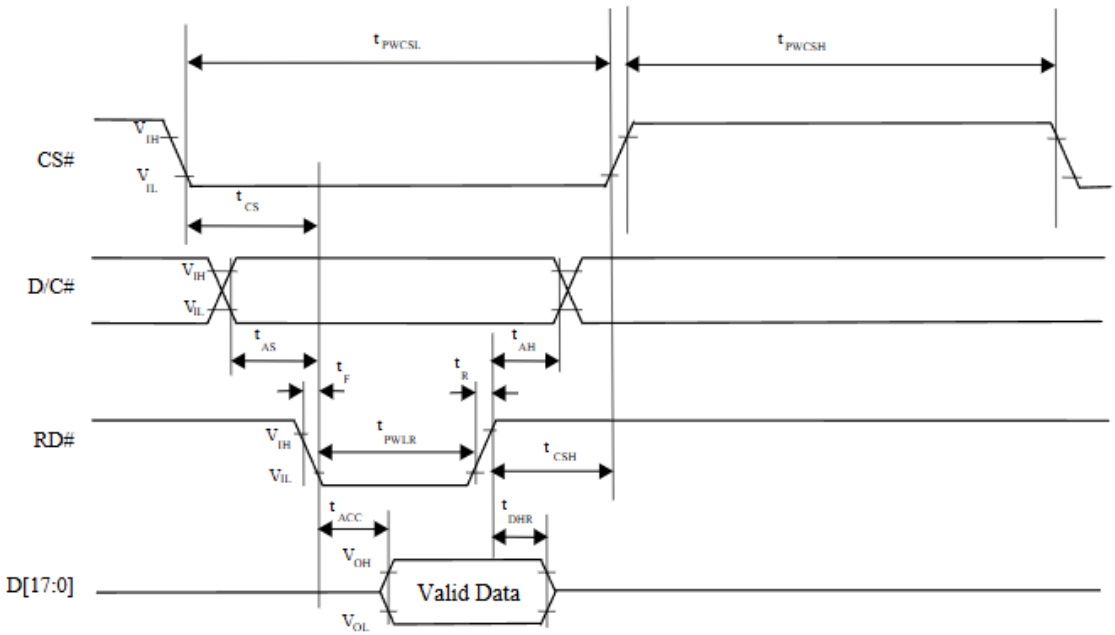


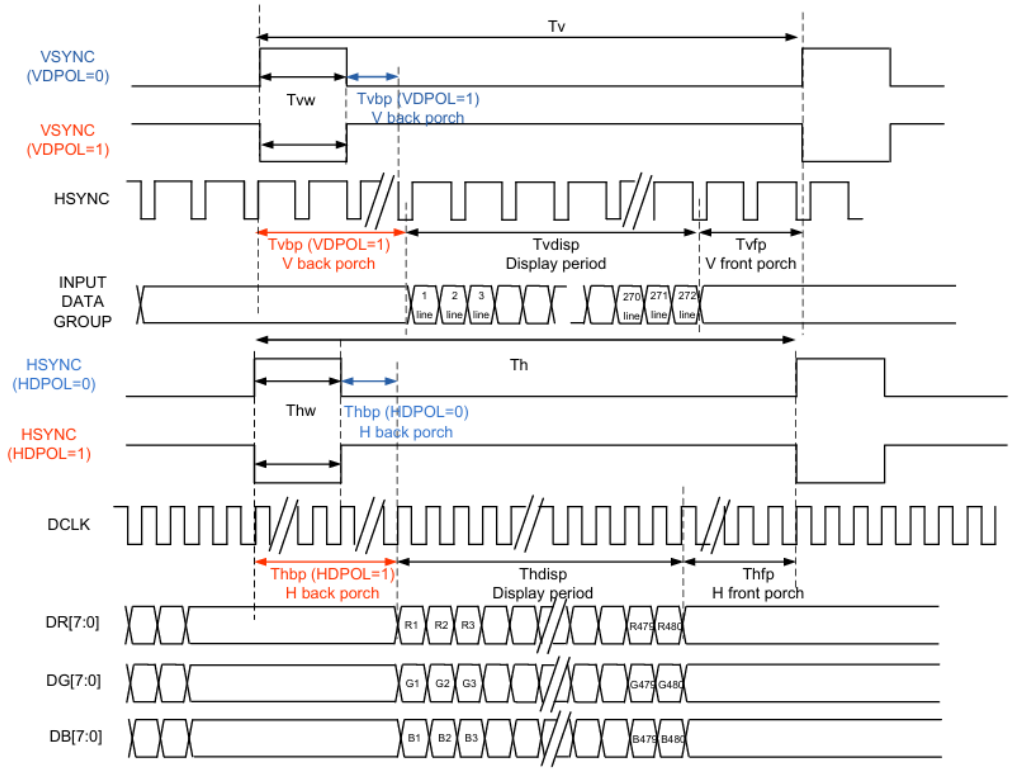
Figure 6. Parallel 8080-series Interface Timing Diagram (Read Cycle)

10. TIMING CHARACTERISTICS

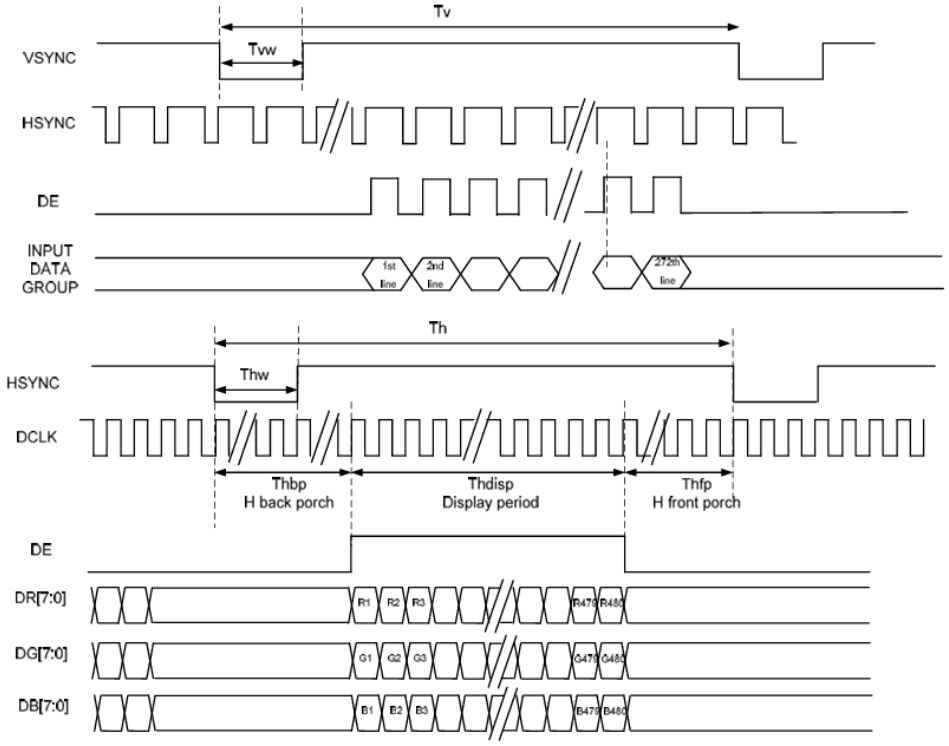
10.1 Timing table

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
DCLK frequency		Fclk	8	9	12	MHz
DCLK Period		Tclk	83	111	125	ns
HSYNC	Period Time	Th	485	531	598	DCLK
	Display Period	Thdisp		480		
	H_{sync} Back Porch	Thbp	3	43	43	
	H_{sync} Front Porch	Thfp	2	8	75	
	H_{sync} Pulse Width	Thw	2	4	75	
VSYNC	Period Time	Tv	276	292	321	HSYNC
	Display Period	Tvdisp		272		
	V_{sync} Back Porch	Tvbp	2	12	12	
	V_{sync} Front Porch	Tvfp	2	8	37	
	V_{sync} Pulse Width	Tvw	2	4	37	

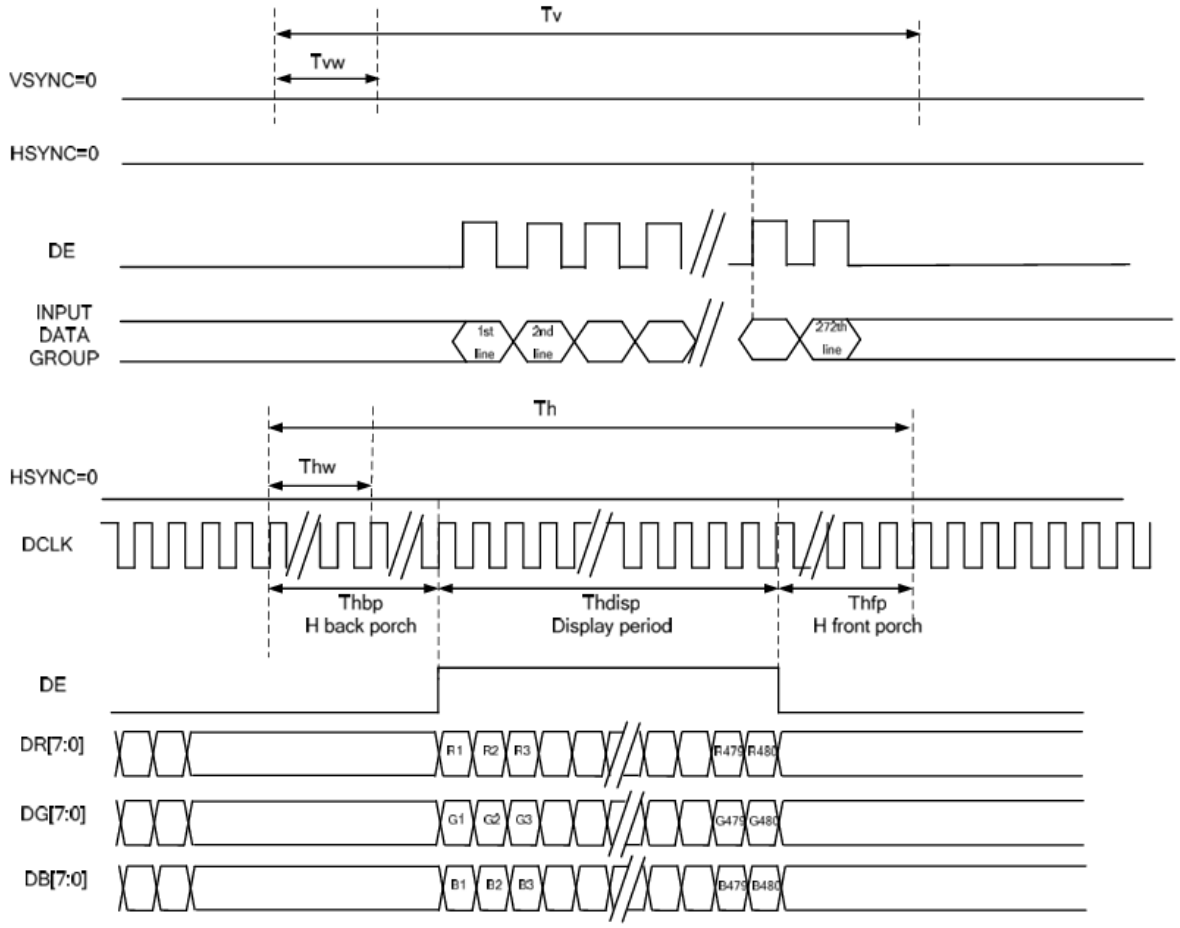
10.2 SYNC Mode Timing Diagram



10.3 SYNC-DE Mode Timing Diagram



10.4 DE Mode Timing Diagram



11. INSPECTION

Standard acceptance/rejection criteria for TFT module according to document available here.

12. RELIABILITY TEST

NO.	TEST ITEM	TEST CONDITION	NOTE
1	High Temperature Storage	80℃ ± 2℃ / 240Hrs.	IEC60068-2-2 GB2423.2
2	Low Temperature Storage	-30℃ ± 2℃ / 240Hrs.	IEC60068-2-1 GB2423.1
3	High Temperature Operating	70℃ ± 2℃ / 240Hrs.	IEC60068-2-2 GB2423.2
4	Low Temperature Operating	-20℃ ± 2℃ / 240Hrs.	IEC60068-2-1 GB2423.1
5	High Temperature and High Humidity Operation Test	60 ± 5℃, 90%RH 240Hrs.	IEC60068-2-3 GB/T2423.3
6	Thermal Shock Test (Non-operating)	-20±2℃(30Min.)~25±2℃(5Min.)~60±2℃(30Min.) 10Cycles	IEC60068-2-14 GB2423.22
7	Vibration Test (Non-operating)	Frequency: 10~55Hz Amplitude: 1.5mm Sweep Time: 11Mins Test Period: 6 Cycles For Each Direction of X, Y, Z (Packing Condition)	IEC60068-2-6 GB2423.10
8	Electro Static Discharge Test	R: 330Ω, C:150pF, 5points/panel Air: ±8KV, 10times; Contact: ±4KV, 10times; (Environment: 15℃~35℃, 30%~60%, 86Kpa~106Kpa)	IEC61000-4-2 GB/T17626.2

Note 1: Without water condensation.

Note 2: The function test shall be conducted after 2 hours storage at the room temperature (25℃±2℃) and room humidity (65%±5%) after removed from the test chamber. In the standard conditions, there shall be no functional defects occurred.

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contact@riverdi.com

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