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SMART DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

CUSTOMER : Winstar

MODEL NO. : WLOF00101000JGDAESA02

APPROVED BY: (FOR CUSTOMER USE ONLY)	
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VERSION	DATE	REVISED PAGE NO.	SUMMARY
A	2025/12/26	P13	Revised the Test Condition of Static electricity test

TFT Display Inspection Specification: <https://www.winstar.com.tw/technology/download.html>

Precaution in use of TFT module: <https://www.winstar.com.tw/technology/download/declaration.html>

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RECORDS OF REVISION			DOC. FIRST ISSUE
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0	2025/09/23		First issue
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1. Smart Display Classification Information

W	L	0F	001010	00J	G	D	AE	S	A	02
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪

①	W: WINSTAR products			
②	Type: L:Standard K:Customization			
③	Display Type:	Standard:	0H: Character STN 0X: Graphic STN (TAB/COF) 0F: TFT EH: Character OLED EX: OLED (TAB/COF)	0G: Graphic STN 0P: Graphic STN (COG) EG: Graphic OLED EP: OLED (COG)
		Customization:	DH: Character DN: Graphic ED: OLED	DG: Graphic STN 0J: TFT
④	Display size: (diagonal) / Display format: (resolution)	Character STN:	e.g., 8x1: 000801 16x2: 001602 24x4: 002404	
		Graphic STN:	e.g., 128x64: 012864 320x240: 320240	
		TFT Size (inch):	000096-0.96" / 000350-3.5" / 000430-4.3" / 000570-5.7" 000700-7.0" / 000800-8.0" / 001020-10.2" / 001210-12.1" (The last two digits are two digits after the decimal point)	
⑤	Serial No:	OLED:	e.g., 128x64: 012864 Customization: 0001XX	
		0A1 ~ 0ZZ	Customization STN: 000	

⑥	Touch Panel Type:	N: Without TP T: RTP G: CTP								
⑦	Model Interface:	A: CAN B: Bluetooth C: Controller Specified D: RS485 E: RS232 F: USART G: Logic I/O H: HDMI R: Memory Specified N: Ethernet J: Analog I/O K: USB L: WIFI M: Zigbee X: Combined Y: Proprietary interface								
⑧	Interface Serial No.:	AA ~ ZZ								
⑨	Control Category:	S: Smart Display E: Entry N: Non-specified								
⑩	Special Code:	A → Generic B → Industrial C → Automotive D → Medical								
⑪	Model code:	00 ~ ZZ								

2. Summary

10.1 Inch Smart Display (RS485 series) Features

1. +12V power supply input with 8V to 28V dynamic range power input, the power consumption is around 6 Watt.
2. Self-testing after booting function.
3. RS485 communication interface.
4. Built in 32MB flash memory, store the font and Object Dictionary Data.
5. Support capacitive touch panel (CTP).
6. Embedded buzzer controlled by Master Device.
7. HOST can be used on multiple platforms, such as Computer (with USB to RS-485 Dongle), MCU.
8. GPIO PIN support.

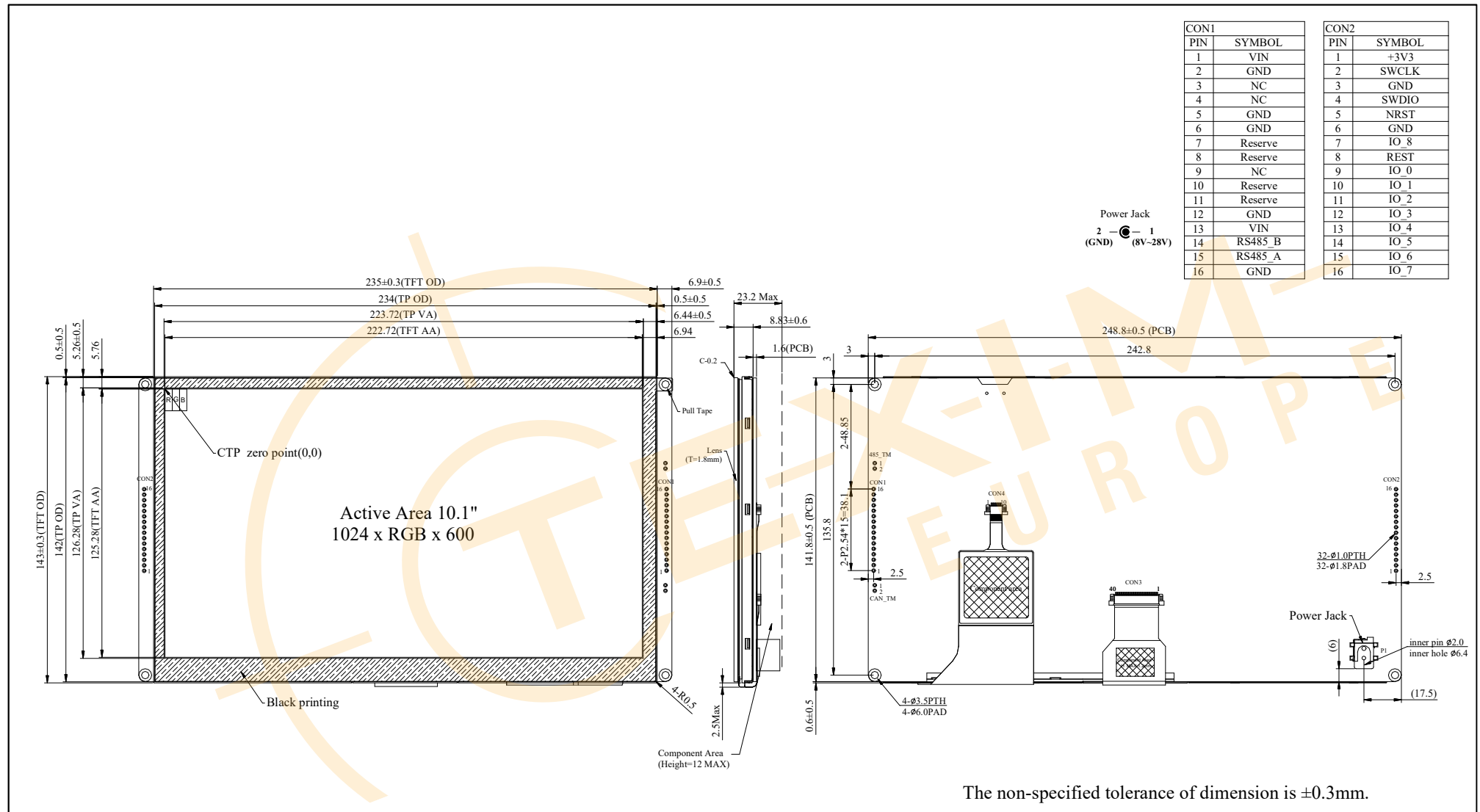


3. Product information

General information

Item	Standard Value	Unit
Operating voltage	8V~28V dynamic	Vdc
Communication Interface	RS485	Vpp
MCU	STM32F746	N/A
Flash Memory	32	MB
LCD display size	10.1	inch
Dot Matrix	1024 x RGBx600(TFT)	dot
Module dimension	248.8(W) x 143(H) x 23.2(D)	mm
Active area	222.72 (H) x 125.28(V)	mm
Pixel pitch	0.2175(W) x 0.2088(H)	mm
Brightness	Min: 300; Typ: 400	
LCD type	TFT, Normally Black, Transmissive	
View Direction	85/85/85/85	
Aspect Ratio	16:9	
With /Without TP	With CTP	
Surface	Glare	

4. Contour Drawing



5. Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	°C
Storage Temperature	TST	-30	—	+80	°C

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

1. Temp. $\leq 60^{\circ}\text{C}$, 90% RH MAX. Temp. $> 60^{\circ}\text{C}$, Absolute humidity shall be less than 90% RH at 60°C

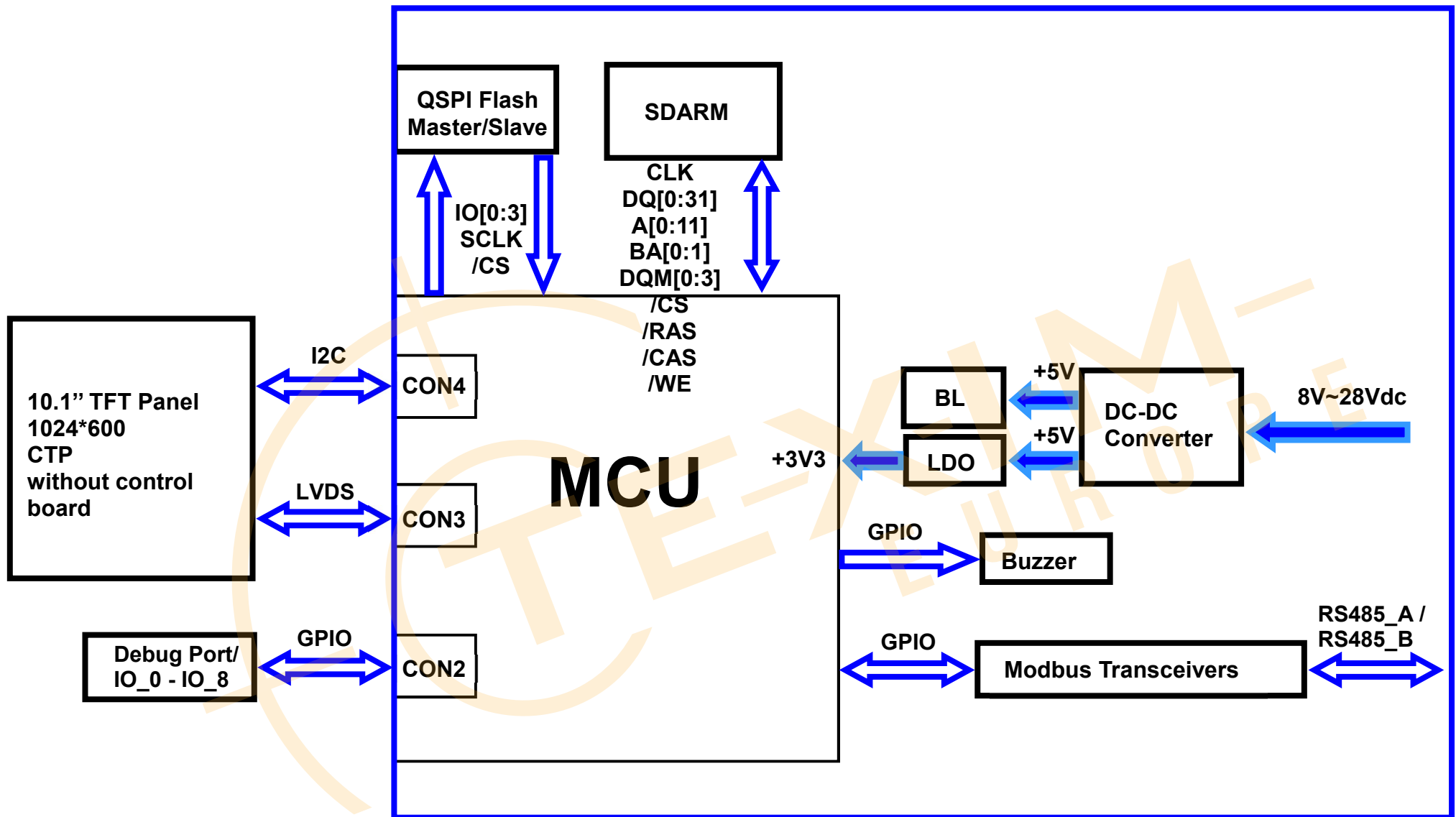
6. Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage	VCC	—	8	12	28	V
Supply LCM current	I(mA)	-	-	550	-	mA

7. BOM

Item	Description	Remark
LCM	WF101JTYAHLNB0#	
PCBA	SV10010R100JC00N0108	

8. Block diagram



9. Interface

CON1 definition:

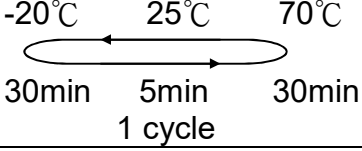
Pin	Symbol	Function	Remark
1	VIN	Power supply 8V to 28V input	Input
2	GND	Power supply GND input	Input
3	NC	-	-
4	NC	-	-
5	GND	Power supply GND input	GND
6	GND	Power supply GND input	GND
7	Reserve	USB_D-	Reserve
8	Reserve	USB_D+	Reserve
9	NC	-	-
10	Reserve	USART RX interface(Reserve)	Reserve
11	Reserve	USART TX interface(Reserve)	Reserve
12	GND	Power supply GND input	GND
13	VIN	Power supply 8V to 28V input	Input
14	485B	RS485 D-	I/O
15	485A	RS485 D+	I/O
16	GND	Power supply GND input	Input

CON2 definition:

Pin	Symbol	Function	Remark
1	+3V3	3.3V power for JTAG interface	Output
2	SWCLK	CLK pin for JTAG interface	Input
3	GND	GND for JTAG interface	Output
4	SWDIO	Data pin for JTAG interface	I/O
5	NRST	Reset pin for JTAG interface	Input
6	GND	GND	Output
7	IO_8	IO_8 for system Resume from suspend (Reserve)	WKup,ADC,Timer,Event,I/O
8	REST	Reset (active Low) (Reserve)	I
9	IO_0	ADC,DAC,Timer,Event,I/O	PA5
10	IO_1	ADC,Timer,Event,I/O	PA6
11	IO_2	ADC,Timer,Event,I/O	PA7
12	IO_3	RST,Timer,Event,I/O	PA8
13	IO_4	RST,Timer,Event,I/O	PC13
14	IO_5	ADC,Timer,Event,I/O	PB11
15	IO_6	RST,Timer,Event,I/O	PA15
16	IO_7	RST,ADC,Event,I/O	PD11

10. Reliability

Content of Reliability Test (Wide temperature, -20°C~70°C)

Environmental Test			
Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	80°C 200hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	70°C 200hrs	—
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-20°C 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 40°C,90%RH max	60°C,90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation 	-20°C/70°C 10 cycles	—
Vibration test	Endurance test applying the vibration during transportation and using.	Total fixed amplitude : 1.5mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes	3
Static electricity test	Endurance test applying the electric stress to the terminal.	VS=±2KV~±6KV (contact), ±2KV~±8KV(air) RS=330Ω CS=150pF 10 times	—

Note1: No dew condensation to be observed.

Note2: The function test shall be conducted after 4 hours storage at the normal Temperature and humidity after remove from the test chamber.

Note3: The packing have to including into the vibration testing.

Check samples by meter V_{IN} , I_{system}

Item	No 1	Note
V_{IN} (V)	12.1	
I_{System} (mA)	557	

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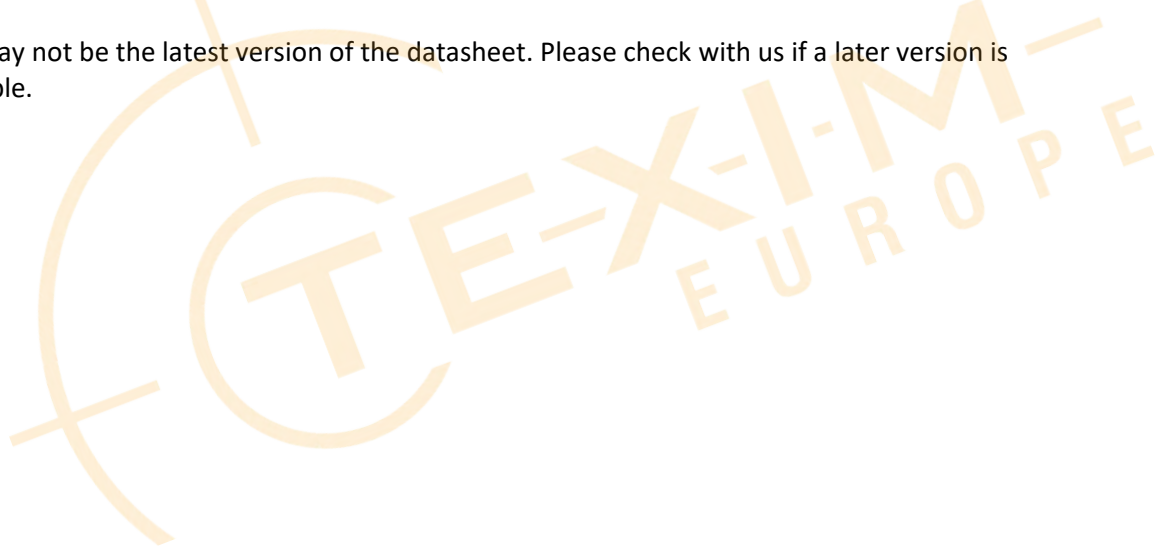
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All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.

Please contact us if you have any questions about the contents of the datasheet.

This may not be the latest version of the datasheet. Please check with us if a later version is available.





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