

**SERIES:** TS29 | **DESCRIPTION:** TACTILE SWITCH

**FEATURES**

- illuminated
- 5 color options
- through hole


**SPECIFICATIONS**

parameter	conditions/description	min	typ	max	units
rated voltage				12	Vdc
rated current				50	mA
withstanding voltage	for 1 minute		250		Vac
contact resistance	applying load of 2 times operating force at 5 Vdc, 10 mA			100	mΩ
insulation resistance	for 1 minute at 100 Vdc	100			MΩ
operating force		200	300	400	gf
return force		20			gf
actuator travel		0.25	0.35	0.45	mm
operating temperature		-30		80	°C
storage temperature		-40		90	°C
life	at 5 Vdc, 5 mA, 20 cycles/second, 1.5 times operating force		100,000		cycles
vibration	10~55~10 Hz, 1.5 mm amplitude, 2 hours on each XYZ				
flammability rating	see material table				
RoHS	yes				

**SOLDERABILITY**

parameter	conditions/description	min	typ	max	units
hand soldering	for maximum 3 seconds			350	°C
wave soldering	for maximum 5 seconds			260	°C

**PART NUMBER KEY**

**TS29 - 1212 - 1 - XX - 300 - D**

Base Number

LED Color:  
 WT = white  
 BL = blue  
 R = red  
 G = green  
 Y = yellow

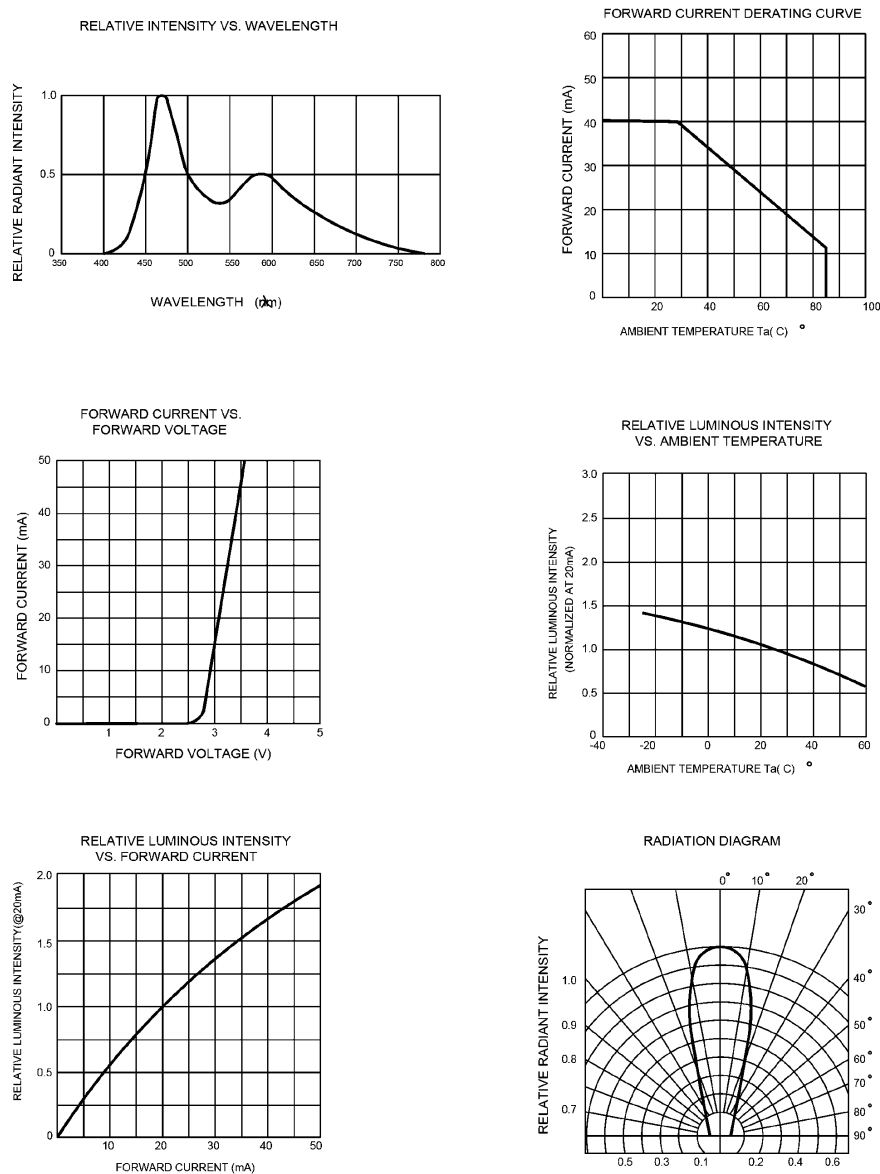
## LED ABSOLUTE MAXIMUM RATINGS (WHITE) (TA=25°C)

parameter	conditions/description	min	typ	max	units
power dissipation [Pd]				18	mW
DC forward current [If]				5	mA
peak forward current [Ifp]	pulse of 1/10 duty and 0.1 ms width			100	mA
reverse voltage [Vr]				5	V

## LED ELECTRO-OPTICAL CHARACTERISTICS (WHITE) (TA=25°C)

parameter	conditions/description	min	typ	max	units
forward voltage [Vf]	at If=20 mA		3.2	3.6	V
luminous intensity [Iv]	at If=20 mA	200	600		mcd
chromacity coordinates	at If=20 mA    white	X 0.285 Y 0.287	0.28 0.29	0.287 0.295	
reverse current [Ir]	at Vr=5 V			1	µA
viewing angle [2θ1/2]	at If=20 mA		30		deg

## LED ELECTRO-OPTICAL CHARACTERISTIC CURVES (WHITE)



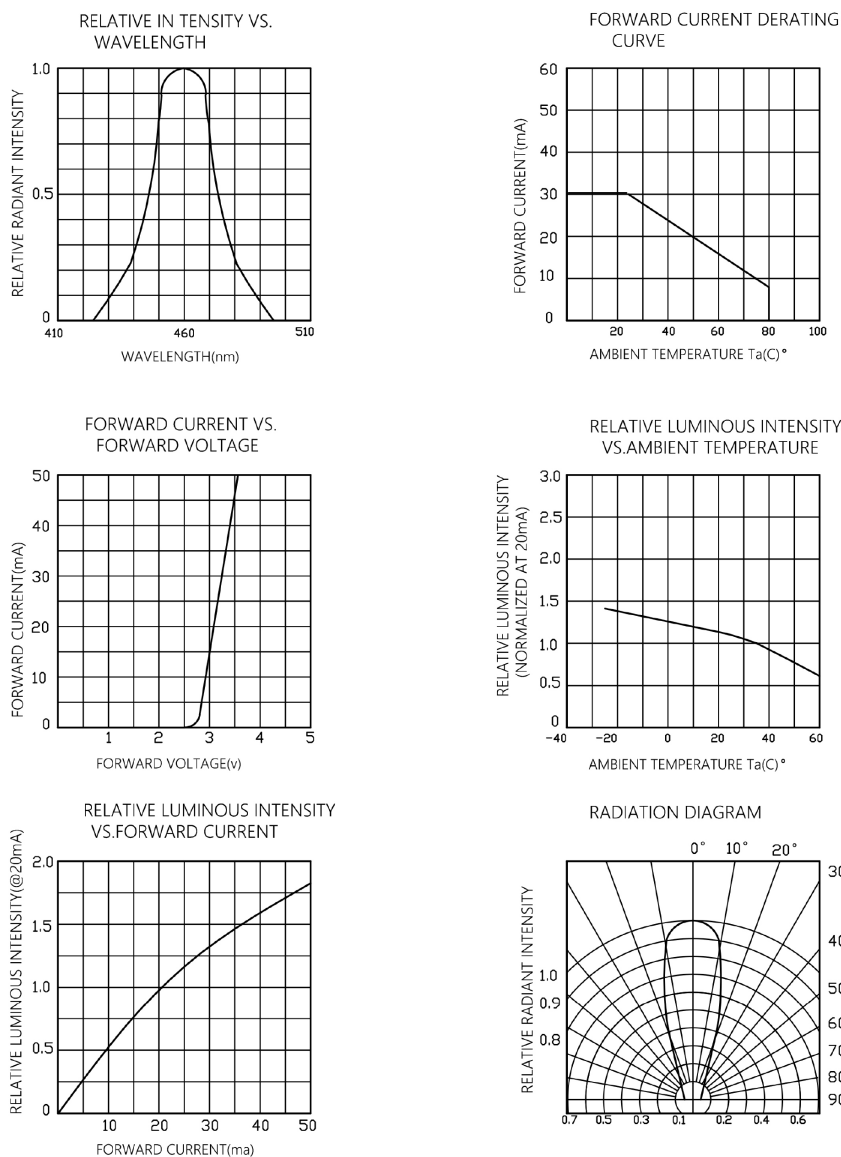
## LED ABSOLUTE MAXIMUM RATINGS (BLUE) (TA=25°C)

parameter	conditions/description	min	typ	max	units
power dissipation (Pd)				120	mW
DC forward current (If)				30	mA
peak forward current (Ifp)	pulse of 1/10 duty and 0.1 ms width			100	mA
reverse voltage (Vr)				5	V

## LED ELECTRO-OPTICAL CHARACTERISTICS (BLUE) (TA=25°C)

parameter	conditions/description	min	typ	max	units
forward voltage (Vf)	at If=20 mA		3.0	3.2	V
luminous intensity (Iv)	at If=20 mA	1,000	1,400		mcd
peak wavelength (λp)	at If=20 mA		460		nm
dominant wave length (λd)	at If=20 mA	465		470	nm
spectral line half-width (Δλ)	at If=20 mA		30		nm
viewing angle (2θ1/2)	at If=20 mA		30		deg

## LED ELECTRO-OPTICAL CHARACTERISTIC CURVES (BLUE)



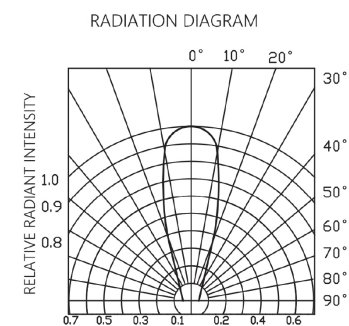
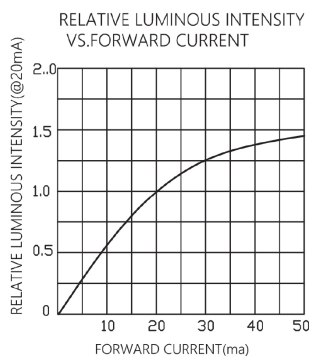
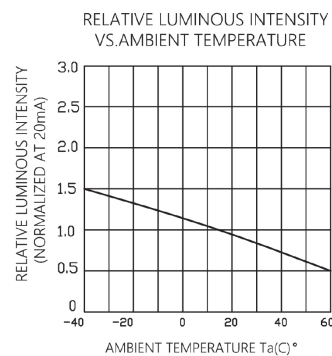
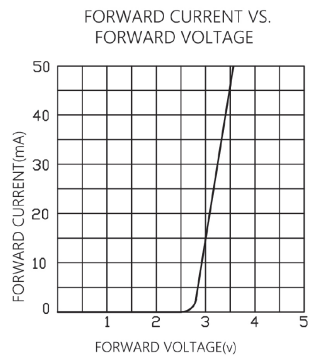
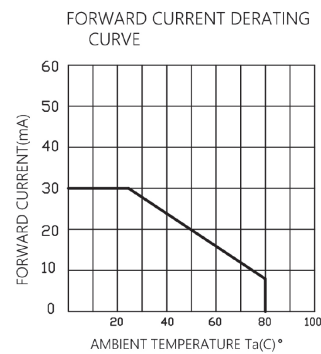
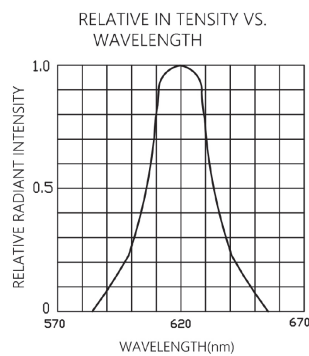
## LED ABSOLUTE MAXIMUM RATINGS (RED) (TA=25°C)

parameter	conditions/description	min	typ	max	units
power dissipation [Pd]				52	mW
DC forward current [IF]				20	mA
peak forward current [IFP]	pulse of 1/10 duty and 0.1 ms width			100	mA
reverse voltage [VR]				5	V

## LED ELECTRO-OPTICAL CHARACTERISTICS (RED) (TA=25°C)

parameter	conditions/description	min	typ	max	units
forward voltage [Vf]	at IF=20 mA		2.0	2.6	V
luminous intensity [Iv]	at IF=20 mA	2,600	3,000		mcd
reverse current [IR]	at VR=5 V			100	µA
peak wavelength [λp]	at IF=20 mA		622		nm
dominant wave length [λd]	at IF=20 mA	620		625	nm
spectral line half-width [Δλ]	at IF=20 mA		20		nm
viewing angle [2θ1/2]	at IF=20 mA		30		deg

## LED ELECTRO-OPTICAL CHARACTERISTIC CURVES (RED)



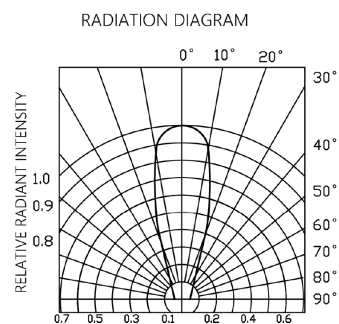
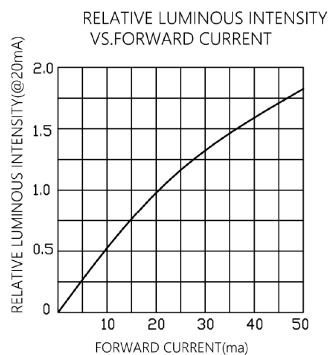
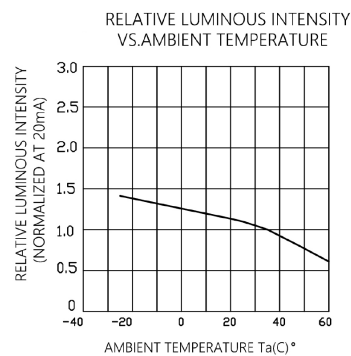
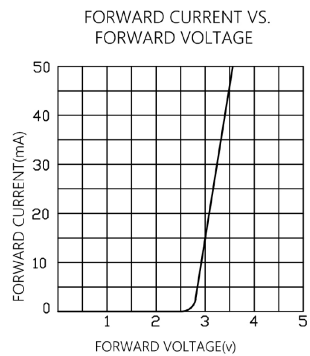
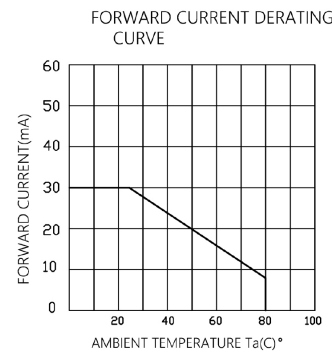
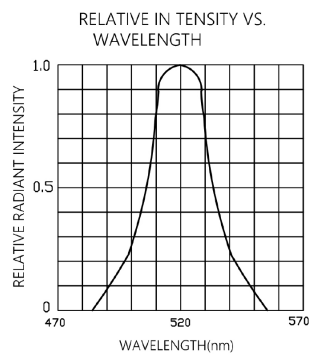
## LED ABSOLUTE MAXIMUM RATINGS (GREEN) (TA=25°C)

parameter	conditions/description	min	typ	max	units
power dissipation [Pd]				72	mW
DC forward current [If]				20	mA
peak forward current [Ifp]	pulse of 1/10 duty and 0.1 ms width			100	mA
reverse voltage [VR]				5	V

## LED ELECTRO-OPTICAL CHARACTERISTICS (GREEN) (TA=25°C)

parameter	conditions/description	min	typ	max	units
forward voltage [Vf]	at If=20 mA		3.2	3.6	V
luminous intensity [Iv]	at If=20 mA	14,500	15,000		mcd
reverse current [Ir]	at VR=5 V			1	µA
peak wavelength [λp]	at If=20 mA		515		nm
dominant wave length [λd]	at If=20 mA	510		525	nm
spectral line half-width [Δλ]	at If=20 mA		30		nm
viewing angle [2θ1/2]	at If=20 mA		30		deg

## LED ELECTRO-OPTICAL CHARACTERISTIC CURVES (GREEN)



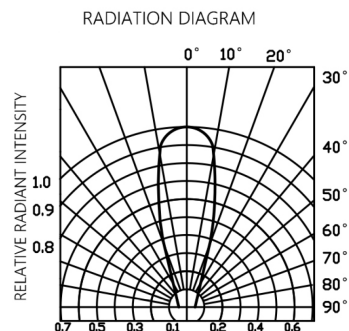
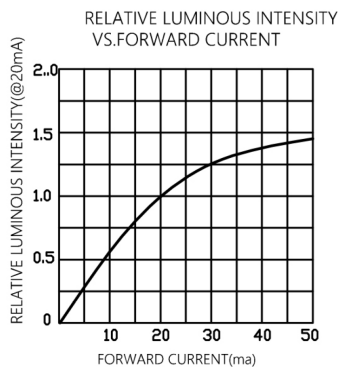
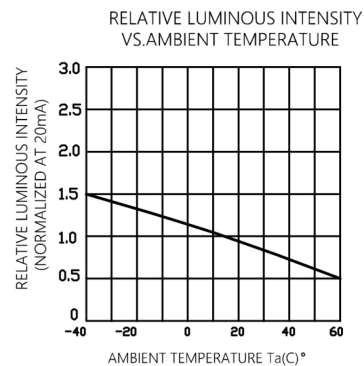
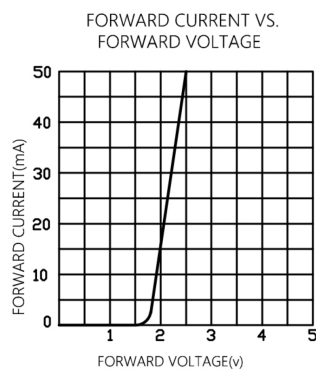
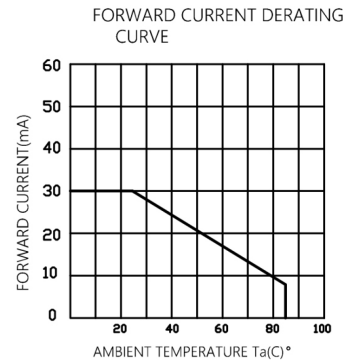
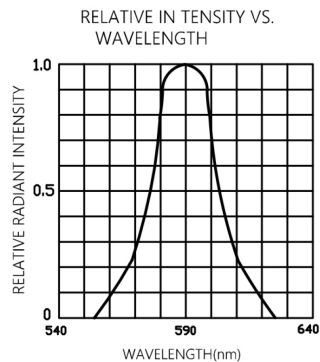
## LED ABSOLUTE MAXIMUM RATINGS (YELLOW) (TA=25°C)

parameter	conditions/description	min	typ	max	units
power dissipation [Pd]				60	mW
DC forward current [If]				20	mA
peak forward current [Ifp]	pulse of 1/10 duty and 0.1 ms width			100	mA
reverse voltage [Vr]				5	V

## LED ELECTRO-OPTICAL CHARACTERISTICS (YELLOW) (TA=25°C)

parameter	conditions/description	min	typ	max	units
forward voltage [Vf]	at If=20 mA		2.0	2.3	V
luminous intensity [Iv]	at If=20 mA	500	800		mcd
peak wavelength [λp]	at If=20 mA		589		nm
dominant wave length [λd]	at If=20 mA	587	590	593	nm
spectral line half-width [Δλ]	at If=20 mA		30		nm
viewing angle [2θ1/2]	at If=20 mA		30		deg

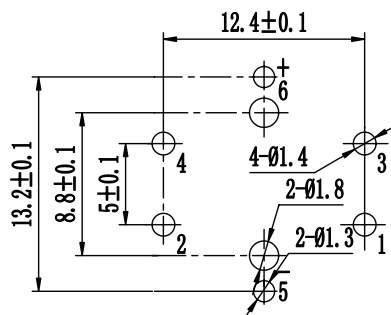
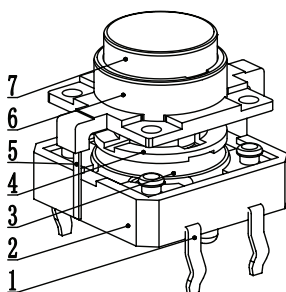
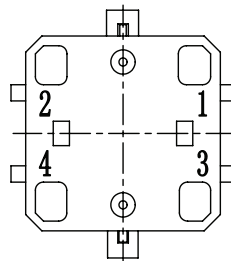
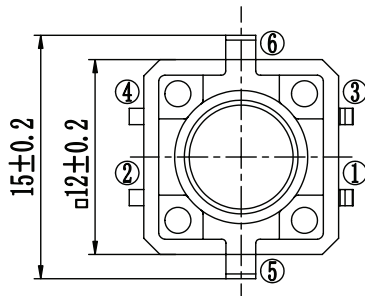
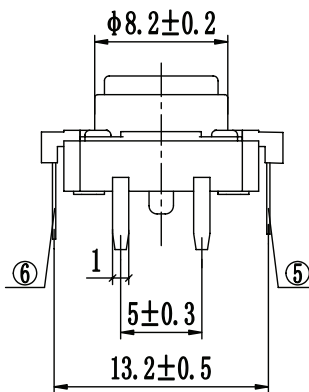
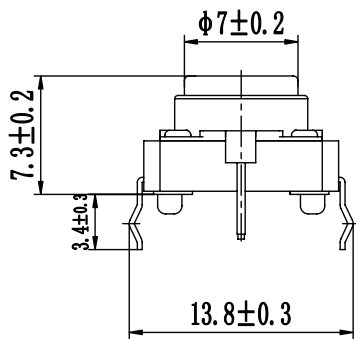
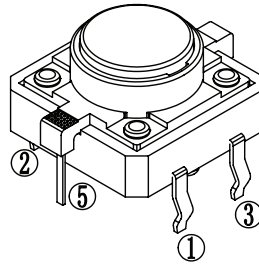
## LED ELECTRO-OPTICAL CHARACTERISTIC CURVES (YELLOW)



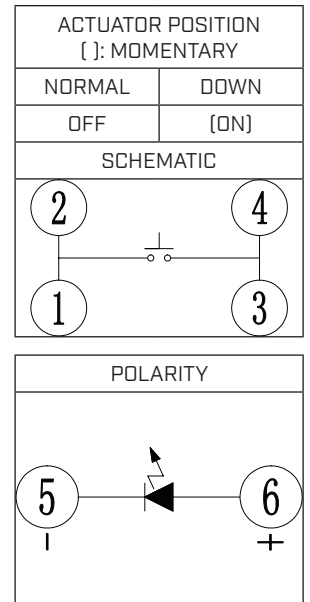
## MECHANICAL DRAWING

units: mm  
 tolerance:  $\pm 0.4$  mm  
 unless otherwise noted

ITEM	DESCRIPTION	MATERIAL	PLATING/COLOR
1	terminals	H62	silver
2	base	PA66 (UL94HB)	black
3	contacts	SUS	silver
4	burrn pad	PA66 (UL94HB)	black
5	LED		see part number key
6	cover	PA66 (UL94HB)	white
7	stem	PC (UL94HB)	red



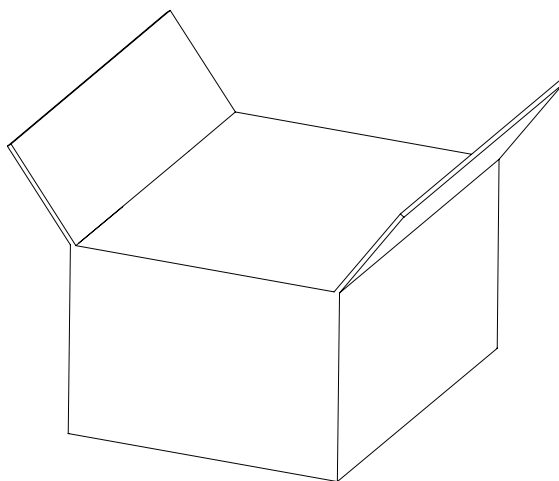
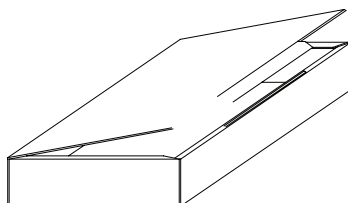
Recommended PCB Layout  
 Top View



## PACKAGING

units: mm

Inner Bag Size: 190 x 195 mm  
Inner Bag QTY: 100 pcs per box  
Carton Size: 430 x 340 x 350 mm  
Carton QTY: 7,500 pcs per carton





## REVISION HISTORY

rev.	description	date
1.0	initial release	06/14/2023

The revision history provided is for informational purposes only and is believed to be accurate.



CUI Devices offers a one (1) year limited warranty. Complete warranty information is listed on our website.

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