

# PRODUCT SPECIFICATION

**Model No.: CSOS-S28122 CSOS-S28123**

Descriptions:
<ul style="list-style-type: none"> <li>■ 0.28 Inch Single Digit Display</li> <li>■ CSOS-S28122 is Common Anode</li> <li>■ CSOS-S28123 is Common Cathode</li> <li>■ Emitting Color: Blue</li> <li>■ Standard: -11: Gray face, white segment. -21: Black face, white segment.</li> </ul>



CUSTOMER APPROVED SIGNATURES	APPROVED BY	CHECKED BY	PREPARED BY

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**Model No.: CSOS-S28122 CSOS-S28123**

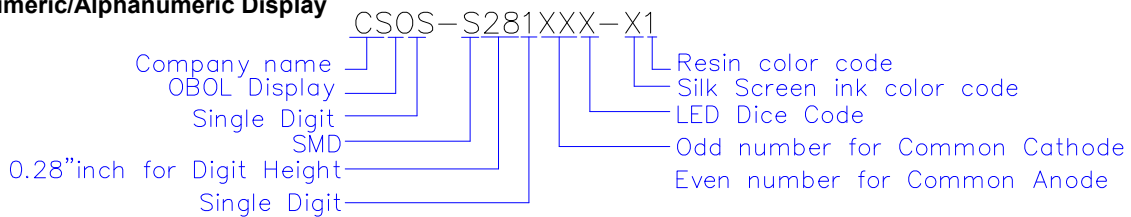
**Features -**

1. 0.28 inch (7.0mm) digit height.
2. Qualified according to JEDEC moisture sensitivity Level 2a.
3. RoHS compliant.
4. Low power consumption.
5. Easy mounting on P.C. board.

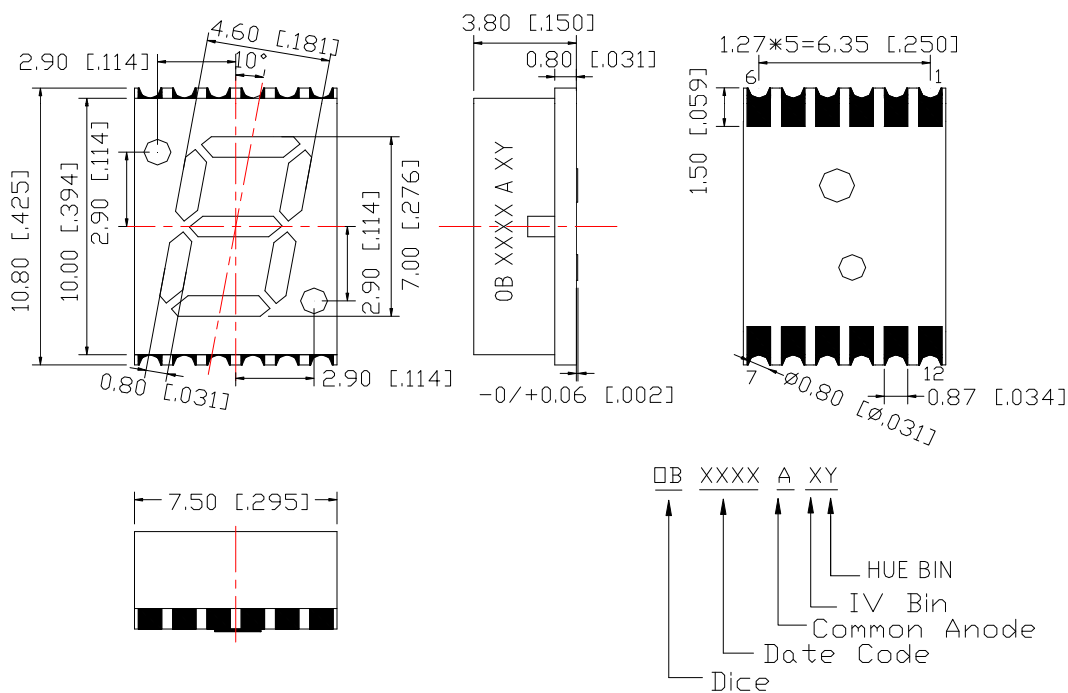
**Device Selection Guide -**

Model No.	Chip	
	Material	Emitting Color
CSOS-S2812XB	InGaN	Blue

**LED Numeric/Alphanumeric Display**



**Mechanical Dimensions -**

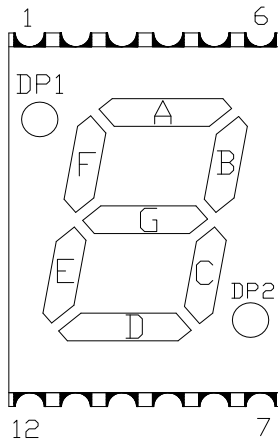


**Notes:**

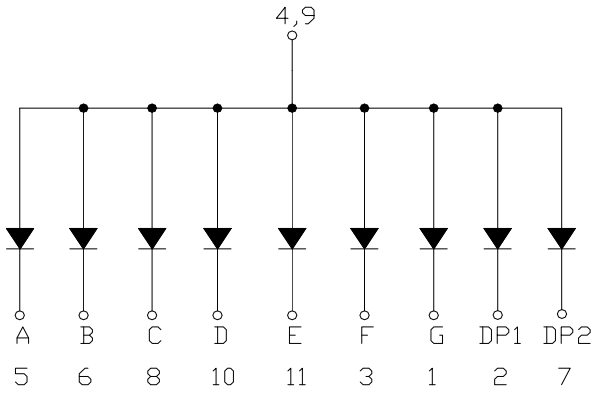
1. Dimension in millimeter [inch], tolerance is  $\pm 0.25$  [0.010] and angle is  $\pm 1^\circ$  unless otherwise noted.
2. Bending  $\leq$  Length\*1%.

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■ All Light On Segments Feature & Pin Position

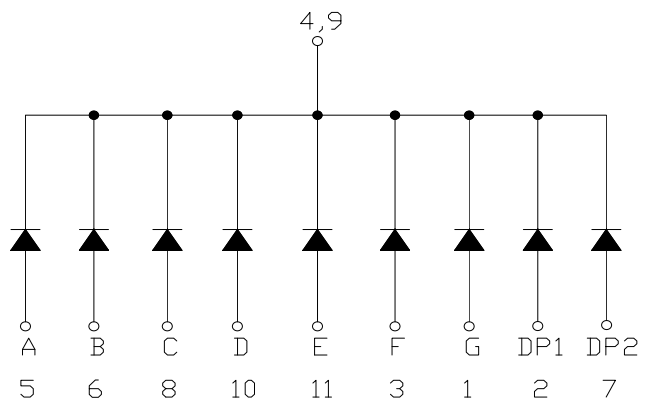


■ Internal Circuit Diagrams -



NO.12 NO CONNECT

CSOS-S28122 is Common Anode



NO.12 NO CONNECT

CSOS-S28123 is Common Cathode

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■ Absolute Maximum Rating -

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	PAD	114	mW
Derating Liner from 25°C per Dice	-	0.4	mA/°C
Continuous Forward Current Per Dice	IAF	30	mA
Peak Current Per Dice(duty cycle 1/10,1KHz)	IPF	100	mA
Reverse Voltage Per Dice	VR	5	V
Electrostatic discharge(HBM)	ESD	1000	V
Operating Temp.	Topr	-40 ~ +105	°C
Storage Temp.	Tstg	-40 ~ +105	°C

Solder Conditions: 1/16 inch below seating plane for 3 -5 seconds at 260°C.

■ Electro-optical Characteristics -

(Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Segment	V <sub>F</sub>	-	3.2	3.8	V	I <sub>F</sub> =20mA
Luminous Intensity Per Segment	I <sub>v</sub>	4.2	7	-	mcd	I <sub>F</sub> =10mA
Dominant Wavelength	λ <sub>d</sub>	-	470	-	nm	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	-	-	50	μA	VR=5V
Luminous Intensity Matching Ratio	I <sub>v-m</sub>	-	-	2:1	-	I <sub>F</sub> =10mA

Notes:The device can not operated under continuous reverse voltage.

■ Typical Electrical / Optical Characteristics Curves -

(Ta = 25°C Unless Otherwise Noted)

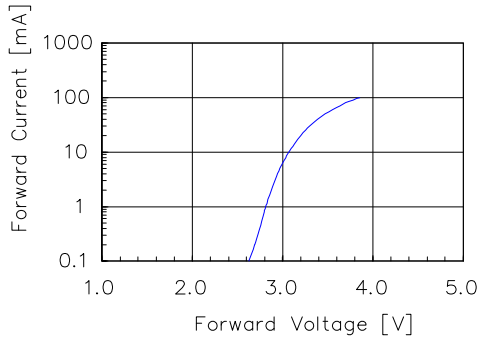


Fig 1. Forward Current vs. Forward Voltage

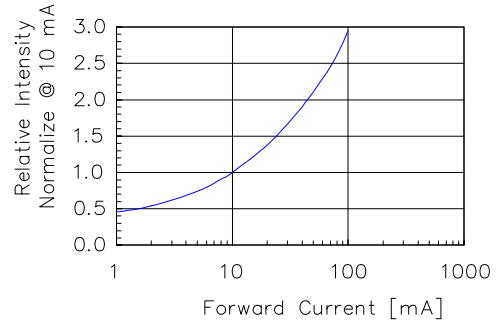


Fig 2. Relative Intensity vs. Forward Current

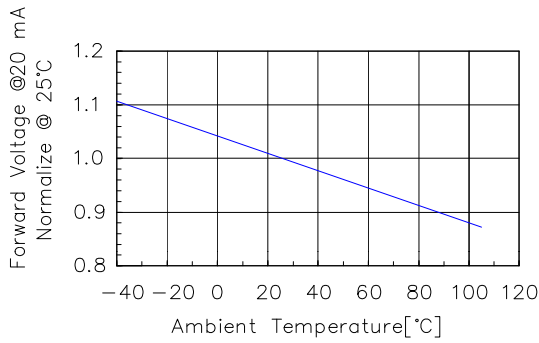


Fig 3. Forward Voltage vs. Temperature

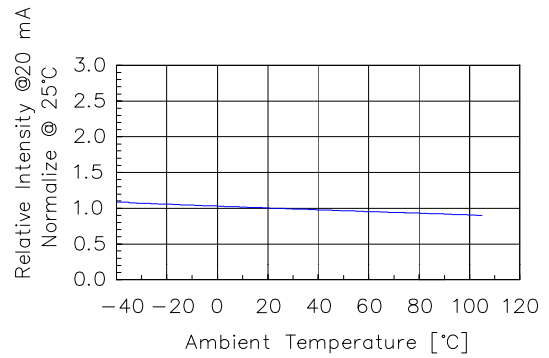


Fig 4. Relative Intensity vs. Temperature

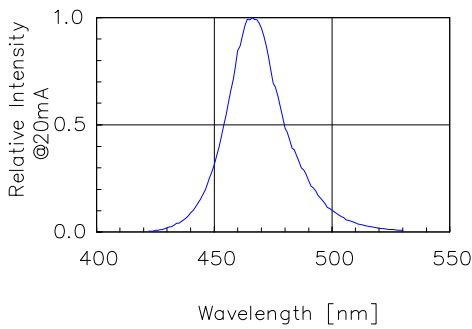
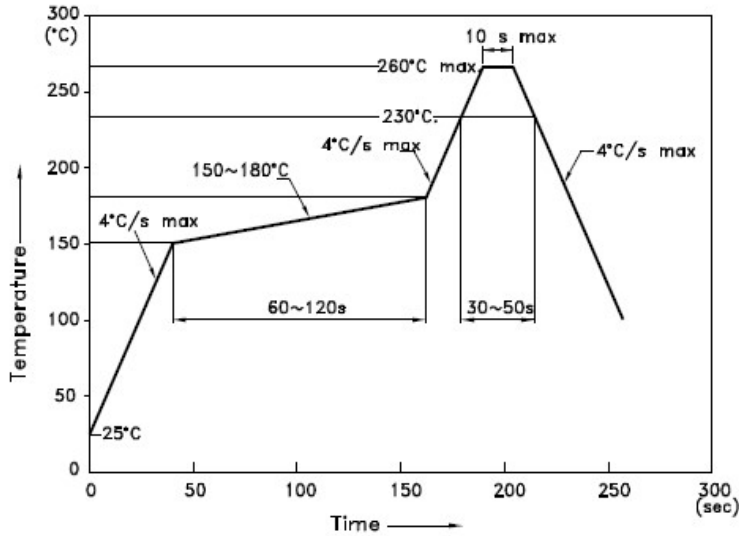


Fig 5. Relative Intensity vs. Wavelength

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## SMT REFLOW SOLDERING INSTRUCTIONS

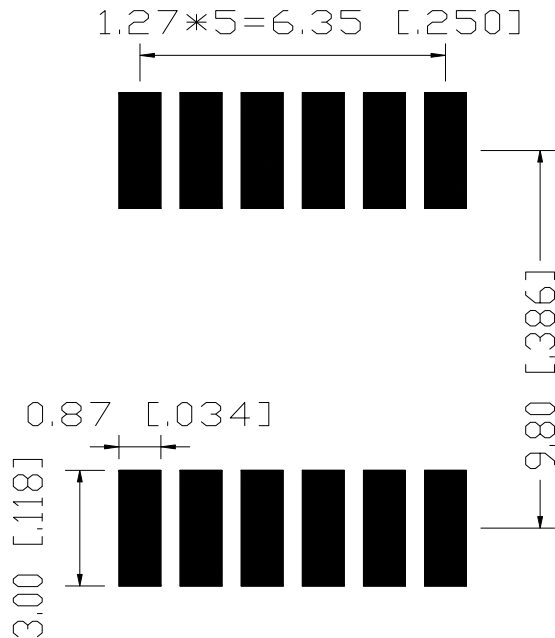
### ■ IR Reflow Temperature / Time :



#### NOTES:

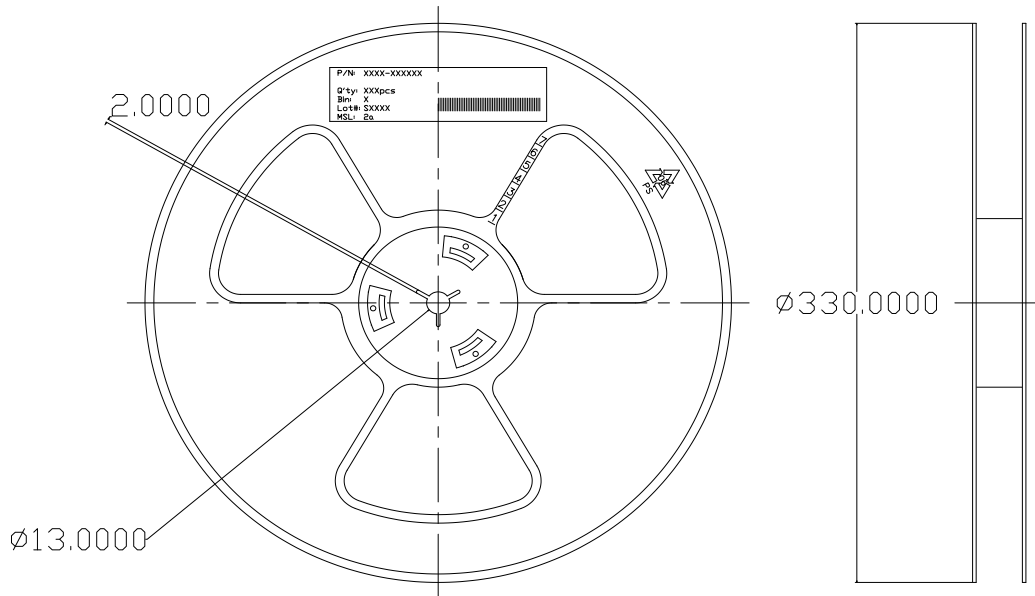
1. We recommend the reflow temperature 245°C (+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■ Soldering Pad Size

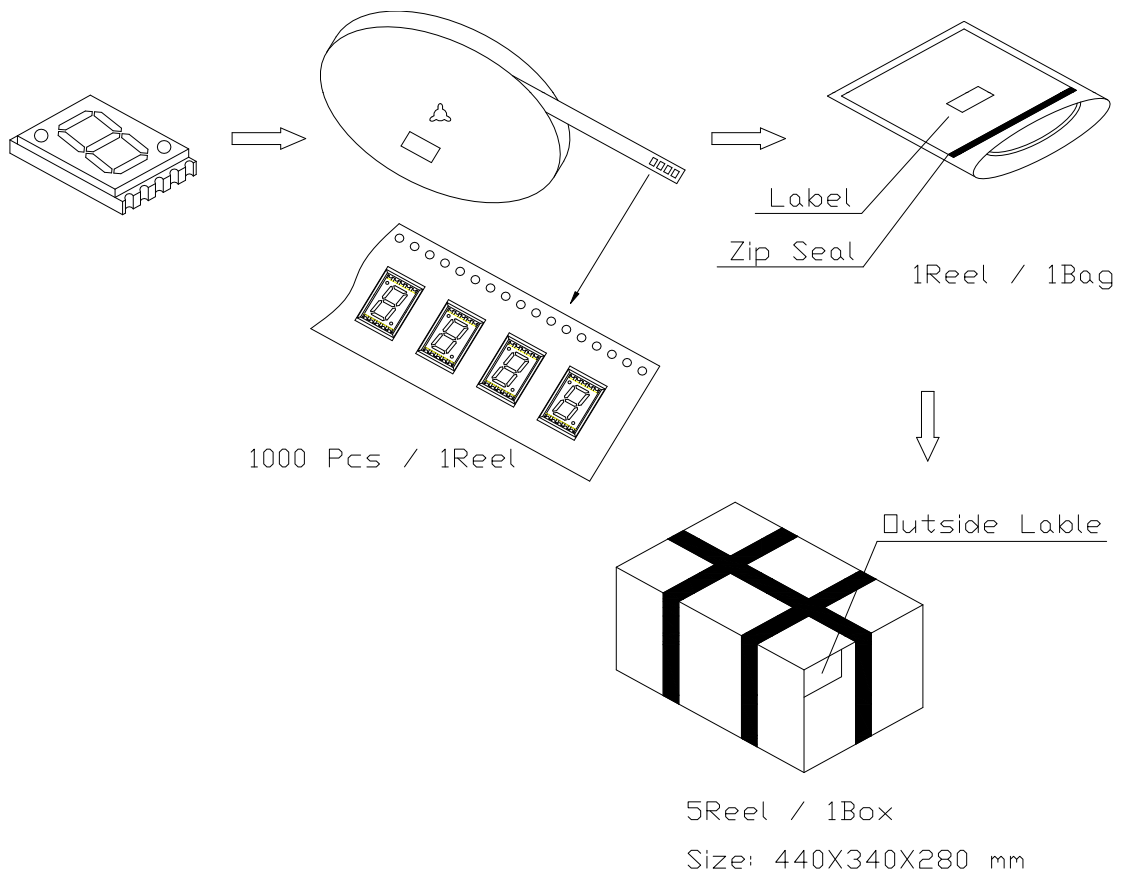


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REEL DIMENSIONS



PACKING & LABEL SPECIFICATIONS



Note: The specifications are subject to change without notice. Please contact us for updated information.