



<b>Spec. No.</b>	PS-ND-0712
<b>Rev.</b>	A

# PRODUCT SPECIFICATION

**Model No : CSS-2310A9/CSS-2311A9**

### Descriptions:

- 2.3 Inch Single Digit Alphanumeric Display
- Emitting Color: Super-Bright Amber



CUSTOMER APPROVED	APPROVED BY	CHECKED BY	PREPARED BY
SIGNATURES			

**CHINA SEMICONDUCTOR CORPORATION**  
Address:2FL. NO.909,Chung-Cheng Road,  
Chung-Ho City Taipei Hsien,Taiwan.

Tel:886-2-2223-9696  
Fax:886-2-2223-9377

**OPTO PLUS TECHNOLOGIES CO.,LTD**  
Address:696 Shun jiang Rd.,Ji Shan St.Shaoxing,  
ZheJiang,China

Tel:86-0575-8623888  
Fax:86-0575-8623112



<b>Spec. No.</b>	PS-ND-0712
<b>Rev.</b>	A

**Model No : CSS-2310A9/2311A9**

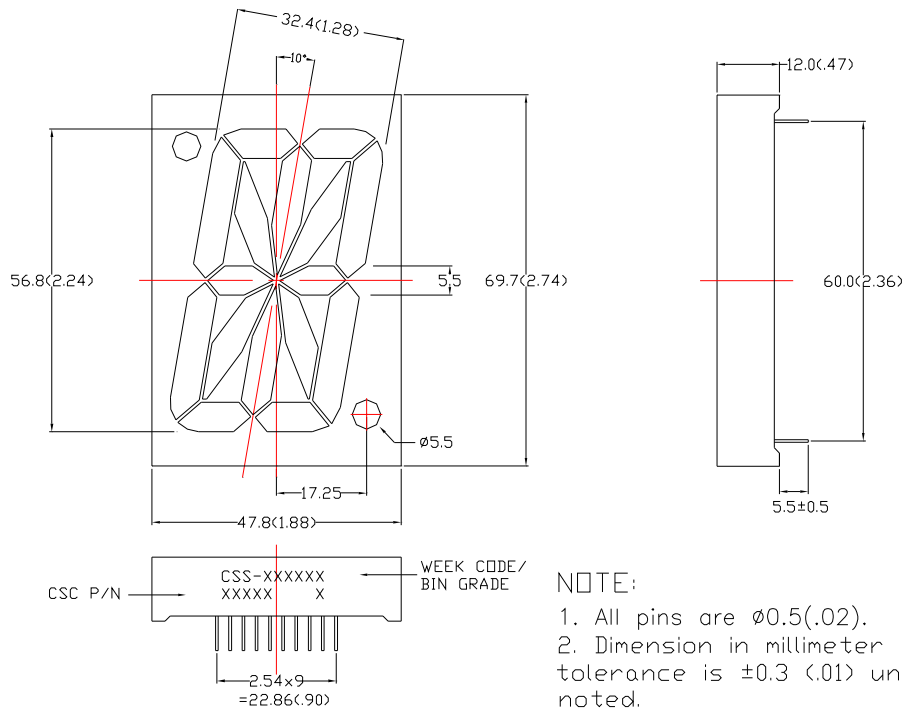
**Features -**

1. 2.24 inch (56.8 mm) digit height.
2. Case mold type.
3. RoHs compliant.
4. Low power consumption.
5. Easy mounting on P.C. board or socket.

**Device Selection Guide -**

Part No.	Chip		Description
	Material	Emitted Color	
CSS-2310A9	AlGaInP	Super-Bright Amber	Common Anode
CSS-2311A9			Common Cathode

**Package Dimensions -**



**NOTE:**

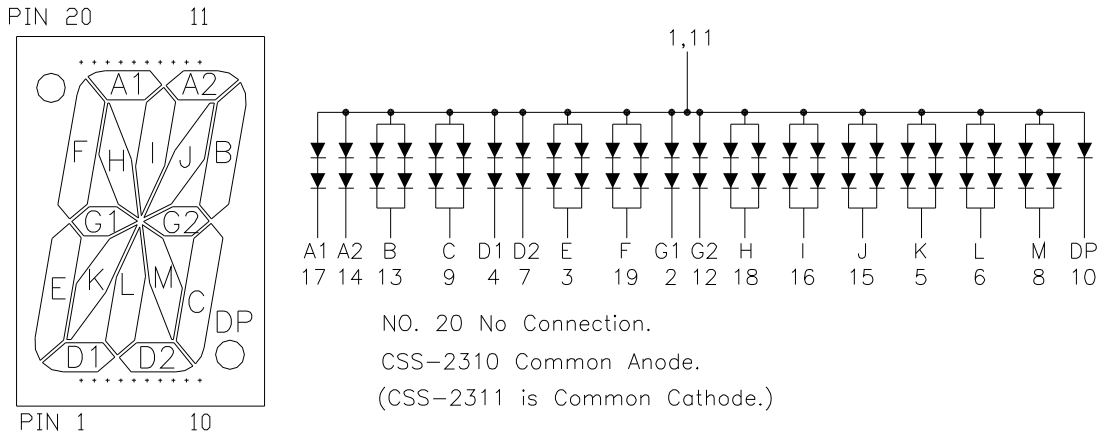
1. All pins are  $\phi 0.5$  (.02).
2. Dimension in millimeter (inch), and tolerance is  $\pm 0.3$  (.01) unless otherwise noted.



Spec. No.	PS-ND-0712
Rev.	A

**Model No : CSS-2310A9/2311A9**

**Internal Circuit Diagrams -**



**Absolute Maximum Rating -**

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	Pd	65	mW
Continuous Forward Current Per Dice	IAF	25	mA
Peak Current Per Dice (duty cycle 1/10, 1kHz)	IPF	90	mA
Derating Linear From 25°C Per Dice	-	0.33	mA/°C
Reverse Voltage Per Dice	VR	5	V
Operating Temperature	Topr	-25 ~ +85	°C
Storage Temperature	Tstg	-25 ~ +85	°C
Solder temperature 1/16 inch below seating plane for 3 seconds at 260 °C			



**Model No : CSS-2310A9/2311A9**

**Electro-optical Characteristics -**

(Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Segment (DP)	VF	-	4.0(2.0)	5.2(2.6)	V	IF=20mA
Luminous Intensity Per Segment	Iv	-	40	-	mcd	IF=10mA
Peak Emission Wavelength	$\lambda_p$	-	612	-	nm	IF=20mA
Spectrum Radiation Bandwidth	$\Delta \lambda$	-	20	-	nm	IF=20mA
Reverse Current	IR	-	-	100	$\mu A$	VR=10V
Luminous Intensity Matching Ratio	IV-m	-	-	2 : 1	-	IF=20mA



Spec. No.	PS-ND-0712
Rev.	A

**Model No : CSS-2310A9/2311A9**

**Typical Electrical / Optical Characteristics Curves -**

**(Ta = 25°C Unless Otherwise Noted)**

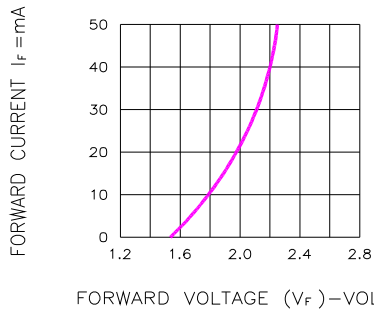


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

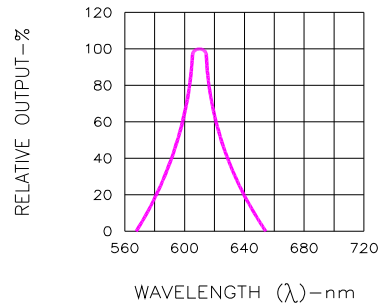


Fig.2 SPECTRAL RESPONSE

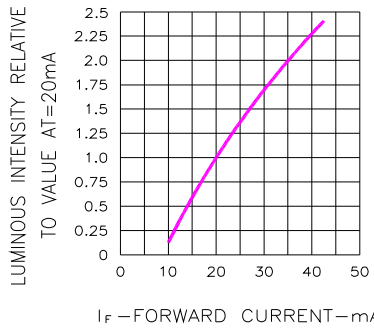


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

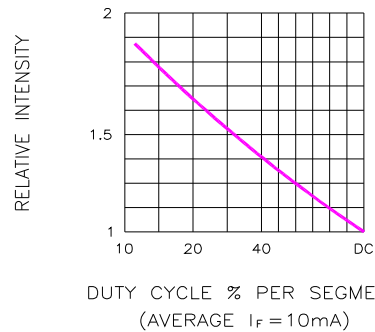


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

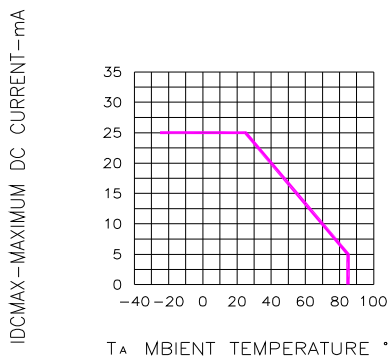


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

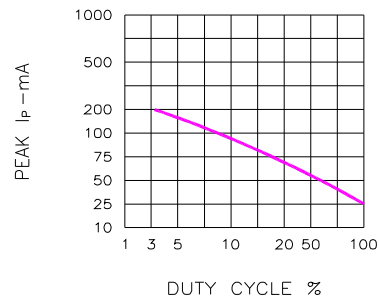


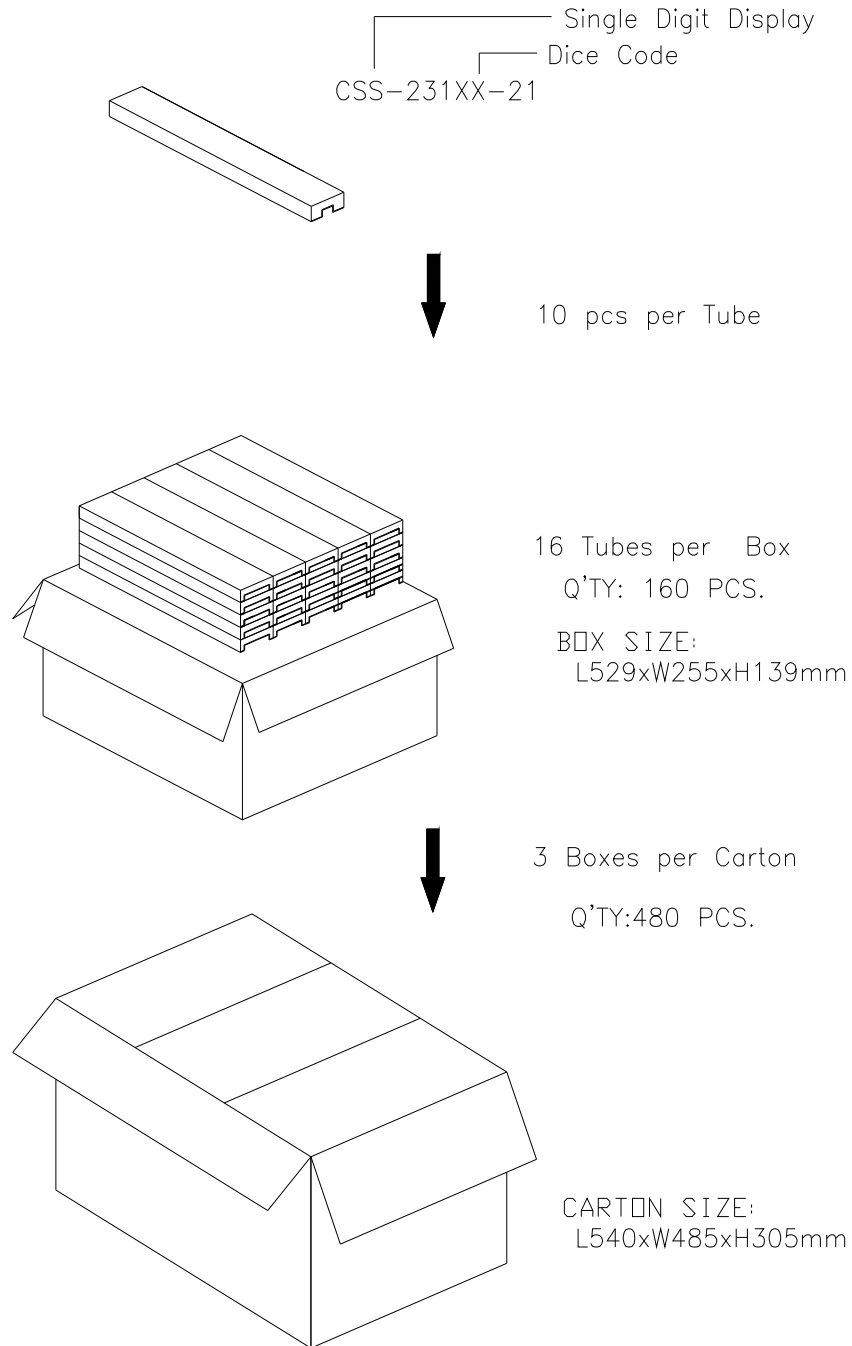
Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)



Spec. No.	0
Rev.	A

**Model No : CSS-2310A9/2311A9**

**Package Dimensions**



Note: The specifications may be changed without prior notice. Please contact us for the latest specifications.