

● FEATURES

- 0.40 inch (10.16 mm) Digit Height.
- SMD type.
- Low current operation.
- Gray face, White segment.
- RoHS compliant, Pb Free.

● DESCRIPTION

The YSS-4010SB-D-GW & YSS-4011SB-D-GW are 0.40 inch (10.16 mm) height Single digit 7-segment displays.

This device utilizes Super Bright Blue LED chip which are made from InGaN on a Transparent GaN substrate.

The display has Gray face, White segment.

● DEVICE

PART NO	DESCRIPTION
YSS-4010SB-D-GW	Common Anode
YSS-4011SB-D-GW	Common Cathode

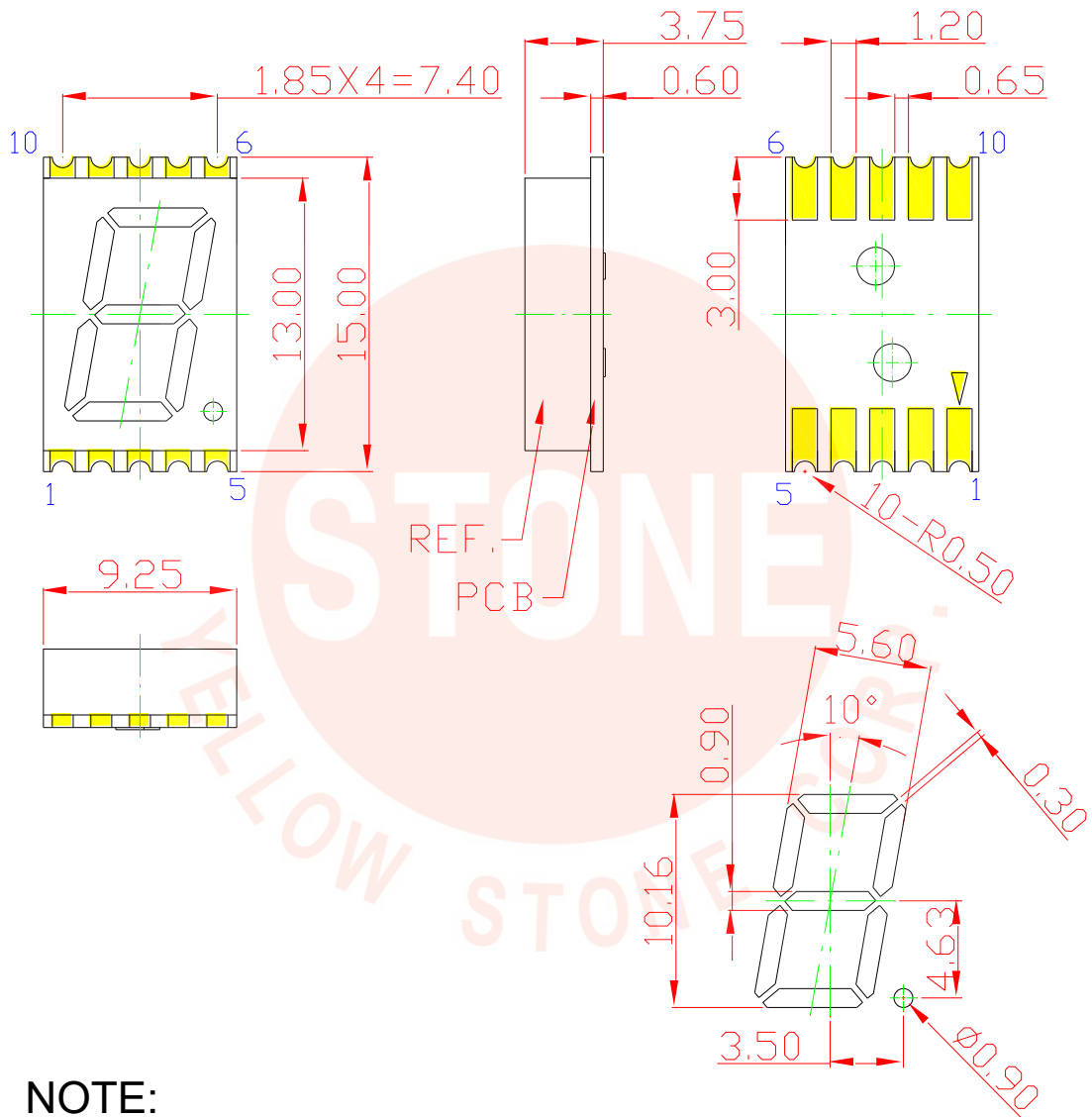
RoHS Compliance



Pb free.

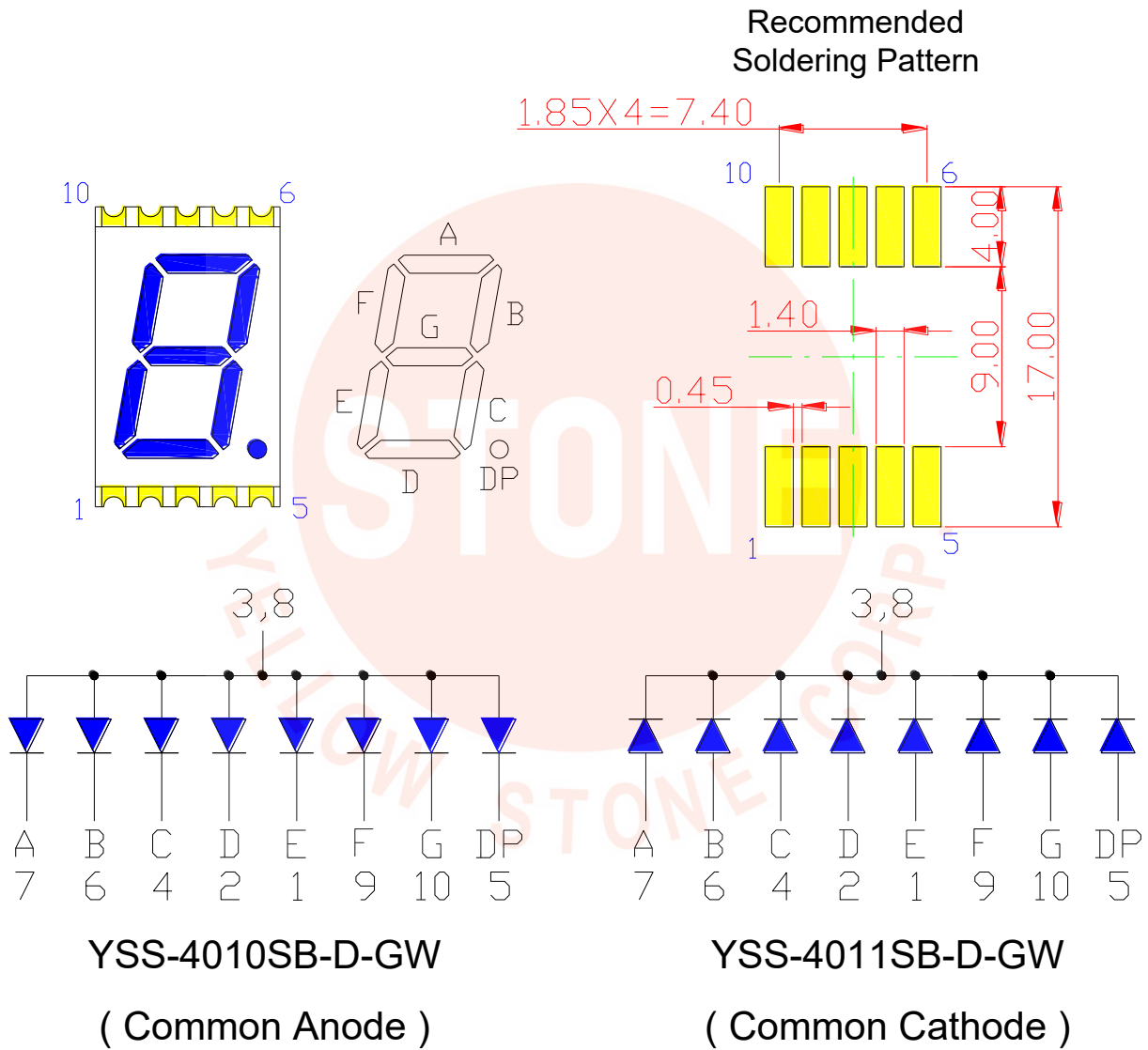


● **MECHANICAL DIMENSIONS**



NOTE:
 Dimension in millimeters (inches),
 And tolerances are $\pm 0.25\text{mm}$ (.01") specified.

● **TYPICAL INTERNAL EQUIVALENT CIRCUIT**



● **SB: SUPER BRIGHT BLUE (InGaN/GaN)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	P _{AD}	120	mW
Derating liner from 25°C	-	0.3	mA / °C
Continuous forward current	I _{AF}	30	mA
Peak current (duty cycle 1/10, 1kHz)	I _{PF}	100	mA
Reverse voltage	V _R	5	V
Operating temperature	T _{OPR}	-40 to +105	°C
Storage temperature	T _{STG}	-40 to +105	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward Voltage, (Per Dice)	V _F	I _F =20mA	-	3.1	4.0	V
Reverse Current, (Per Dice)	I _R	V _R =5V	-	-	10	μA
Dominant Wavelength	λ _D	I _F =20mA	466	-	474	nm
Luminous Intensity	I _v	I _F =10mA	7	-	30	mcd
Spectral radiation bandwidth	Δλ	I _F =20mA	-	30	-	nm

● SB: BIN GRADE (Unit : mcd) 10mA

Super Bright Blue	J	K	L
	7.0 – 15.0	15.1 – 22.0	22.1 – 30.0

● SB: HUE GRADE (λ_D : nm)

Super Bright Blue	1	2
	466.0 - 470.0	470.1 - 474.0

● AVAILABLE BIN / HUE TABLE

J1	J2
K1	K2
L1	L2

● **SB: SUPER BRIGHT BLUE (InGaN/GaN) CURVE**

Typical Electro-optical Characteristic Curves
 (25 °C Free Air Temperature Unless Otherwise Specified)

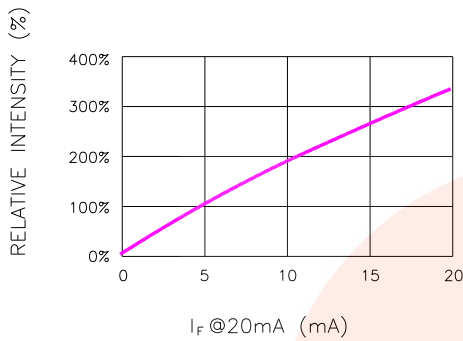


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

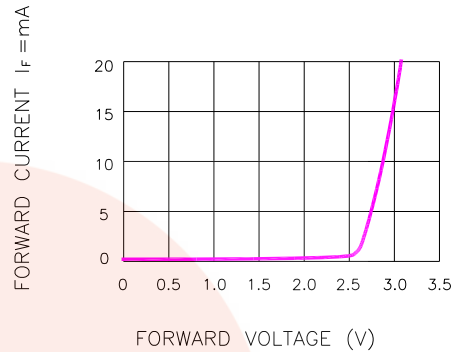


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

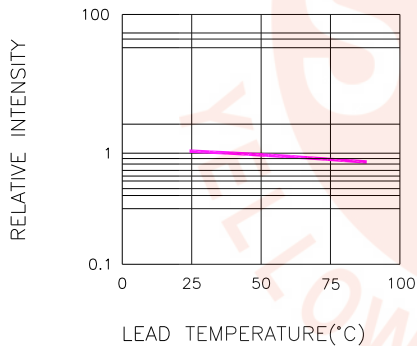


Fig.3 RELATIVE INTENSITY VS. LEAD TEMPERATURE
 (PULSED 20 mA; 300us PULSE, 10ms PERIOD)

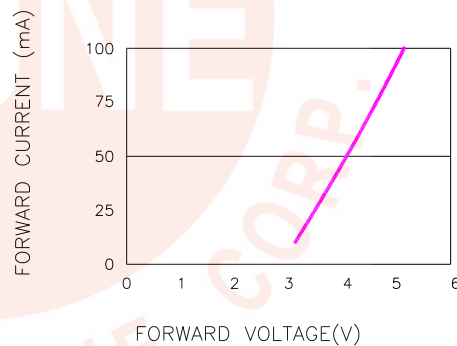


Fig.4 PEAK FORWARD VOLTAGE VS. FORWARD (100us TEST PULSE, 1% DUTY CYCLE)

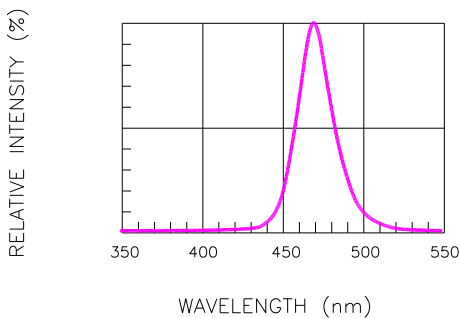


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

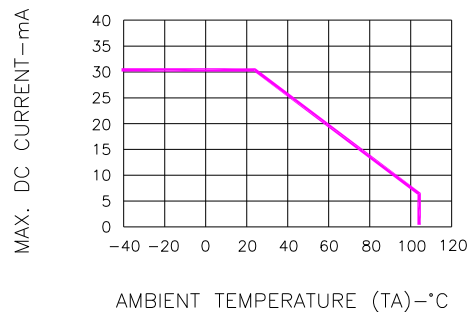
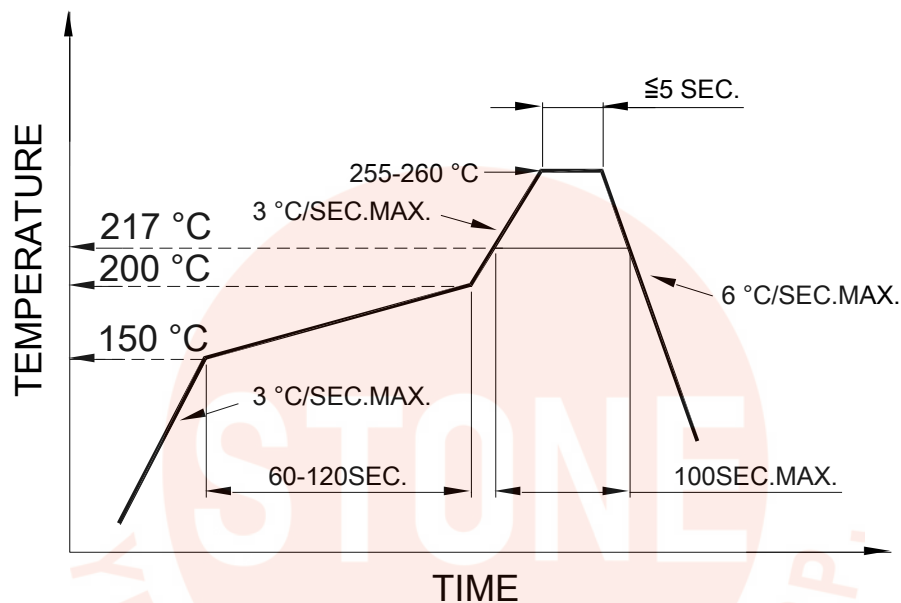


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

● SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



- We recommend the reflow temperature 245°C (+/- 5°C).
The maximum soldering temperature should be limited to 260°C.
- Number of reflow process shall be 2 times or less.

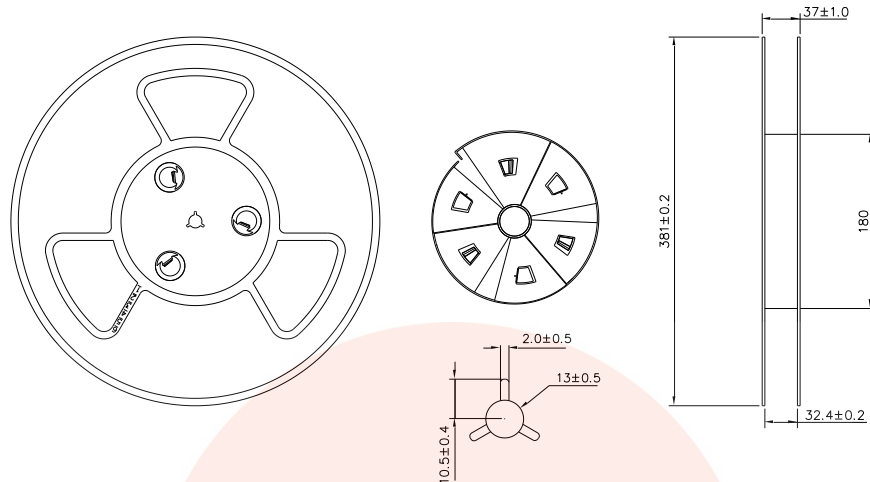
● SOLDERING IRON

Basic spec is ≤ 4 sec when 260°C. If temperature is higher, time should be shorter (+10°C → 1 sec). Power dissipation of Iron should be smaller than 15W, and temperature should be controllable. Surface temperature of the device should be under 230°C.

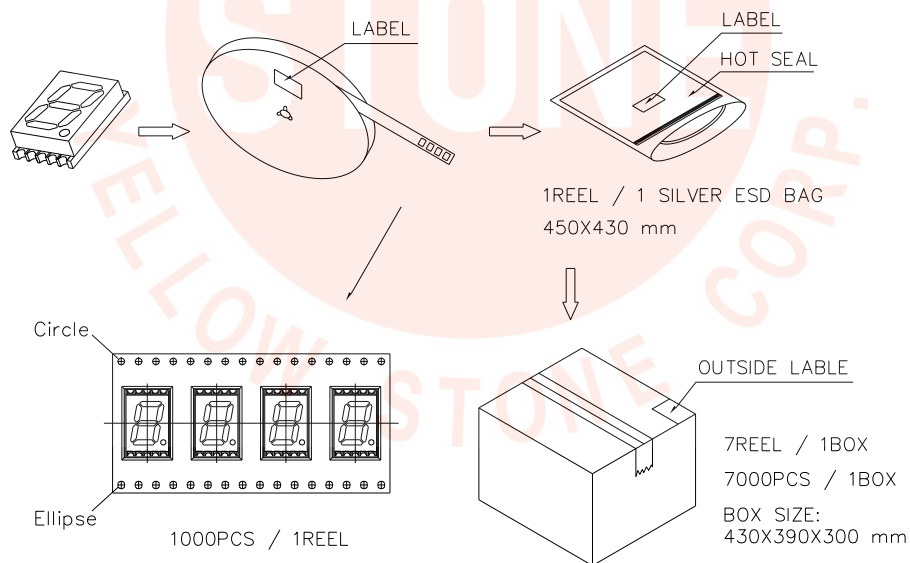
● REWORK

- Customer must finish rework within 3 sec. under 350°C.
- The head of soldering iron cannot touch copper foil.

● REEL DIMENSIONS



● PACKING & LABEL SPECIFICATIONS



● STORAGE CONDITION

In factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION
5°C ~ 30°C	Below 60%RH

After opened and not in factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION	STORAGE TIME
5°C ~ 30°C	Below 60%RH	Within 4 weeks (MSL as level 2a)