● **EDIT HISTORY**

Version A: Mar. 24, 2025

Preliminary Spec.

Confidential Document

Opto Plus LED Corp.   7F-3, No.496 , Bannan Road, Jhonghe Dist., New Taipei City 235, Taiwan (R.O.C)
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FM-RD-006A

● FEATURES

- 0.70 inch (17.78 mm) digit height.
- Super thin SMD type.
- Low current operation.
- RoHS Compliant, Pb Free.

● DESCRIPTION

The device are 0.70 inch (17.78 mm) height triple digit 7-segment displays.

The device is Opto Plus LED Corp standard LED Display.

This device utilizes Super Bright White LED chip which are made from InGaN

On a transparent GaN, substrate.

The device has face and segment option, please refer to **PRODUCT APPEARANCE**.

● DEVICE

PART NO.	DESCRIPTION
OPS-T7010W-STT-1.5-GW	Common Anode ｜ Gray face ｜ White segment ｜ Top mount
OPS-T7011W-STT-1.5-GW	Common Cathode ｜ Gray face ｜ White segment ｜ Top mount
OPS-T7010W-STT-1.5-BW	Common Anode ｜ Black face ｜ White segment ｜ Top mount
OPS-T7011W-STT-1.5-BW	Common Cathode ｜ Black face ｜ White segment ｜ Top mount
OPS-T7010W-STR-1.5-GW	Common Anode ｜ Gray face ｜ White segment ｜ Reverse mount
OPS-T7011W-STR-1.5-GW	Common Cathode ｜ Gray face ｜ White segment ｜ Reverse mount
OPS-T7010W-STR-1.5-BW	Common Anode ｜ Black face ｜ White segment ｜ Reverse mount
OPS-T7011W-STR-1.5-BW	Common Cathode ｜ Black face ｜ White segment ｜ Reverse mount

RoHS Compliance

RoHS

Pb Free.

Pb Lead-free 無 鉛

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● MECHANICAL DIMENSIONS

NOTES: All dimensions are in millimeters. Tolerances are± 0.25 mm unless otherwise noted.

● **TYPICAL INTERNAL EQUIVALENT CIRCUIT**

Turn On Color

DIG.1 DIG.2 DIG.3

DIG.1-DIG.3

Recommended Top Mount Soldering Pattern

Recommended Reverse Mount Soldering Pattern

Reflector (Mounting Hole)

OPS-T7010W-STT(R)-1.5-G(B)W
(Common Anode)

OPS-T7011W-STT(R)-1.5-G(B)W
(Common Cathode)
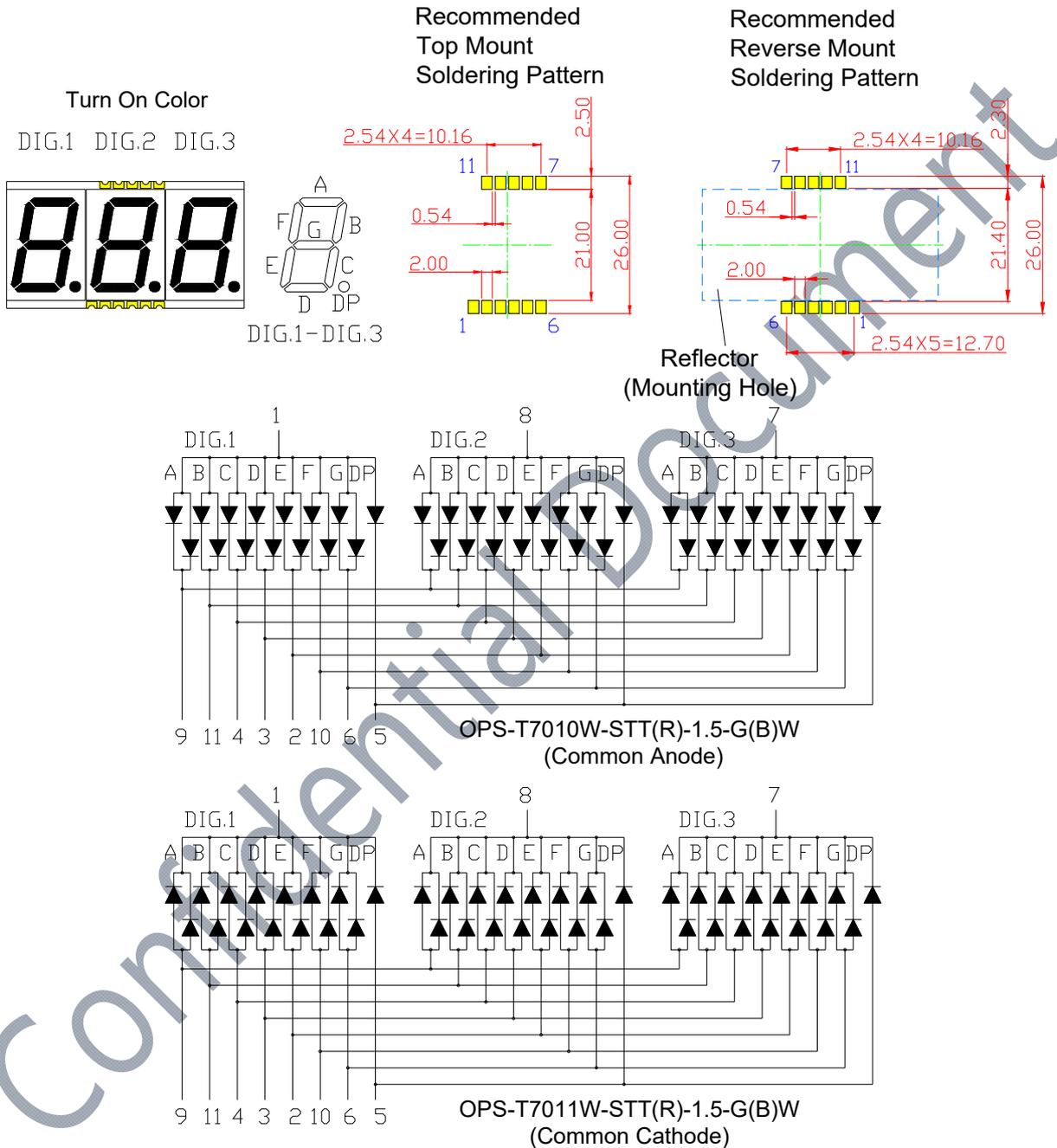
※**EMITTED COLOR：SUPER BRIGHT WHITE**

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● **PRODUCT APPEARANCE**

The most common reflector color and segment color are show in below diagram.
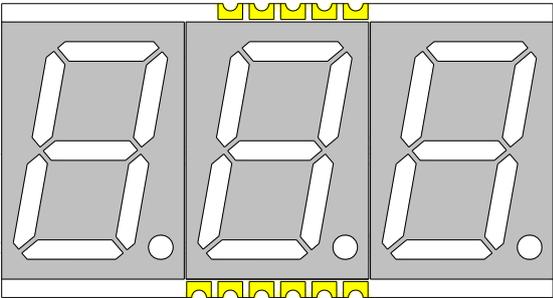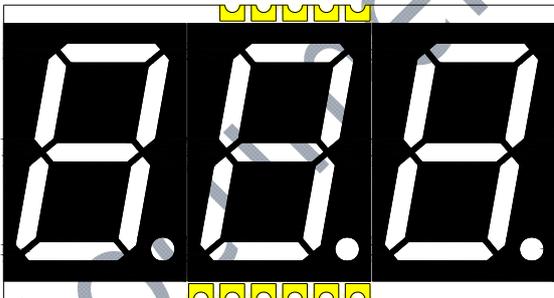
-GW	-BW
※ REFLECTOR COLOR: Gray ※ SEGMENT COLOR: White	※ REFLECTOR COLOR: Black ※ SEGMENT COLOR: White

Opto Plus can customize reflector and segment colors by customer's request. If you have these request please visit www.opledtw.com or contact sales@opledtw.com for more **Standard Product Customization** information.

Part NO. related to reflector and segment colors show as table below.

PART NO.	DESCRIPTION
OPS-T7010W-STT-1.5-GW	Common Anode │ Gray face │ White segment │ Top mount
OPS-T7011W-STT-1.5-GW	Common Cathode │ Gray face │ White segment │ Top mount
OPS-T7010W-STT-1.5-BW	Common Anode │ Black face │ White segment │ Top mount
OPS-T7011W-STT-1.5-BW	Common Cathode │ Black face │ White segment │ Top mount
OPS-T7010W-STR-1.5-GW	Common Anode │ Gray face │ White segment │ Reverse mount
OPS-T7011W-STR-1.5-GW	Common Cathode │ Gray face │ White segment │ Reverse mount
OPS-T7010W-STR-1.5-BW	Common Anode │ Black face │ White segment │ Reverse mount
OPS-T7011W-STR-1.5-BW	Common Cathode │ Black face │ White segment │ Reverse mount

● **W: SUPER BRIGHT WHITE (InGaN/GaN)**

ABSOLUTE MAXIMUM RATING AT Ta=25º (Per SMD Chip)

Parameter	Symbol	Maximum Rating	Unit
Power Dissipation	P_D	33	mW
Forward Current	I_F	10	mA
Pulse Forward Current	I_{FP}	60	mA
Operating temperature	T_{OP}	-40 to + 85	°C
Storage temperature	T_{ST}	-40 to + 100	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25ºC (Per SMD Chip)

Characteristic	Symbol	Condition	Min.	Type	Max.	Unit
Forward Voltage	V_F	I_F =5mA	-	2.9	3.2	V
Reverse Current	I_R	V_R =5V	-	-	10	µA
Luminous Intensity	I_V	I_F =5mA	112.5	200	285	mcd
Chromaticity Coordinate		X	-	0.285	-	
		Y	-	0.275		

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● LUMINOUS INTENSITY (IV) BIN:

Super Bright White	1	2	3
Reference BIN (Chip)	(R11) 112.5-126.0	(R12) 126.0-140.0	(R21) 140.0-160.0

Super Bright White	4	5	6
Reference BIN (Chip)	(R22) 160.0-180.0	(S11) 180.0-202.0	(S12) 202.0-226.0

Super Bright White	7	8
Reference BIN (Chip)	(S21) 226.0-255.5	(S22) 255.5-285.0

Note: It maintains a tolerance of ±10% on Luminous Intensity.
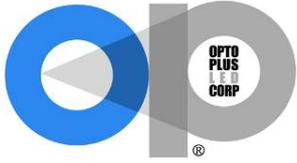
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● COLOR BIN:

Color	AA2		BB1		BB2	
	0.2700	0.2400	0.2800	0.2500	0.2900	0.2600
	0.2700	0.2500	0.2800	0.2600	0.2900	0.2700
	0.2800	0.2600	0.2900	0.2700	0.3000	0.2800
	0.2800	0.2500	0.2900	0.2600	0.3000	0.2700
	CC2		**DD1**		**DD2**	
	0.2700	0.2500	0.2800	0.2600	0.2900	0.2700
	0.2700	0.2600	0.2800	0.2700	0.2900	0.2800
	0.2800	0.2700	0.2900	0.2800	0.3000	0.2900
	0.2800	0.2600	0.2900	0.2700	0.3000	0.2800
TW	**EE2**		**FF1**		**FF2**	
	0.2700	0.2600	0.2800	0.2700	0.2900	0.2800
	0.2700	0.2700	0.2800	0.2800	0.2900	0.2900
	0.2800	0.2800	0.2900	0.2900	0.3000	0.3000
	0.2800	0.2700	0.2900	0.2800	0.3000	0.2900
	GG2		**HH1**		**HH2**	
	0.2700	0.2700	0.2800	0.2800	0.2900	0.2900
	0.2700	0.2800	0.2800	0.2900	0.2900	0.3000
	0.2800	0.2900	0.2900	0.3000	0.3000	0.3100
	0.2800	0.2800	0.2900	0.2900	0.3000	0.3000

Note: It maintains a tolerance of X,Y ±0.007.
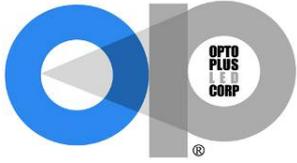
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● **AVAILABLE BIN / HUE TABLE**

1AA2	1BB1	1BB2	1CC2	1DD1	1DD2
1EE2	1FF1	1FF2	1GG2	1HH1	1HH2
2AA2	2BB1	2BB2	2CC2	2DD1	2DD2
2EE2	2FF1	2FF2	2GG2	2HH1	2HH2
3AA2	3BB1	3BB2	3CC2	3DD1	3DD2
3EE2	3FF1	3FF2	3GG2	3HH1	3HH2
4AA2	4BB1	4BB2	4CC2	4DD1	4DD2
4EE2	4FF1	4FF2	4GG2	4HH1	4HH2
5AA2	5BB1	5BB2	5CC2	5DD1	5DD2
5EE2	5FF1	5FF2	5GG2	5HH1	5HH2
6AA2	6BB1	6BB2	6CC2	6DD1	6DD2
6EE2	6FF1	6FF2	6GG2	6HH1	6HH2
7AA2	7BB1	7BB2	7CC2	7DD1	7DD2
7EE2	7FF1	7FF2	7GG2	7HH1	7HH2
8AA2	8BB1	8BB2	8CC2	8DD1	8DD2
8EE2	8FF1	8FF2	8GG2	8HH1	8HH2

● **CHROMATICITY COORDINATE:**
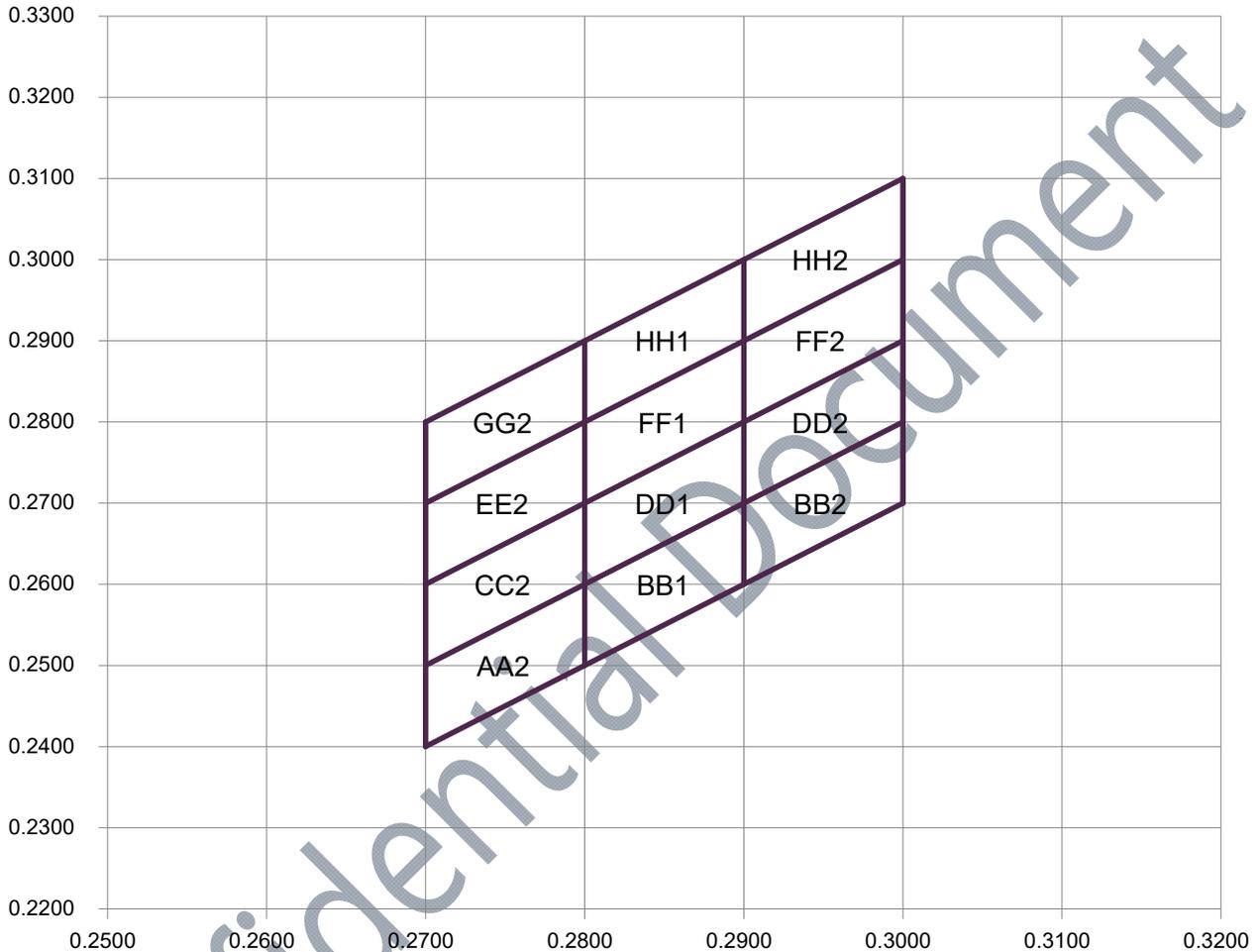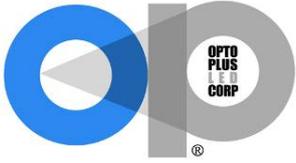
● W: SUPER BRIGHT WHITE (InGaN/GaN) CURVE

Typical Electro-optical Characteristic Curves
(25 ℃ Free Air Temperature Unless Otherwise Specified)
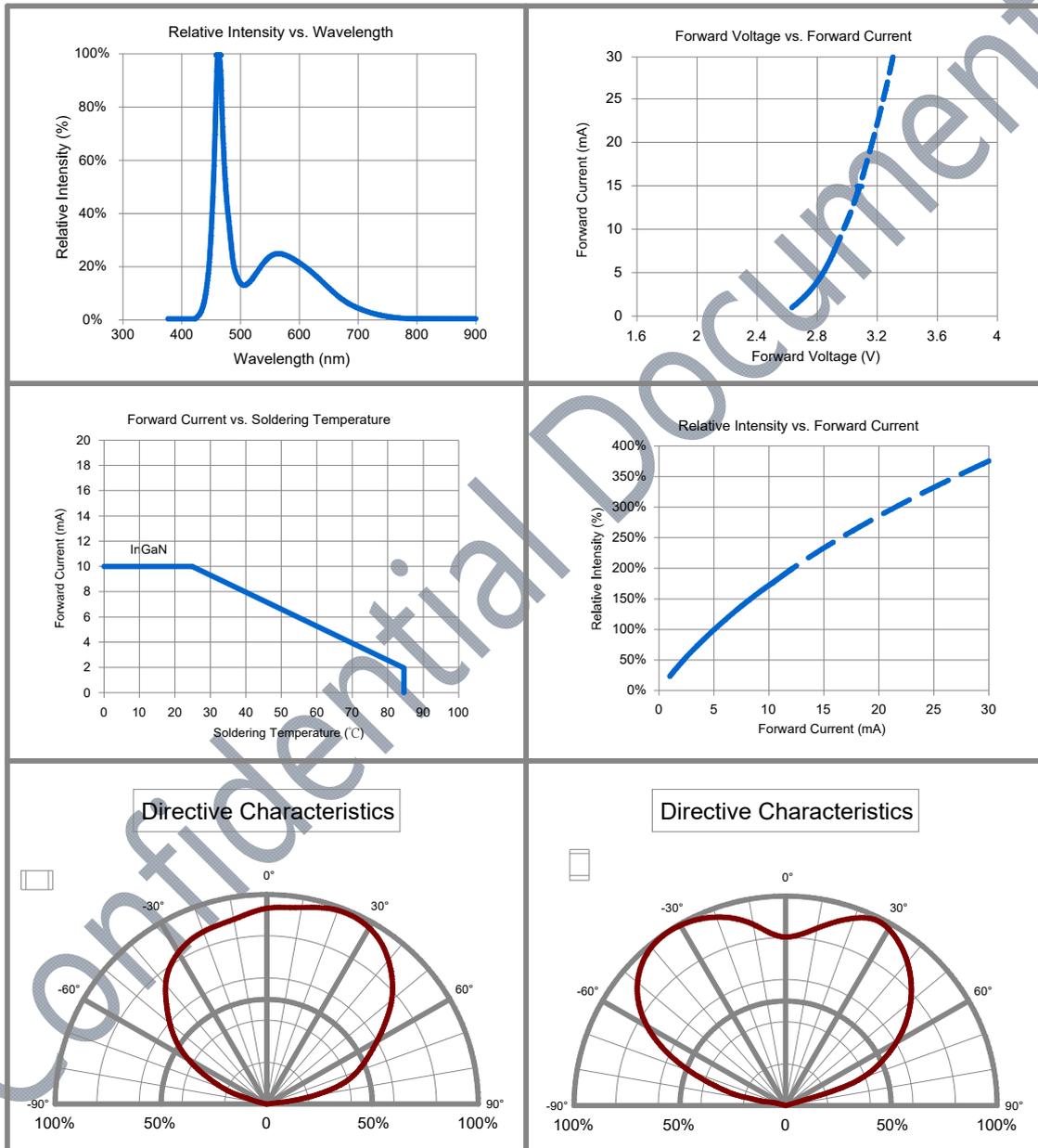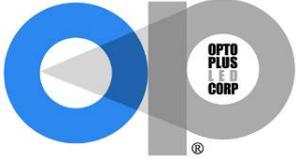
Relative Intensity vs. Wavelength

Forward Voltage vs. Forward Current

Forward Current vs. Soldering Temperature

Relative Intensity vs. Forward Current

Directive Characteristics

Directive Characteristics

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● SMT REFLOW SOLDERING INSTRUCTIONS

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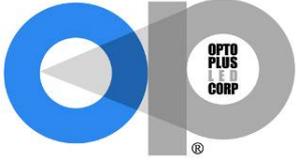
Pb free reflow soldering Profile
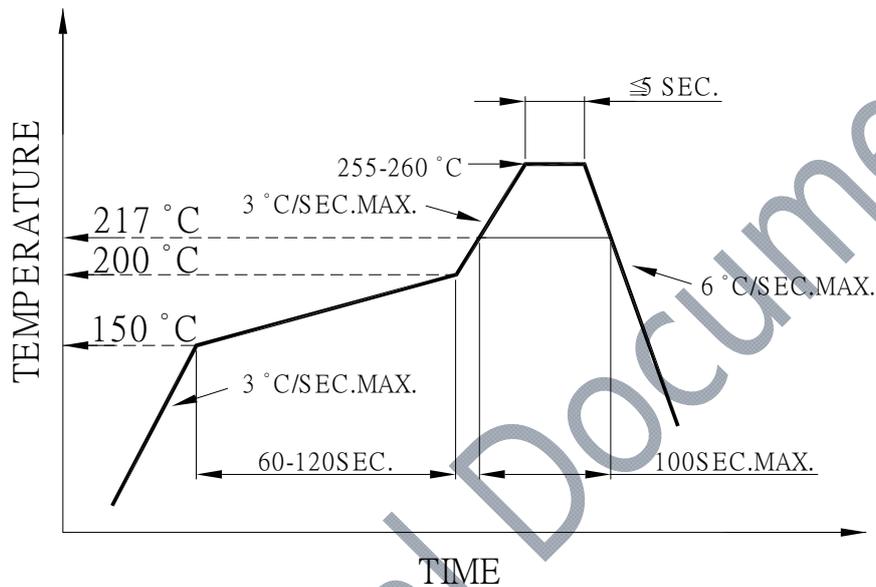
- ● We recommend the reflow temperature 245°C (+/- 5°C).
   The maximum soldering temperature should be limited to 260°C.
- ● Number of reflow process shall be 2 times or less.

● 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℃.
- ● The head of soldering iron cannot touch copper foil.

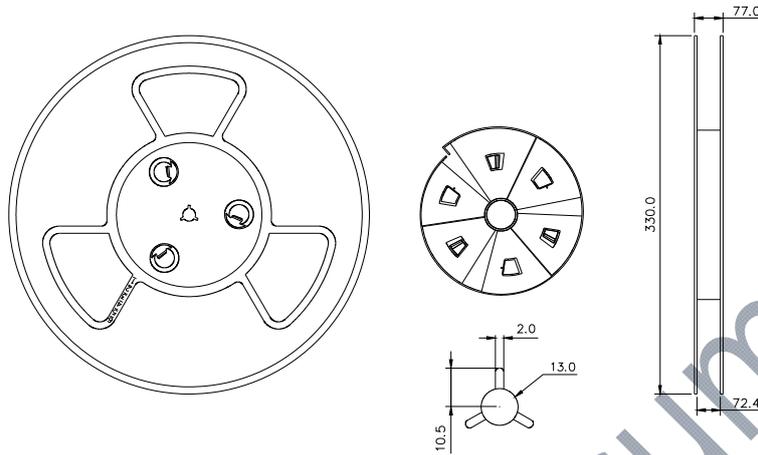Opto Plus LED Corp.   7F-3, No.496 , Bannan Road, Jhonghe Dist., New Taipei City 235, Taiwan (R.O.C)   Disclaimer:
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● **REEL DIMENSIONS**

77.0

330.0

2.0

13.0

10.5

72.4

● **PACKING & LABEL SPECIFICATIONS**

OPS-T7010(1)XX-STT-1.5-BW Top Mount	OPS-T7010(1)XX-STR-1.5-BW Reverse Mount	OPS-T7010(1)XX-STT-1.5-BW OPS-T7010(1)XX-STR-1.5-BW

LABEL

LABEL

LABEL
HOT SEAL

1REEL / 1 SILVER ESD BAG
450X430 mm

OUTSIDE LABLE

3REEL / 1BOX
1830PCS / 1BOX
BOX SIZE:
430X390X300 mm

Circle

Ellipse   610PCS / 1REEL

Circle

Ellipse   610PCS / 1REEL

● **STORAGED CONDITION**

In factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION
5℃ ~ 30℃	Below 60%RH

After opened and not in factory original sealed bag package

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

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