American Opto Plus LED Corp.
0.17” SMD Type LED Display
SMA-V1008LEYGLY-GW

FEATURES

- 0.17 inch (4.40 mm) Digit Height.
- Semi-Epoxy type.
- Low current operation.
- Gray face, White segment.
- RoHS compliant, Pb Free.
- MSL Level: 2a in ESD bag package.

DESCRIPTION

This is a 0.17 inch (4.40 mm) height

Triple digit with icon for custom display.

This device utilizes Super Bright Red LED, Super Bright Yellow Green LED & Super Bright Yellow LED chip which are made from AlGaInP on a transparent GaAs, substrate.

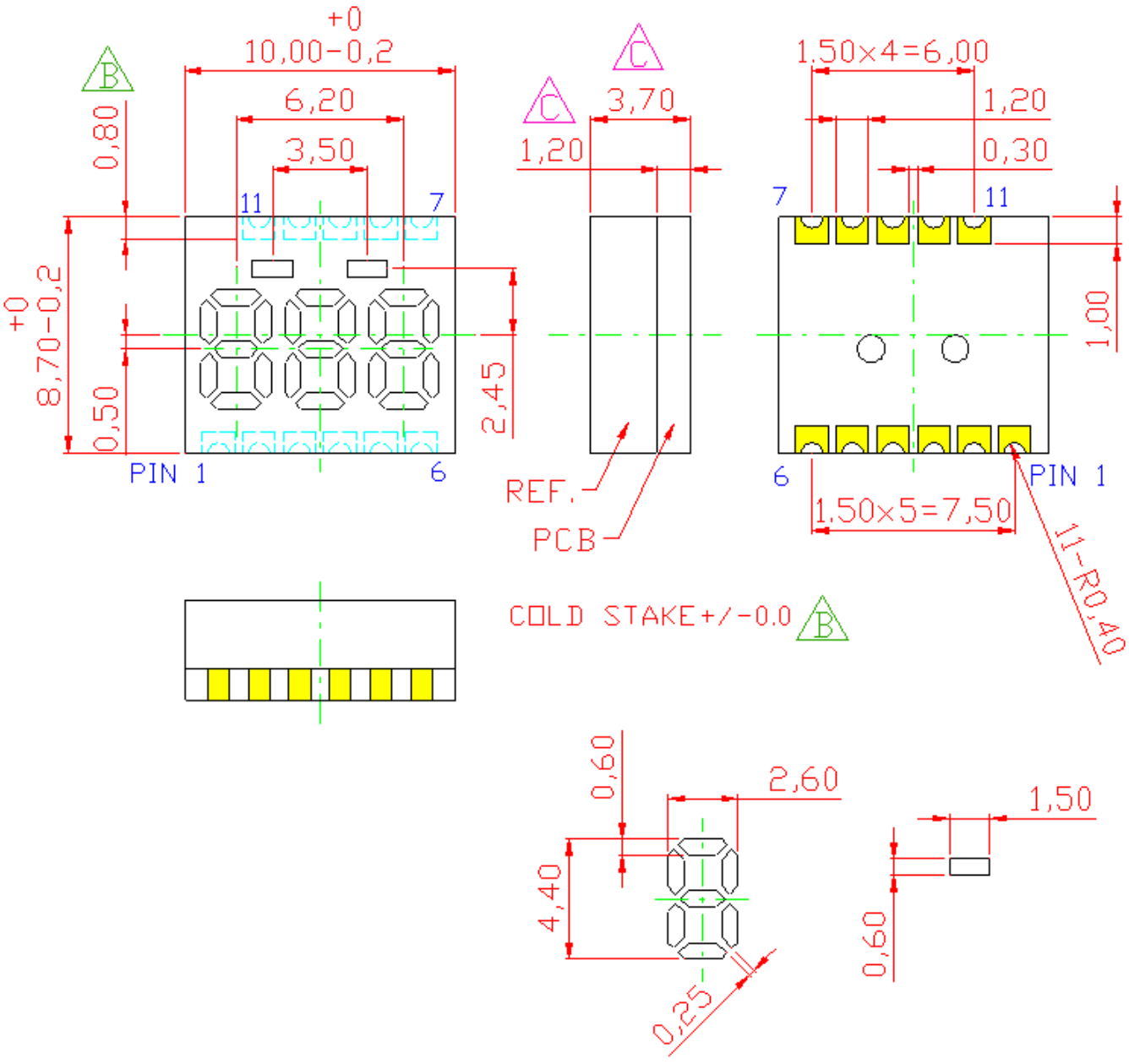
The display has Gray face, White segment.

DEVICE

PART NO	DESCRIPTION
Super Bright Red & Super Bright Yellow Green & Super Bright Yellow	Common Anode

Version 1.0 Date: 12-21-2017 Specifications are subject to change without notice.
American Opto Plus LED Corp. 1206 E. Lexington Ave., Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com

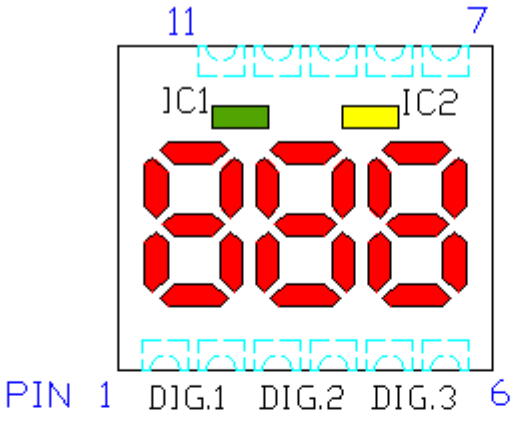
MECHANICAL DIMENSIONS

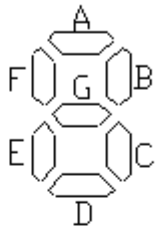


Notes:

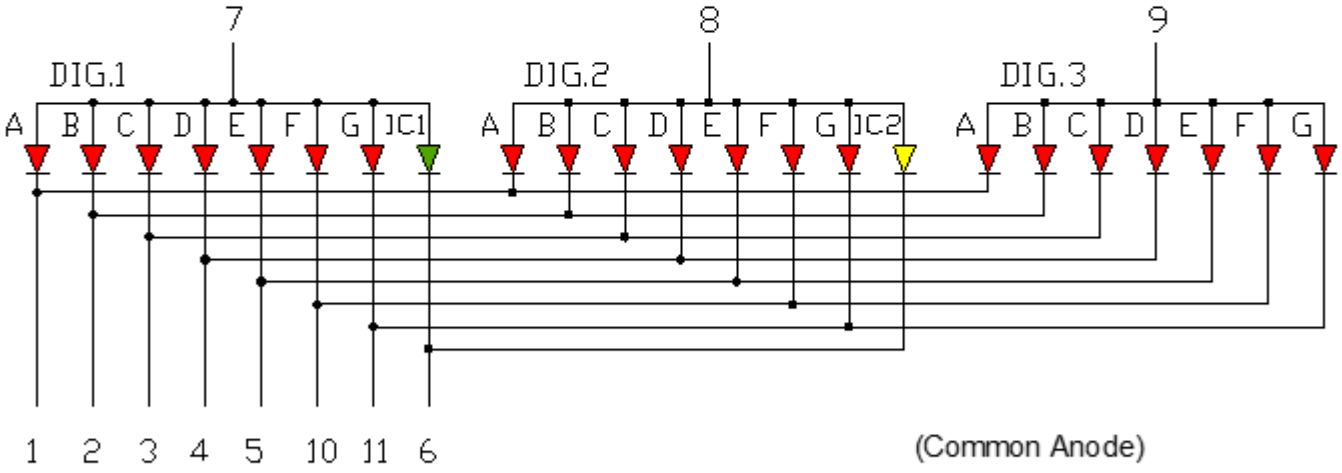
1. All dimensions are in millimeters (inches); tolerances are ±0.25mm (0.01”) specified

TYPICAL INTERNAL EQUIVALENT CIRCUIT





DIG.1-DIG.3



(Common Anode)

THE SIGN " ▶| " IS STANDARD FOR SUPER BRIGHT YELLOW GREEN LED CHIP.
THE SIGN " ▶| " IS STANDARD FOR SUPER BRIGHT YELLOW LED CHIP.
THE SIGN " ▶| " IS STANDARD FOR SUPER BRIGHT RED LED CHIP.

LE: SUPER BRIGHT RED (AlGaInP/GaAs)

ABOSULUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	P_{AD}	70	mW
Derating liner from 25°C	-	0.33	mA / °C
Continuous forward current	I_{AF}	25	mA
Peak current (duty cycle 1/10, 1kHz)	I_{PF}	90	mA
Reverse voltage	V_R	5	V
Operating temperature	T_{OPR}	-25 to +85	°C
Storage temperature	T_{STG}	-25 to +85	°C

ELECTRICAL-OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward voltage	V_F	I_F =20mA	-	2.1	2.6	V
Reverse current	I_R	V_R =5V	-	-	10	μA
Peak wavelength	λ_P	I_F =20mA	-	636	-	nm
Dominant wavelength	λ_D	I_F =20mA	-	630	-	nm
Luminous intensity	I_V	I_F =10mA	-	4.0	-	mcd
Spectral radiation bandwidth	$\Delta\lambda$	I_F =20mA	-	20	-	nm

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YG: SUPER BRIGHT YELLOW GREEN (AlGaInP/GaAs)

ABOSULTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	P_{AD}	70	mW
Derating liner from 25°C	-	0.33	mA / °C
Continuous forward current	I_{AF}	25	mA
Peak current (duty cycle 1/10, 1kHz)	I_{PF}	90	mA
Reverse voltage	V_R	5	V
Operating temperature	T_{OPR}	-25 to +85	°C
Storage temperature	T_{STG}	-25 to +85	°C

ELECTRICAL-OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward voltage	V_F	I_F =20mA	-	2.1	2.6	V
Reverse current	I_R	V_R =5V	-	-	10	μA
Peak wavelength	λ_P	I_F =20mA	-	575	-	nm
Dominant wavelength	λ_D	I_F =20mA	-	572	-	nm
Luminous intensity	I_V	I_F =10mA	-	2.0	-	mcd
Spectral radiation bandwidth	$\Delta\lambda$	I_F =20mA	-	15	-	nm

LY: SUPER BRIGHT YELLOW (AlGaInP/GaAs)

ABOSULUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	P_{AD}	70	mW
Derating liner from 25°C	-	0.33	mA / °C
Continuous forward current	I_{AF}	25	mA
Peak current (duty cycle 1/10, 1kHz)	I_{PF}	90	mA
Reverse voltage	V_R	5	V
Operating temperature	T_{OPR}	-25 to +85	°C
Storage temperature	T_{STG}	-25 to +85	°C

ELECTRICAL-OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward voltage	V_F	I_F =20mA	-	2.0	2.6	V
Reverse current	I_R	V_R =5V	-	-	10	μA
Peak wavelength	λ_P	I_F =20mA	-	593	-	nm
Dominant wavelength	λ_D	I_F =20mA	-	590	-	nm
Luminous intensity	I_V	I_F =10mA	-	4.0	-	mcd
Spectral radiation bandwidth	$\Delta\lambda$	I_F =20mA	-	20	-	nm

LE: SUPER BRIGHT RED (AlGaInP/GaAs)

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVE

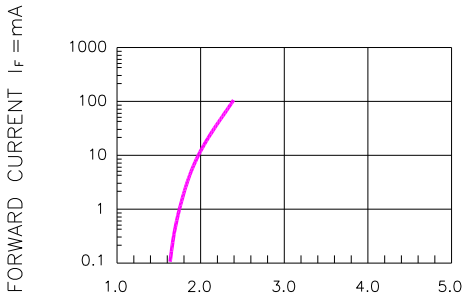


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

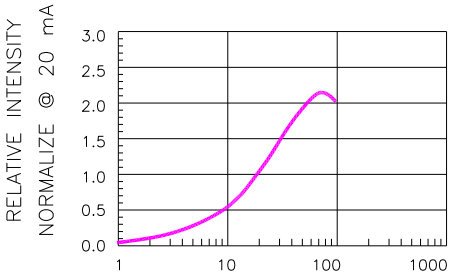


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

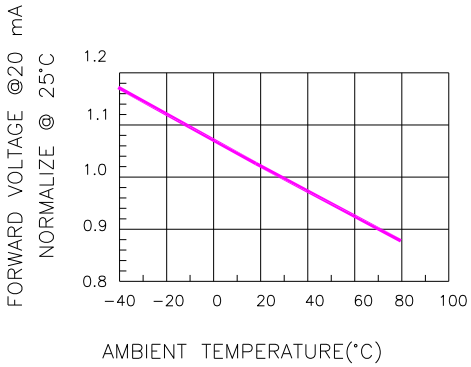


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

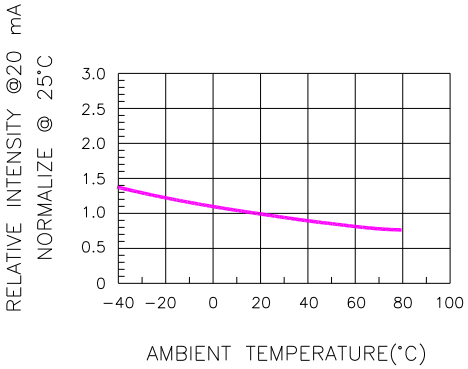


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

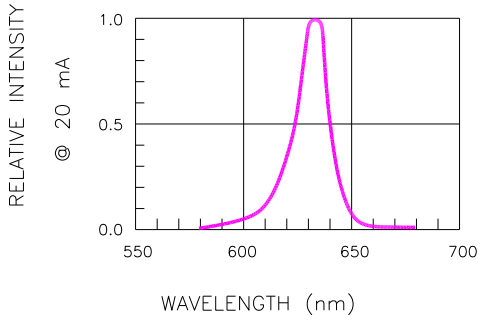


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

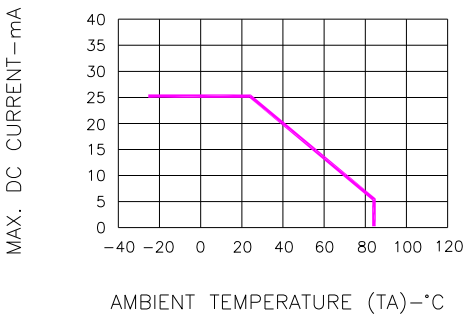
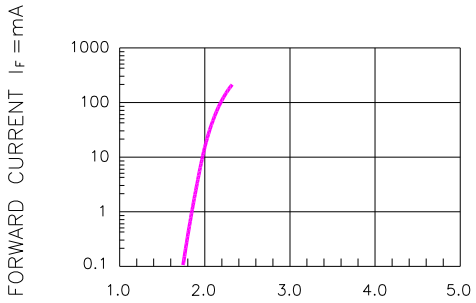


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

YG: SUPER BRIGHT YELLOW GREEN (AlGaInP/GaAs) CURVE

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVE



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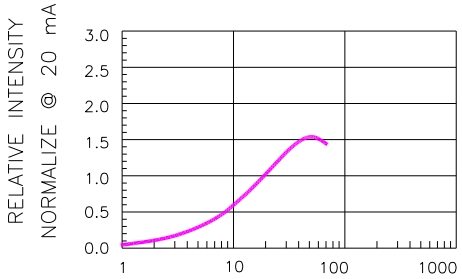


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

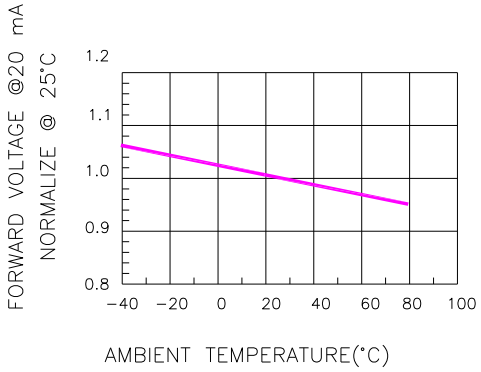


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

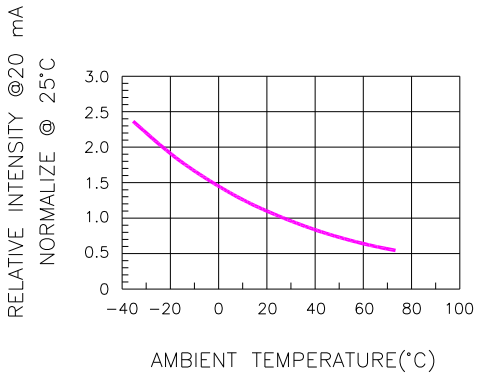


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

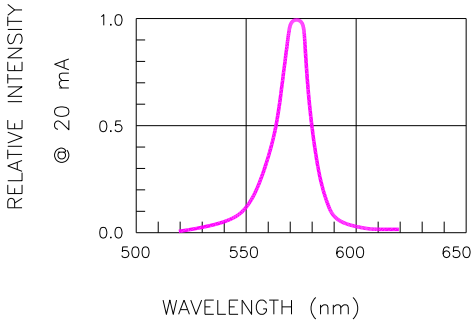


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

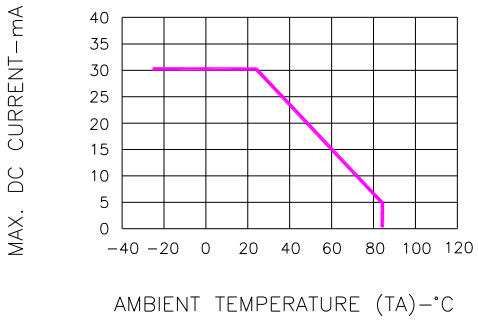
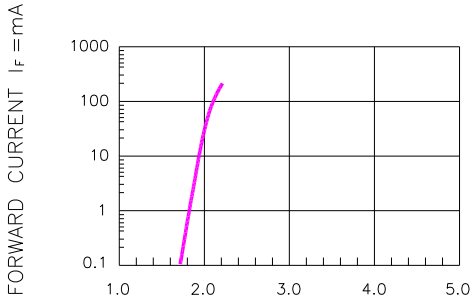


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

LY: SUPER BRIGHT YELLOW (AlGaInP/GaAs) CURVE

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVE



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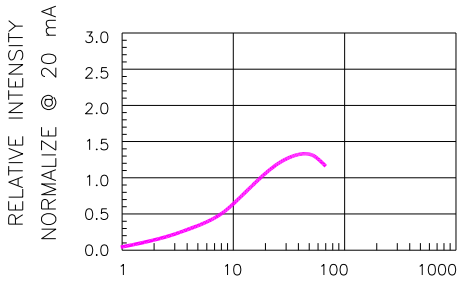


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

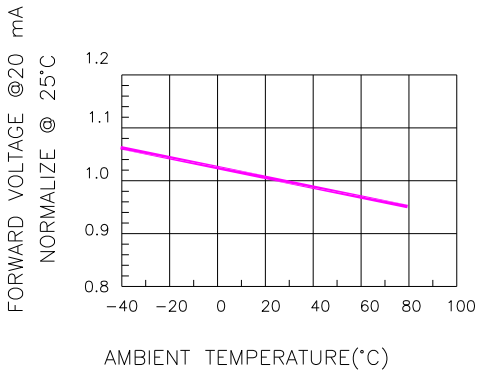


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

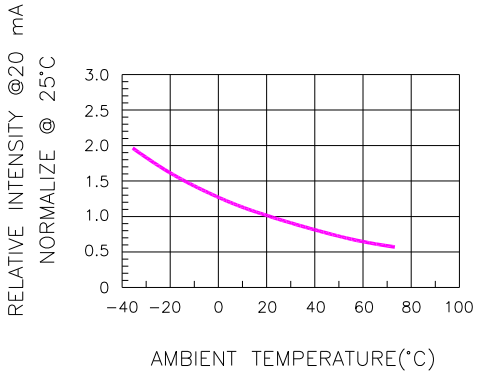


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

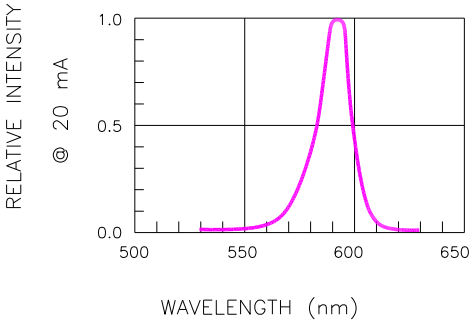


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

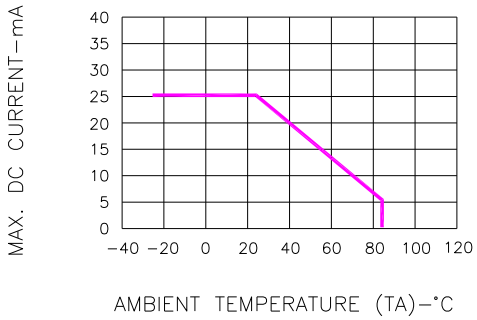
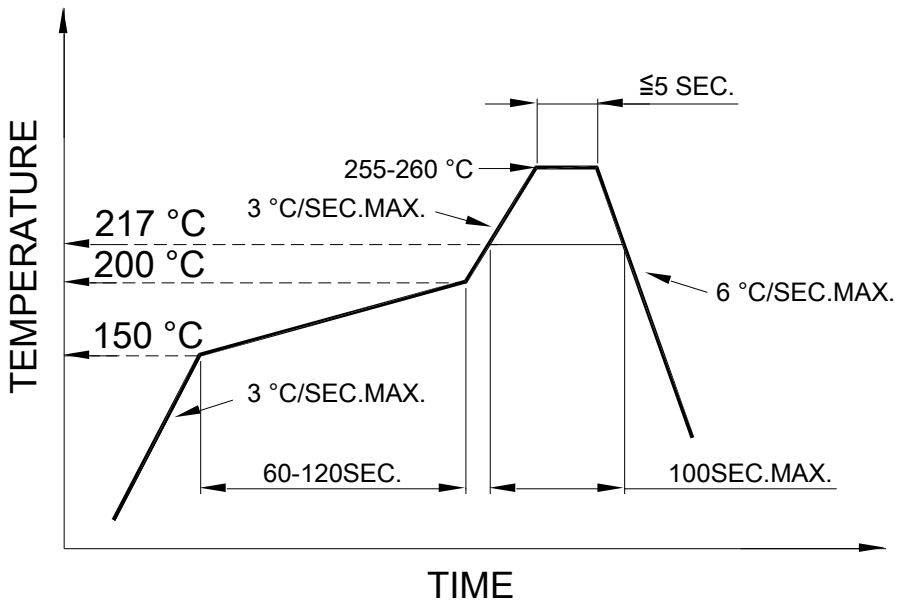


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

RECOMMEND SOLDERING PROFILE

SMT Soldering Profile

Pb free reflow soldering Profile



Notes:

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

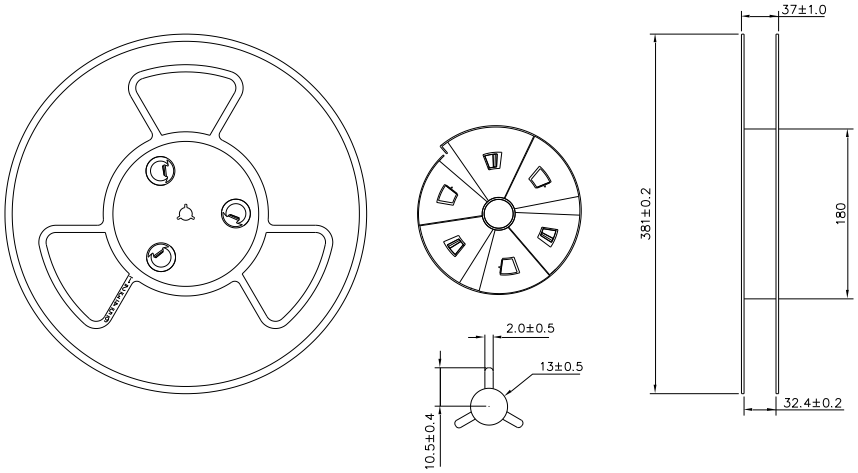
SOLDERING IRON

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

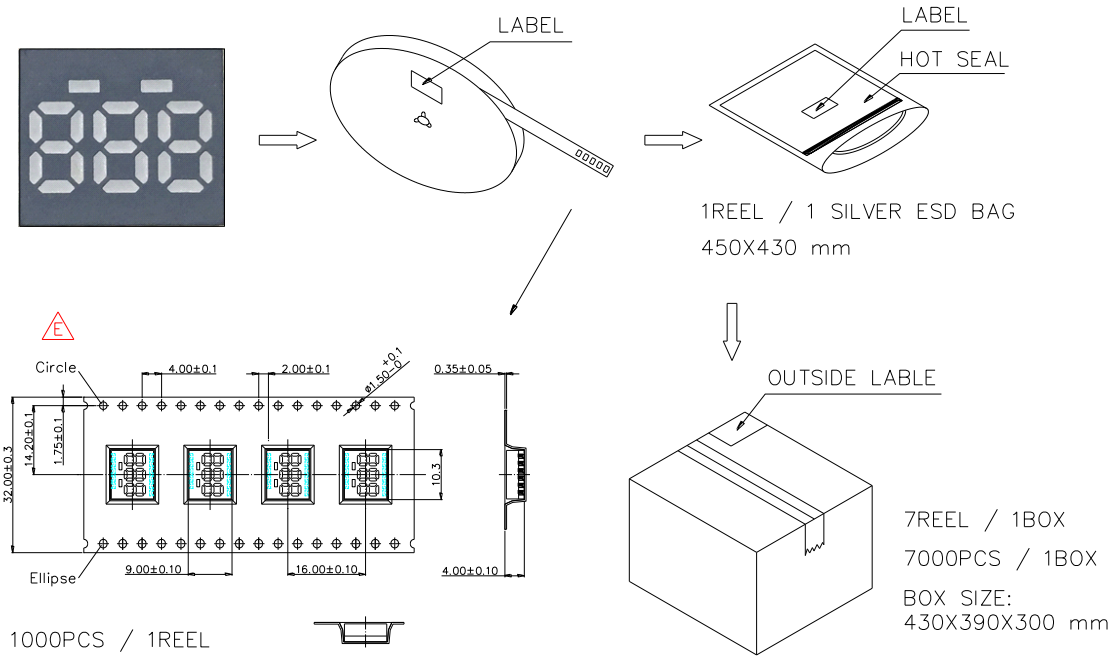
REWORK

1. Customer must finish rework within 3 sec under 350℃
2. The head of soldering iron cannot touch copper foil

REEL DIMENSIONS



PACKING & LABEL SPECIFICATIONS



STORAGED CONDITION

In factory original sealed bag package

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

After opened and not in factory original sealed bag package

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