

## Features

- 0.2" (5.08mm) Digit Height
- Dual Digit Display
- Black/Grey Face , White Segment
- IC compatible, Easy assembly
- Dynamic drive connect
- RoHS Compliant, Pb Free

## Applications

- Consumer Electronics
- Industrial Equipment

## Description

The INND-SD20 series is a 0.2" dual digit display. It is a SMD type LED display which can be used in various applications.

## Internal Circuit Diagram

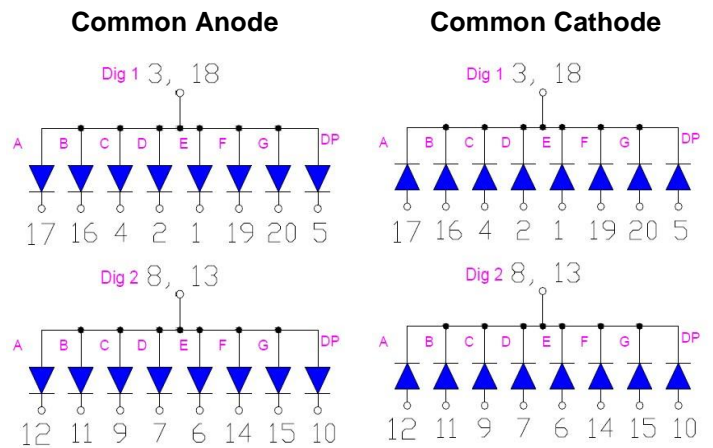


Figure 1. INND-SD20 series Internal Circuit Diagram

## Package Dimensions

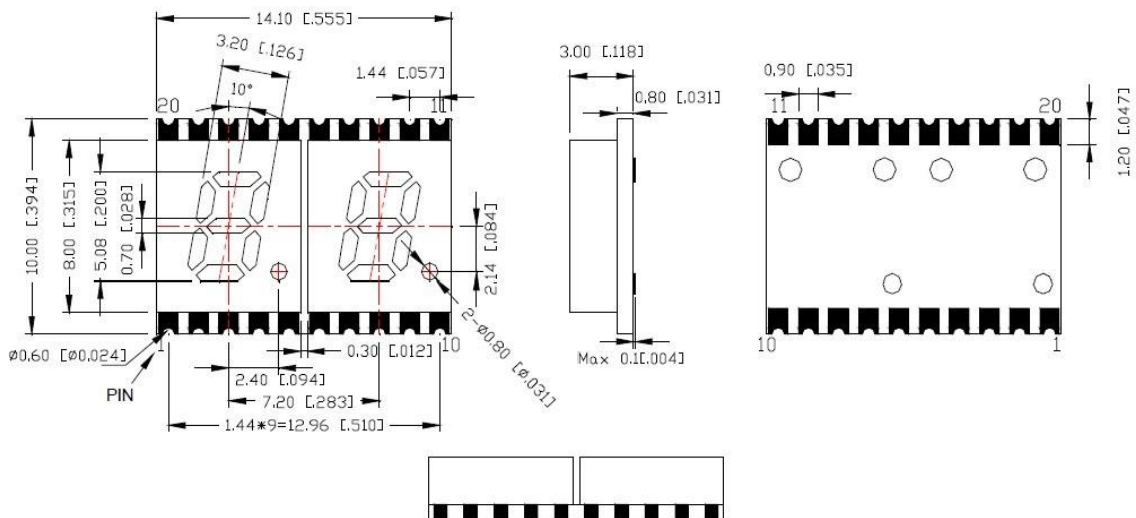
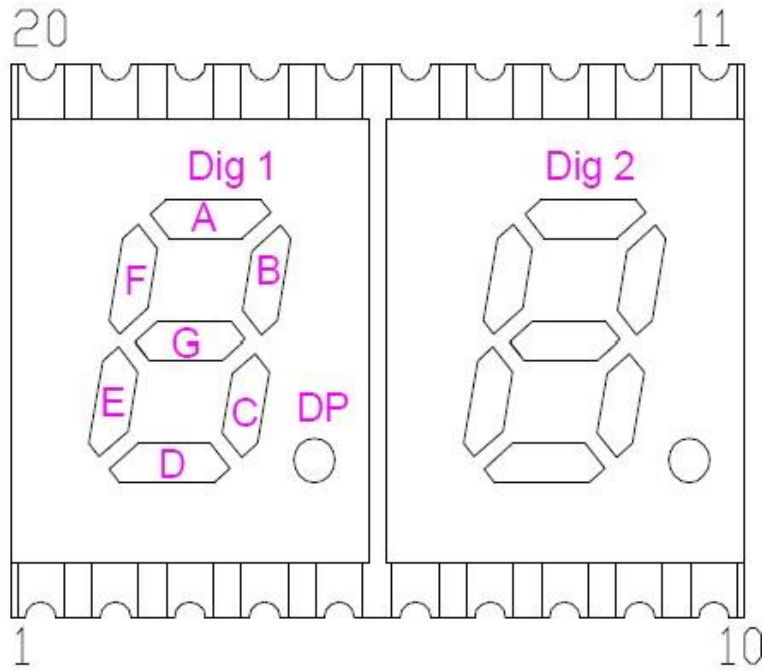
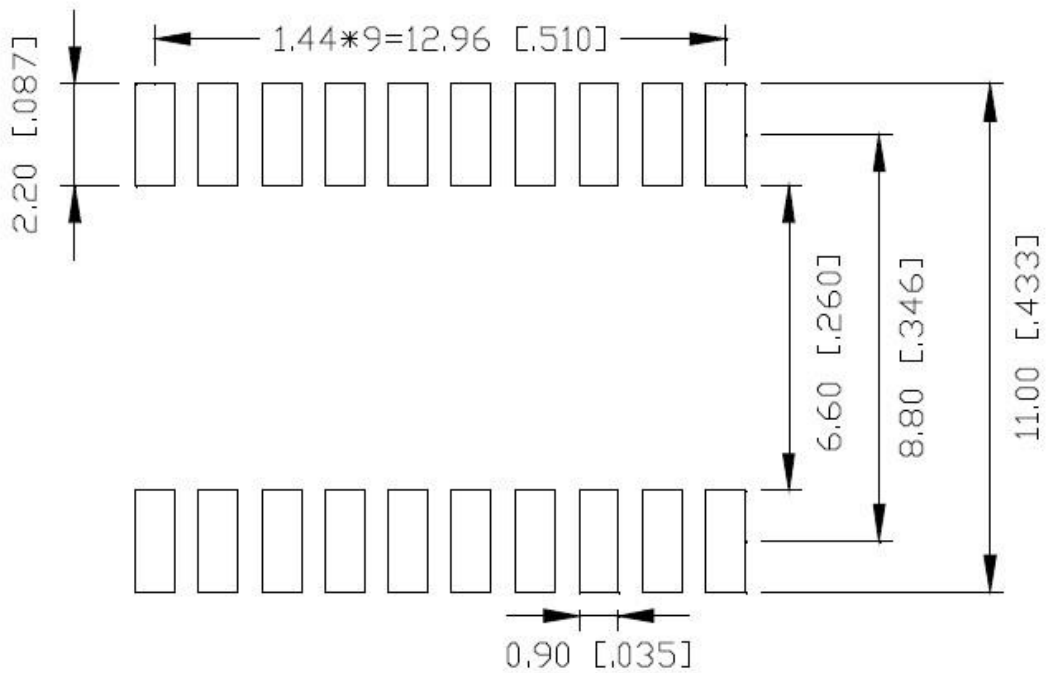


Figure 2. INND-SD20 series Package Dimensions

## 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%

**All Light On Segments Feature & Pin Position**

**Soldering Pad Size**


## Absolute Maximum Rating at 25°C (Note 1)

Product (Per Segment)	Emission Color	Technology	P <sub>d</sub> (mW)	I <sub>F</sub> (mA)	I <sub>FP</sub> * (mA)	V <sub>R</sub> (V)	Derate From 25°C (mA/°C)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)
INND-SD20YGXX	Yellow Green	AlGaInP	70	25	90	5	0.33	-40 °C ~+105 °C	-40 °C ~+105 °C
INND-SD20YXX	Yellow	AlGaInP	70	25	90	5	0.33	-40 °C ~+105 °C	-40 °C ~+105 °C
INND-SD20AXX	Amber	AlGaInP	70	25	90	5	0.33	-40 °C ~+105 °C	-40 °C ~+105 °C
INND-SD20RXX	Red	AlGaInP	70	25	90	5	0.33	-40 °C ~+105 °C	-40 °C ~+105 °C
INND-SD20DRXX	Deep Red	AlGaInP	70	25	90	5	0.33	-40 °C ~+105 °C	-40 °C ~+105 °C
INND-SD20GXX	Green	InGaN	114	30	100	5	0.4	-40 °C ~+105 °C	-40 °C ~+105 °C
INND-SD20BXX	Blue	InGaN	114	30	100	5	0.4	-40 °C ~+105 °C	-40 °C ~+105 °C

### Notes

1. Condition for I<sub>FP</sub> is pulse of 1/10 duty and 0.1msec width

## Electrical Characteristics $T_A = 25^\circ\text{C}$ (Note 1)

Product (Per Segment)	Emission Color	$V_F(\text{V})@20\text{mA}$			$\lambda(\text{nm})@10\text{mA}$		$I_V^*(\text{mcd})@10\text{mA}$			$I_R(\mu\text{A})@V_R=5\text{V}$	$I_{V-M}@I_F=10\text{mA}$
		min	typ.	max	$\lambda_D$	$\lambda_P$	min	typ.	max	max	max
INND-SD20YGXX	Yellow Green	-	2.0	2.8	570	572	-	2	-	100	2:1
INND-SD20YXX	Yellow	-	2.0	2.8	590	592	-	12	-	100	2:1
INND-SD20AXX	Amber	-	2.0	2.8	605	612	-	13	-	100	2:1
INND-SD20RXX	Red	-	2.0	2.8	630	644	-	5	-	100	2:1
INND-SD20DRXX	Deep Red	-	2.0	2.8	645	660	-	4	-	100	2:1
INND-SD20GXX	Green	-	3.2	3.8	525	-	-	75	-	100	2:1
INND-SD20BXX	Blue	-	3.2	3.8	465	-	-	11	-	50	2:1

### Notes

1. Performance guaranteed only under conditions listed in above tables.

### ESD Precaution

**ATTENTION:** Electrostatic Discharge (ESD) protection



The symbol above denotes that ESD precaution is needed. ESD protection for GaP and AlGaAs based chips is necessary even though they are relatively safe in the presence of low static-electric discharge. Parts built with AlInGaP, GaN, or/and InGaN based chips are STATIC SENSITIVE devices. ESD precaution must be taken during design and assembly.

If manual work or processing is needed, please ensure the device is adequately protected from ESD during the process.

Please be advised that normal static precautions should be taken in the handling and assembly of this device to prevent damage or degradation which may be induced by electrostatic discharge (ESD).

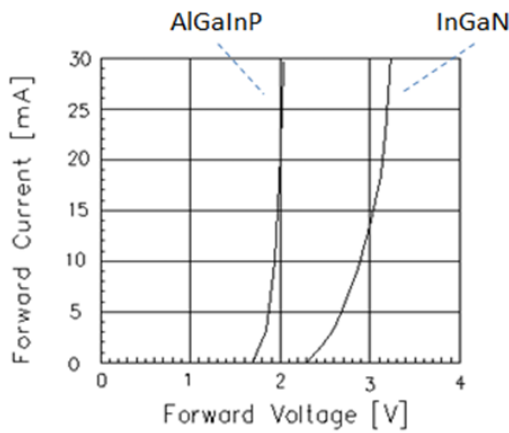
**Characteristic Curves for YG, Y, A, R, DR, G**


Fig 1. Forward Current vs. Forward Voltage

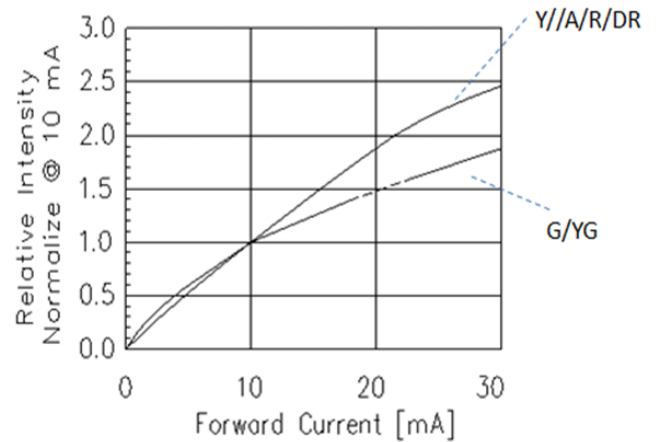


Fig 2. Relative Intensity vs. Forward Current

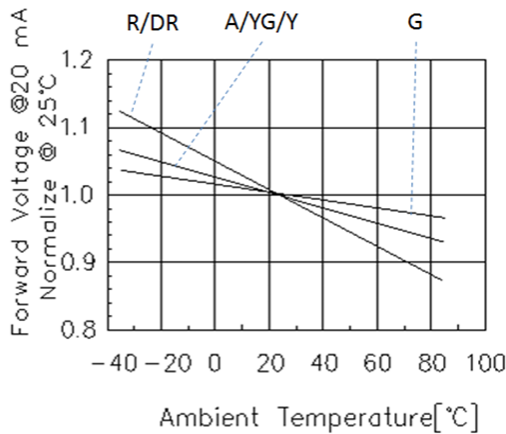


Fig 3. Forward Voltage vs. Temperature

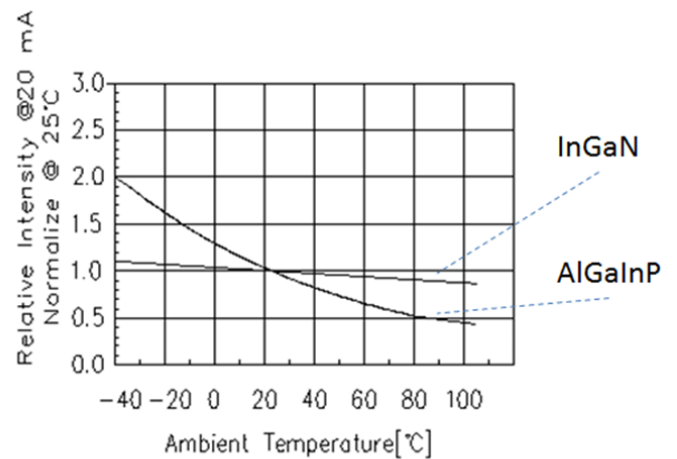


Fig 4. Relative Intensity vs. Temperature

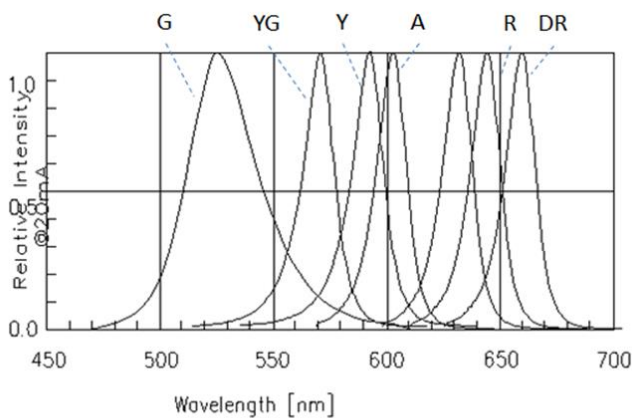


Fig 5. Relative Intensity vs. Wavelength

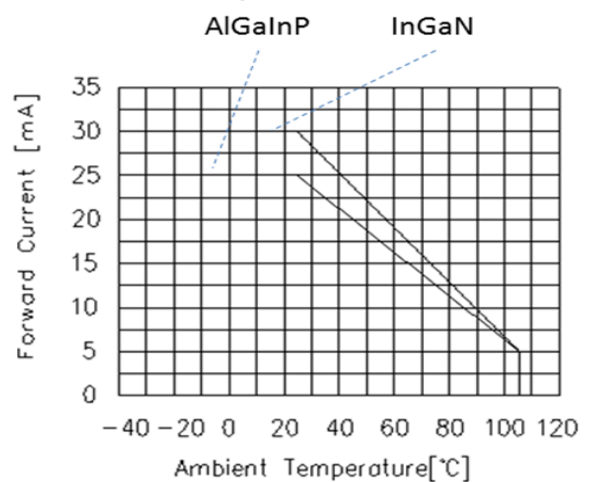


Fig 6. Forward current vs. Temperature

### Characteristic Curves for B

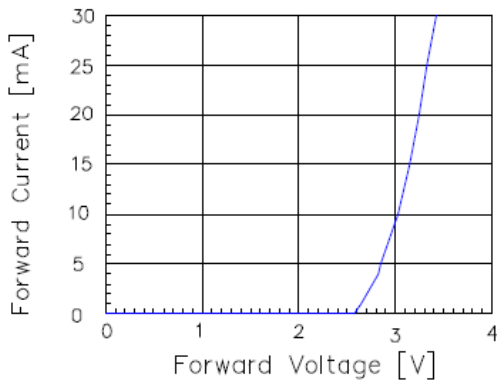


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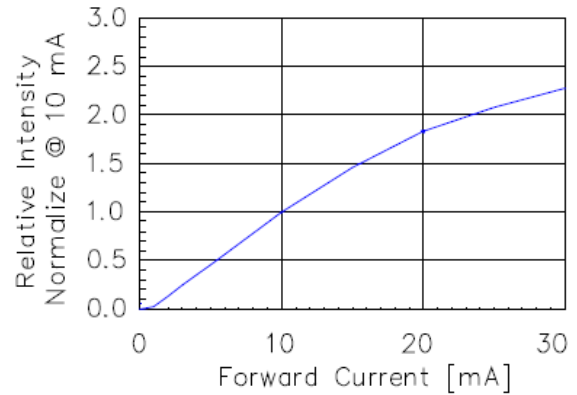


Fig 2. Relative Intensity vs. Forward Current

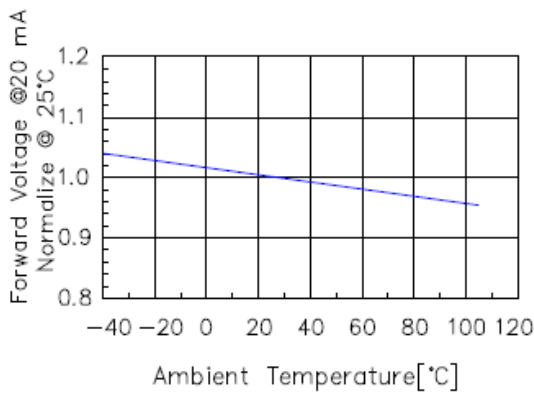


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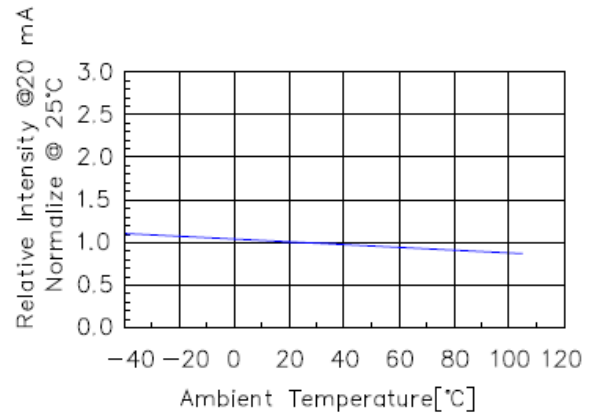


Fig 4. Relative Intensity vs. Temperature

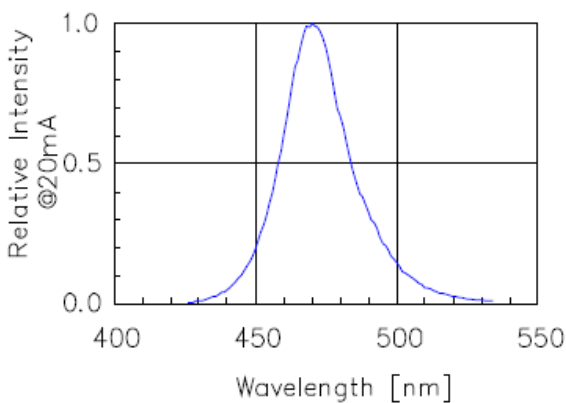


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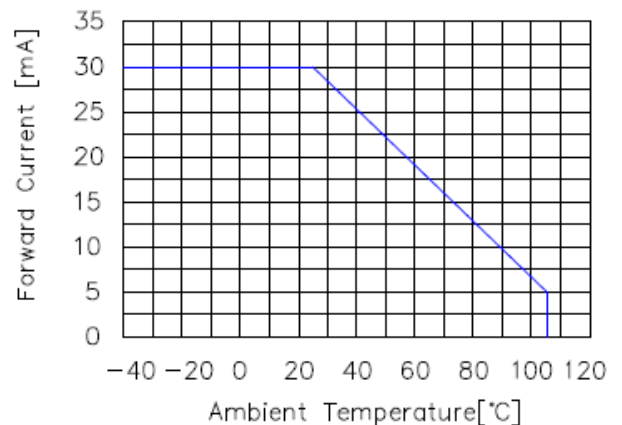


Fig 6. Forward current vs. Temperature

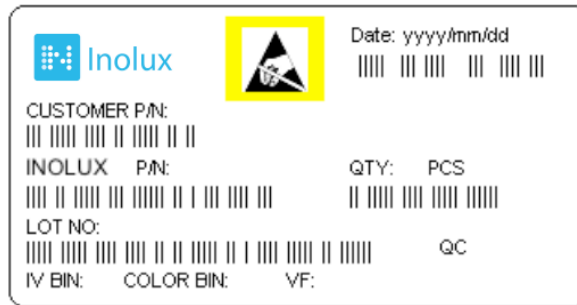
**Ordering Information**

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-SD20YGXX	Yellow Green	AlGaInP	2	2.0	Common Anode	Black	INND-SD20YGAB
					Common Cathode	Black	INND-SD20YGCB
					Common Anode	Grey	INND-SD20YGAG
					Common Cathode	Grey	INND-SD20YGCG
INND-SD20YXX	Yellow	AlGaInP	12	2.0	Common Anode	Black	INND-SD20YAB
					Common Cathode	Black	INND-SD20YCB
					Common Anode	Grey	INND-SD20YAG
					Common Cathode	Grey	INND-SD20YCG
INND-SD20AXX	Amber	AlGaInP	13	2.0	Common Anode	Black	INND-SD20AAB
					Common Cathode	Black	INND-SD20ACB
					Common Anode	Grey	INND-SD20AAG
					Common Cathode	Grey	INND-SD20ACG
INND-SD20RXX	Red	AlGaInP	5	2.0	Common Anode	Black	INND-SD20RAB
					Common Cathode	Black	INND-SD20RCB
					Common Anode	Grey	INND-SD20RAG
					Common Cathode	Grey	INND-SD20RCG

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-SD20DRXX	Deep Red	AlGaInP	4	2.0	Common Anode	Black	INND-SD20DRAB
					Common Cathode	Black	INND-SD20DRCB
					Common Anode	Grey	INND-SD20DRAG
					Common Cathode	Grey	INND-SD20DRCG
INND-SD20GXX	Green	InGaN	75	3.2	Common Anode	Black	INND-SD20GAB
					Common Cathode	Black	INND-SD20GCB
					Common Anode	Grey	INND-SD20GAG
					Common Cathode	Grey	INND-SD20GCG
INND-SD20BXX	Blue	InGaN	11	3.2	Common Anode	Black	INND-SD20BAB
					Common Cathode	Black	INND-SD20BCB
					Common Anode	Grey	INND-SD20BAG
					Common Cathode	Grey	INND-SD20BCG



**Label Specifications**



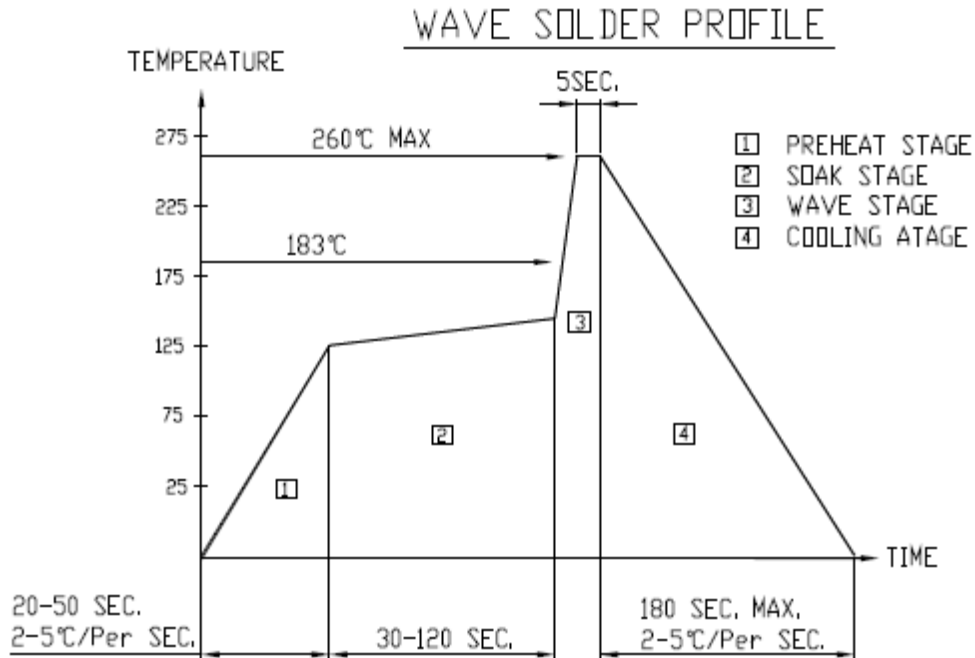
**Inolux P/N:**

I	N	N	D	-	S	D	2	0	X	X	X	-	X	X	X	X	
Inolux		Display Type			Display Type		Dimension		Color	Polarity		Face Color		Customized Stamp-off			
		ND = Numeric Display			S: SMD Type D: Dual		20 = 0.2" Display Height		YG: 570 nm Y: 590 nm A: 605 nm R: 624 nm DR: 660 nm G: 520nm B: 470 nm	A = Common Anode  C=Common Cathode		B = Black G = Grey					

**Lot No.:**

Z	2	0	1	7	01	24	001
Internal Tracker	Year (2017, 2018, .....)				Month	Date	Serial

## Reflow Soldering



## Soldering Iron

Basic Spec is  $\leq 4$  sec. when 260°C (+10°C  $\rightarrow$  -1 second). Power dissipation of Iron should be less than 15W. Surface temperature should be under 230°C

## Rework

Rework should be completed within 4 second under 245°C

## Revision History

Changes since last revision	Page	Version No.	Revision Date
Initial Release		1.0	12-23-2019

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.