

Features

- 1.5" (38.00mm) Digit Height
- Single 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-TS150 series is a 1.5" single digit display. It is a through hole type LED display which can be used in various applications.

Internal Circuit Diagram

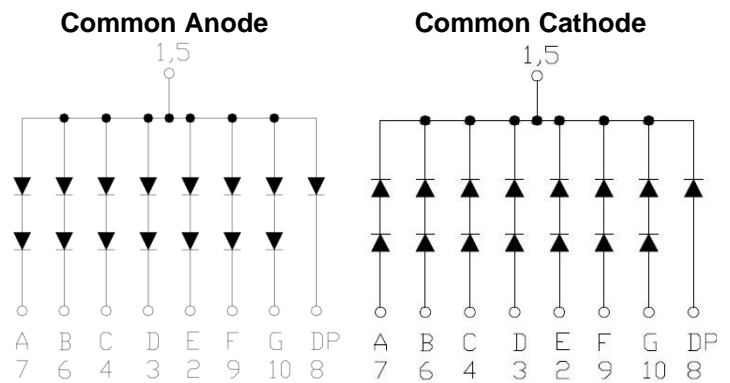


Figure 1. INND-TS150 series Internal Circuit Diagram

Package Dimensions

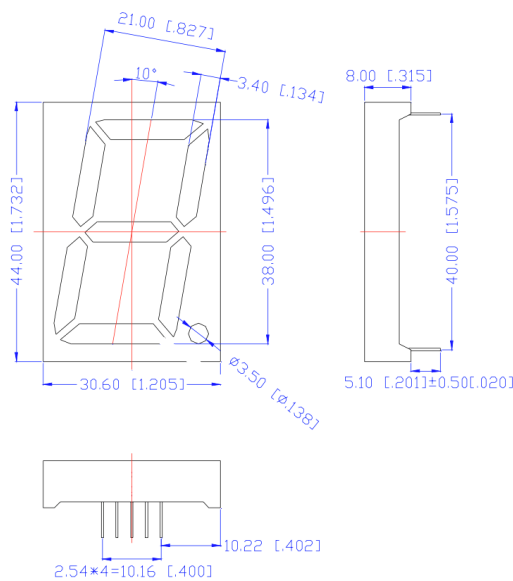
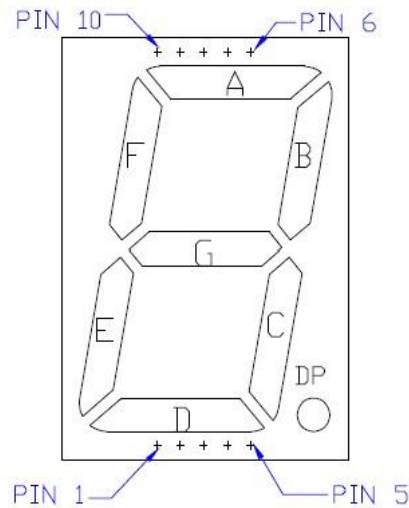


Figure 2. INND-TS150 series Package Dimensions

Notes

1. All pins are $\phi 0.51$ [0.020] ± 0.1 [0.004]
2. Dimension in millimeter [inch], tolerance is ± 0.25 [0.010] and angle is $\pm 1^\circ$ unless otherwise noted.
3. Bending \leq Length * 1%.

All Light On Segments Feature & Pin Position



Absolute Maximum Rating at 25°C (Note 1)

Product (Per Segment)	Emission Color	Technology	Pd (mW)	IF (mA)	IFP* (mA)	VR (V)	Derate From 25°C (mA/°C)	T _{OP} (°C)	T _{ST} (°C)
INND-TS150YGXX	Yellow Green	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS150YXX	Yellow	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS150AXX	Amber	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS150RXX	Red	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS150DRXX	Deep Red	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS150GXX	Green	InGaN	114	30	100	5	0.4	-35°C~+85°C	-35°C~+85°C
INND-TS150BXX	Blue	InGaN	114	30	100	5	0.4	-35°C~+85°C	-35°C~+85°C
INND-TS150WXX	White	InGaN	114	30	100	5	0.4	-35°C~+85°C	-35°C~+85°C

Notes

1. Condition for IFP 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	$V_F(\text{V})@20\text{mA}$ Forward Voltage Per Segment (DP)			$\lambda(\text{nm})@20\text{mA}$		$I_V(\text{mcd})@10\text{mA}$			$I_R(\mu\text{A})$ @ $V_R=5\text{V}$	I_{V-M} @ I_F =10mA
		min	typ.	max	λ_D	λ_P	min	typ.	max	max	max
INND-TS150YGXX	Yellow Green	-	4(2)	5.6(2.8)	570	572	-	34	-	100	2:1
INND-TS150YXX	Yellow	-	4(2)	5.6(2.8)	590	592	-	152	-	100	2:1
INND-TS150AXX	Amber	-	4(2)	5.6(2.8)	605	612	-	205	-	100	2:1
INND-TS150RXX	Red	-	4(2)	5.6(2.8)	630	644	-	72	-	100	2:1
INND-TS150DRXX	Deep Red	-	4(2)	5.6(2.8)	645	660	-	53	-	100	2:1
INND-TS150GXX	Green	-	6.4(3.2)	7.6(3.8)	525	-	-	1026	-	100	2:1
INND-TS150BXX	Blue	-	6.4(3.2)	7.6(3.8)	465	-	-	120	-	50	2:1
INND-TS150WXX	White	-	6.4(3.2)	7.6(3.8)	X: 0.27 Y: 0.25	-	-	520	-	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).

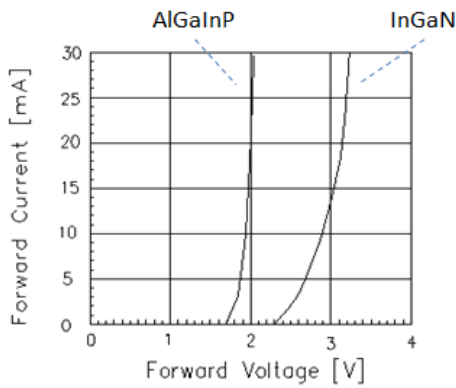
Characteristic Curves for YG, Y, A, R, DR, G


Fig 1. Forward Current vs. Forward Voltage

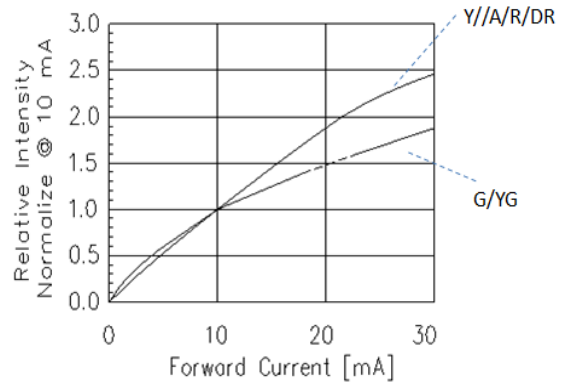


Fig 2. Relative Intensity vs. Forward Current

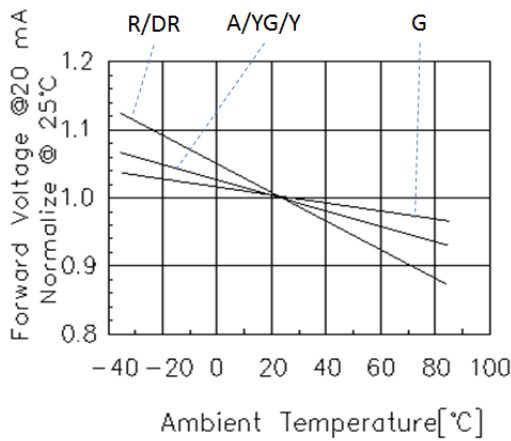


Fig 3. Forward Voltage vs. Temperature

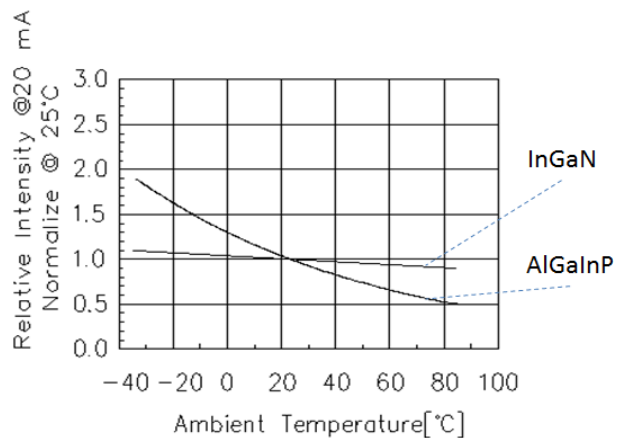


Fig 4. Relative Intensity vs. Temperature

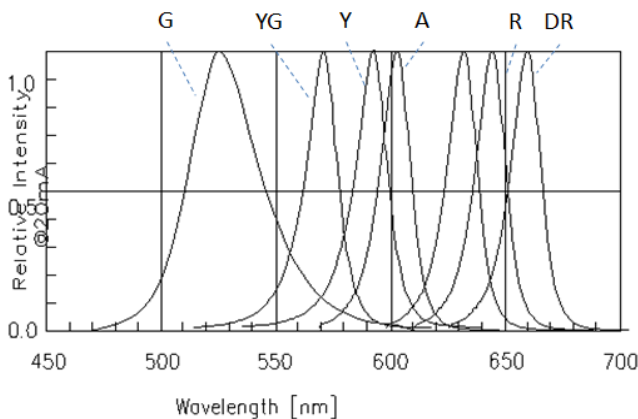


Fig 5. Relative Intensity vs. Wavelength

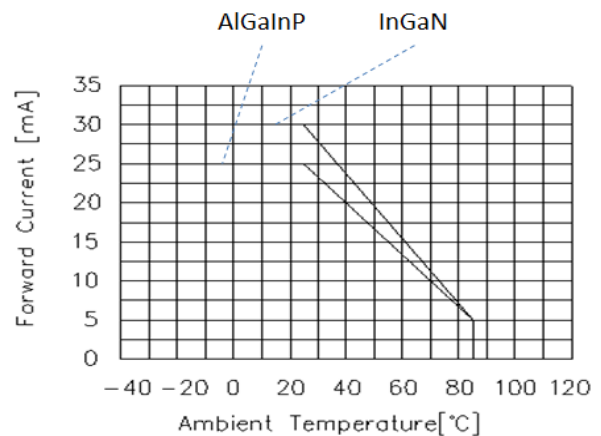


Fig 6. Forward current vs. Temperature

Characteristic Curves for B


Fig 1. Forward Current vs. Forward Voltage



Fig 2. Relative Intensity vs. Forward Current

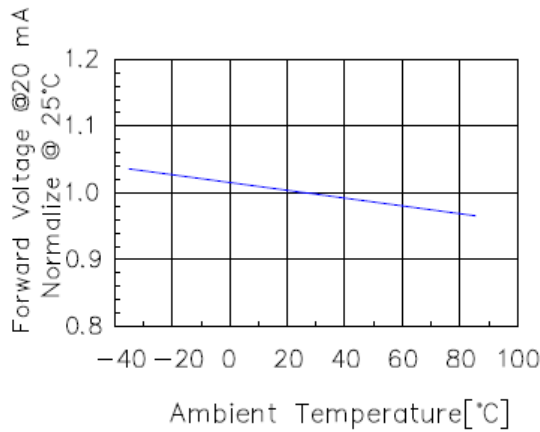


Fig 3. Forward Voltage vs. Temperature

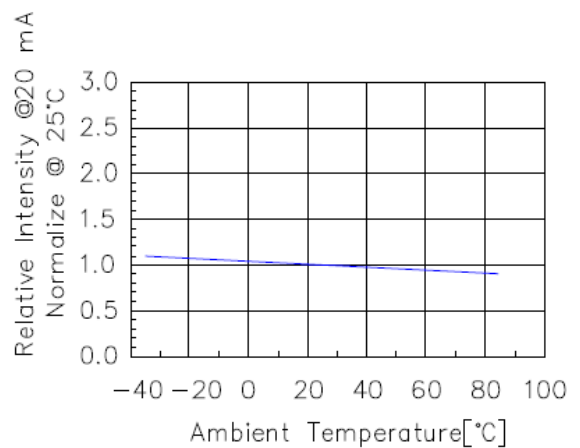


Fig 4. Relative Intensity vs. Temperature

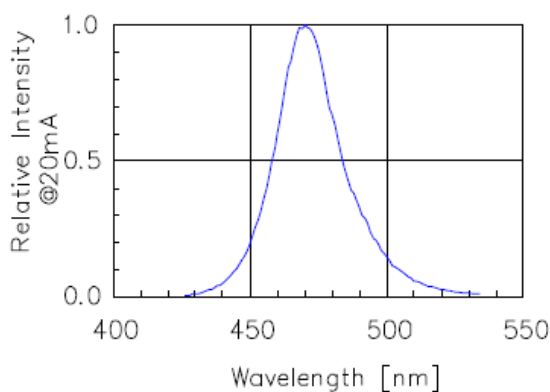


Fig 5. Relative Intensity vs. Wavelength

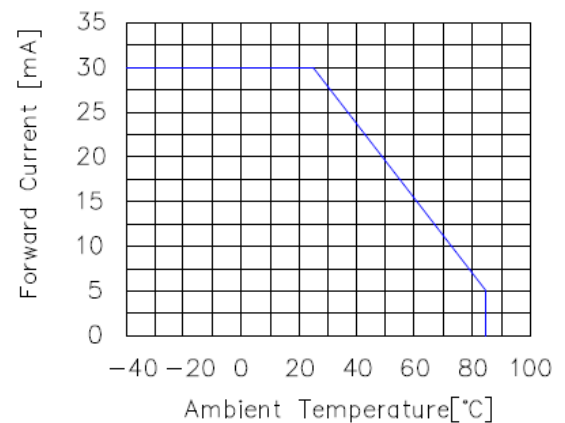


Fig 6. Forward current vs. Temperature

Characteristic Curves for W



Fig 1. Forward Current vs. Forward Voltage

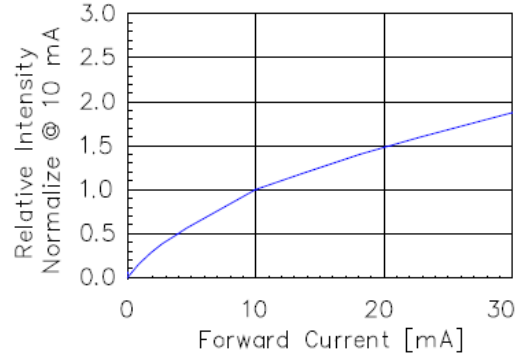


Fig 2. Relative Intensity vs. Forward Current



Fig 3. Forward Voltage vs. Temperature

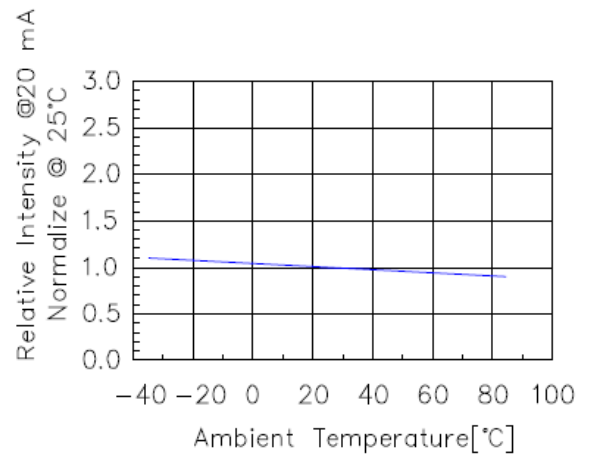


Fig 4. Relative Intensity vs. Temperature



Fig 5. Relative Intensity vs. Wavelength

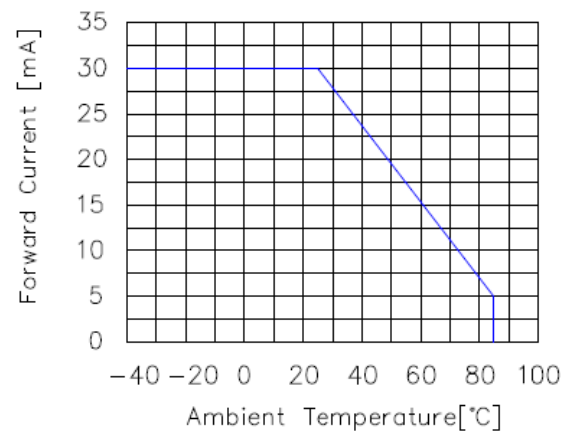
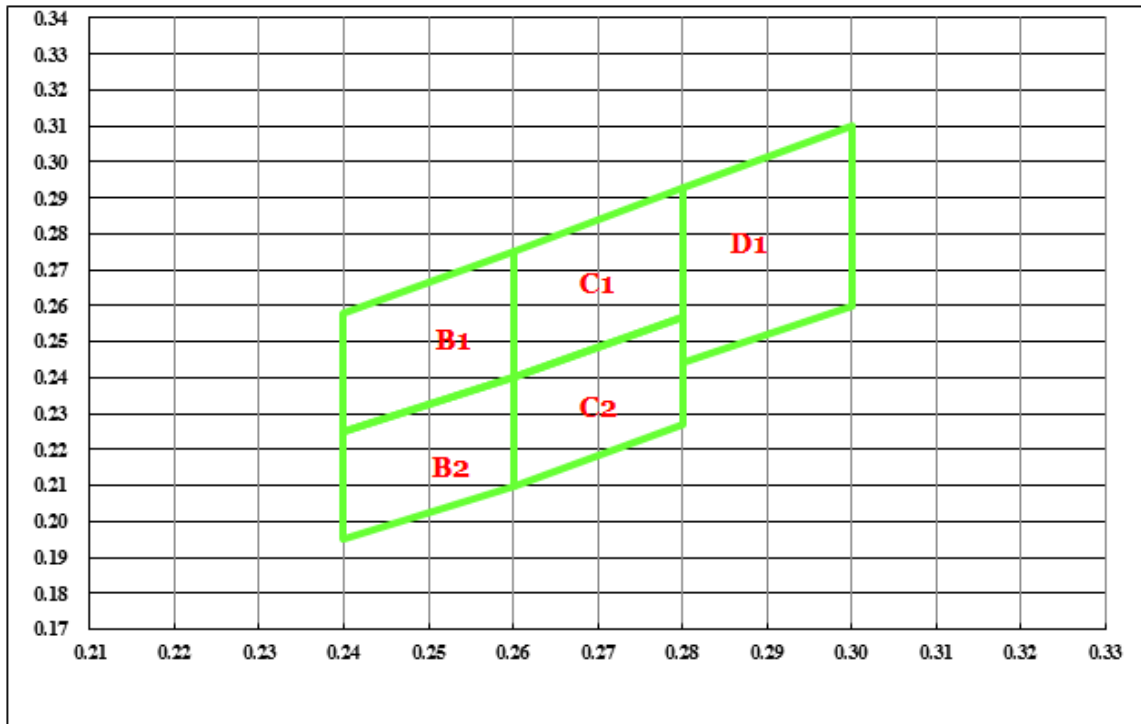


Fig 6. Forward current vs. Temperature

Chromaticity Bin (for White only)


B1				
X	0.240	0.240	0.260	0.260
Y	0.225	0.258	0.275	0.240

B2				
X	0.240	0.240	0.260	0.260
Y	0.195	0.225	0.240	0.210

C1				
X	0.260	0.260	0.280	0.280
Y	0.240	0.275	0.293	0.257

C2				
X	0.260	0.260	0.280	0.280
Y	0.210	0.240	0.257	0.227

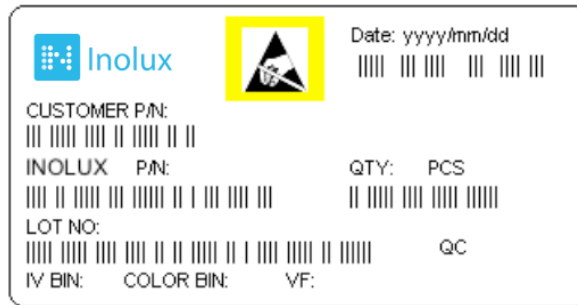
D1				
X	0.280	0.280	0.300	0.300
Y	0.244	0.293	0.310	0.260

Ordering Information

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS150YGXX	Yellow Green	AlGaInP	34	4(2)	Common Anode	Black	INND-TS150YGAB
					Common Cathode	Black	INND-TS150YGCB
					Common Anode	Grey	INND-TS150YGAG
					Common Cathode	Grey	INND-TS150YGCG
INND-TS150YXX	Yellow	AlGaInP	152	4(2)	Common Anode	Black	INND-TS150YAB
					Common Cathode	Black	INND-TS150YCB
					Common Anode	Grey	INND-TS150YAG
					Common Cathode	Grey	INND-TS150YCG
INND-TS150AXX	Amber	AlGaInP	205	4(2)	Common Anode	Black	INND-TS150AAB
					Common Cathode	Black	INND-TS150ACB
					Common Anode	Grey	INND-TS150AAG
					Common Cathode	Grey	INND-TS150ACG
INND-TS150RXX	Red	AlGaInP	72	4(2)	Common Anode	Black	INND-TS150RAB
					Common Cathode	Black	INND-TS150RCB
					Common Anode	Grey	INND-TS150RAG
					Common Cathode	Grey	INND-TS150RCG

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS150DRXX	Deep Red	AlGaInP	53	4(2)	Common Anode	Black	INND-TS150DRAB
					Common Cathode	Black	INND-TS150DRCB
					Common Anode	Grey	INND-TS150DRAG
					Common Cathode	Grey	INND-TS150DRCG
INND-TS150GXX	Green	InGaN	1026	6.4(3.2)	Common Anode	Black	INND-TS150GAB
					Common Cathode	Black	INND-TS150GCB
					Common Anode	Grey	INND-TS150GAG
					Common Cathode	Grey	INND-TS150GCG
INND-TS150BXX	Blue	InGaN	120	6.4(3.2)	Common Anode	Black	INND-TS150BAB
					Common Cathode	Black	INND-TS150BCB
					Common Anode	Grey	INND-TS150BAG
					Common Cathode	Grey	INND-TS150BCG
INND-TS150WXX	White	InGaN	520	6.4(3.2)	Common Anode	Black	INND-TS150WAB
					Common Cathode	Black	INND-TS150WCB
					Common Anode	Grey	INND-TS150WAG
					Common Cathode	Grey	INND-TS150WCG

Label Specifications



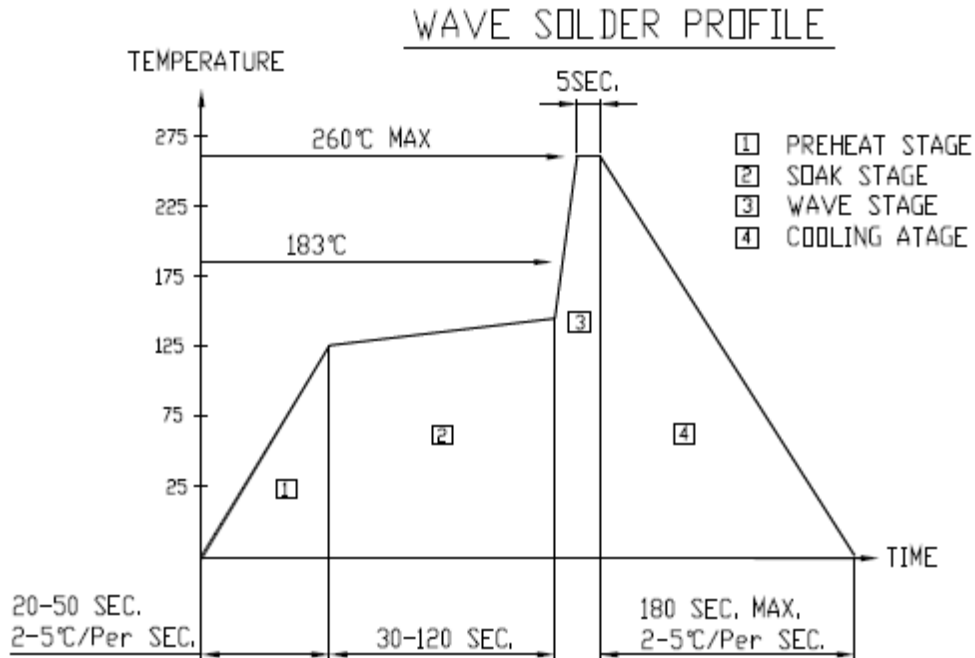
Inolux P/N:

I	N	N	D	-	T	S	1	5	0	X	X	X	-	X	X	X	X
Inolux	Display Type					Display Type	Dimension			Color	Polarity	Face Color	Customized Stamp-off				
	ND = Numeric Display	T: Through hole S: Single				150 = 1.5" Display Height			YG: 570 nm Y: 590 nm A: 605 nm R: 624 nm DR: 660 nm G: 520 nm B: 470 nm W: X: 0.27 Y: 0.25	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 ≤ 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	12-26-2019

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