

## Features

- 0.36" (9.10mm) Digit Height
- Single Digit Display
- Black/Grey Face, White Segment
- IC compatible, Easy assembly
- Dynamic drive connects
- RoHS Compliant, Pb Free

## Applications

- Consumer Electronics
- Industrial Equipment

## Description

The INND-TS36 series is a 0.36" single digit display. It is a through hole type LED display which can be used in various applications.

## Internal Circuit Diagram

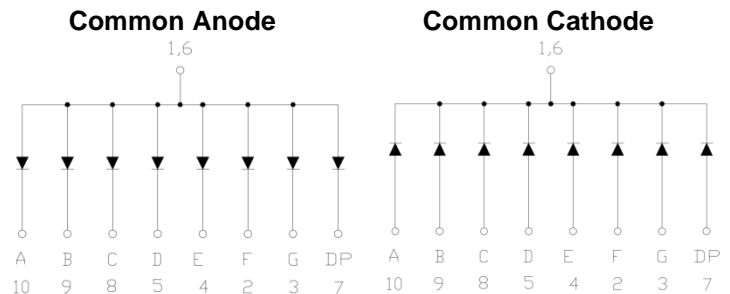


Figure 1. INND-TS36 series Internal Circuit Diagram

## Package Dimensions

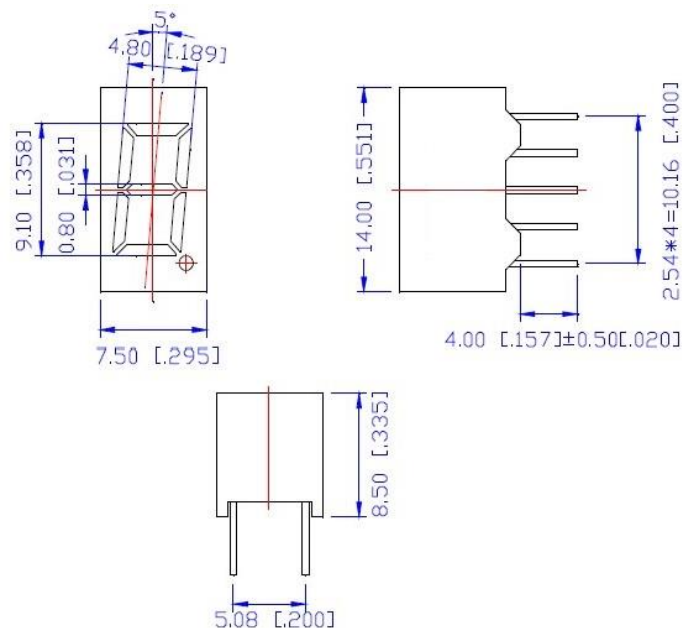
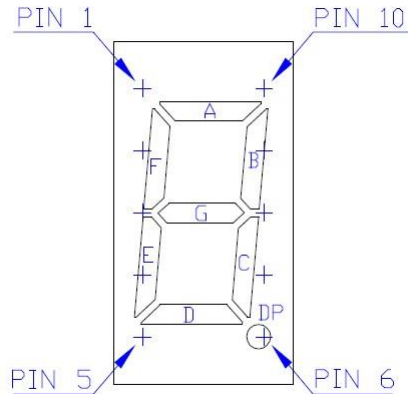


Figure 2. INND-TS36 series Package Dimensions

## Notes

1. All pins are  $\varnothing 0.45 [L.018] \pm 0.1 [L.004]$
2. Dimension in millimeter [inch], tolerance is  $\pm 0.25 [L.010]$  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)	TOP (°C)	TST (°C)
INND-TS36YGXX	Yellow Green	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS36YXX	Yellow	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS36AXX	Amber	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS36RXX	Red	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS36DRXX	Deep Red	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS36GXX	Green	InGaN	114	30	100	5	0.4	-35°C~+85°C	-35°C~+85°C
INND-TS36BXX	Blue	InGaN	114	30	100	5	0.4	-35°C~+85°C	-35°C~+85°C
INND-TS36WXX	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 <sub>F</sub> (V)@20mA			λ(nm)@20mA		I <sub>V</sub> (mcd)@10mA			I <sub>R</sub> (μA)@V <sub>R</sub> =5V	I <sub>V-M</sub> @I <sub>F</sub> =10mA
		min	typ.	max	λ <sub>D</sub>	λ <sub>P</sub>	min	typ.	max	max	max
INND-TS36YGXX	Yellow Green	-	2.0	2.8	570	572	-	12	-	100	2:1
INND-TS36YXX	Yellow	-	2.0	2.8	590	592	-	30	-	100	2:1
INND-TS36AXX	Amber	-	2.0	2.8	605	612	-	40	-	100	2:1
INND-TS36RXX	Red	-	2.0	2.8	630	644	-	18	-	100	2:1
INND-TS36DRXX	Deep Red	-	2.0	2.8	645	660	-	12	-	100	2:1
INND-TS36GXX	Green	-	3.2	3.8	525	-	-	120	-	100	2:1
INND-TS36BXX	Blue	-	3.2	3.8	465	-	-	12	-	50	2:1
INND-TS36WXX	White	-	3.2	3.8	X: 0.27 Y: 0.25	-	-	50	-	50	2:1

### Notes

- 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).

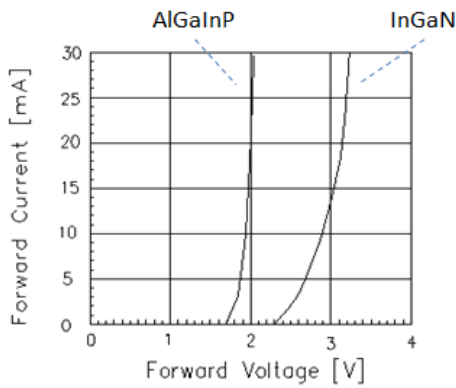
**Characteristic Curves for YG, Y, A, R, DR, G**


Fig 1. Forward Current vs. Forward Voltage

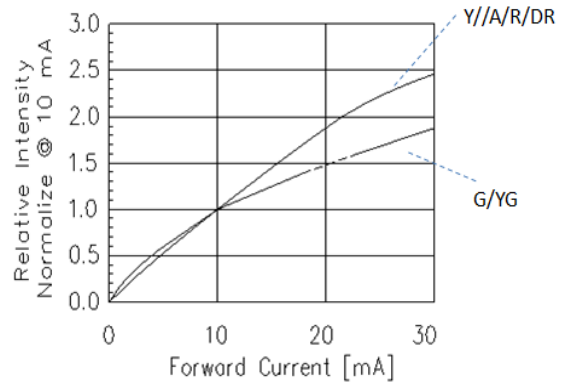


Fig 2. Relative Intensity vs. Forward Current

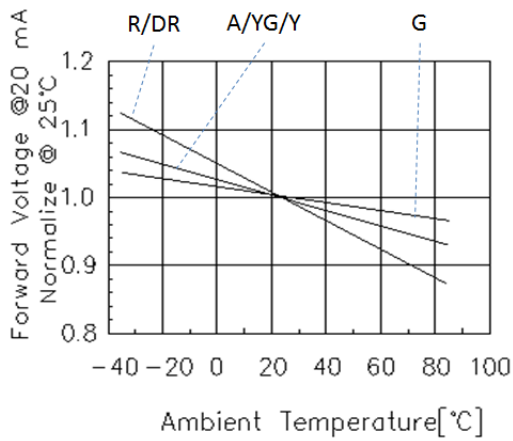


Fig 3. Forward Voltage vs. Temperature

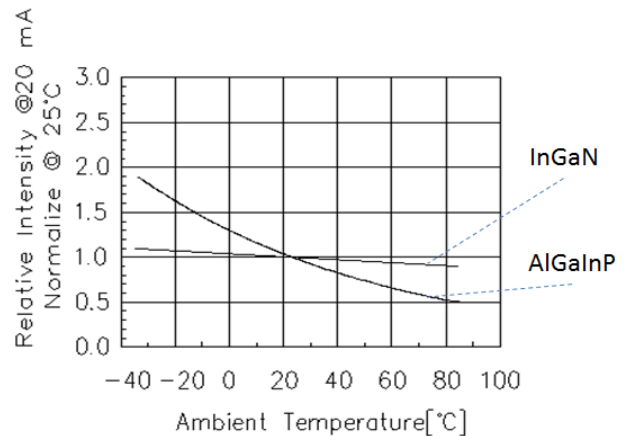


Fig 4. Relative Intensity vs. Temperature

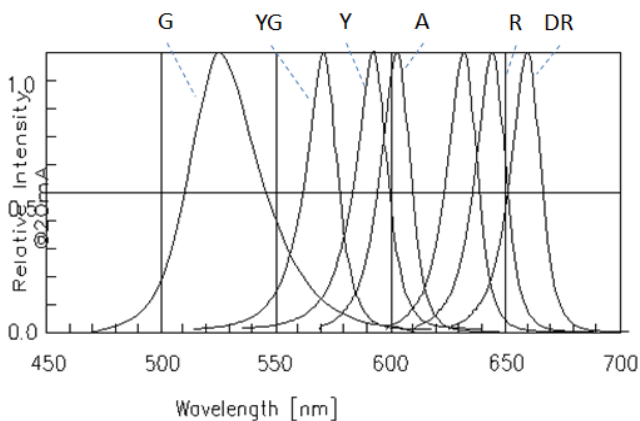


Fig 5. Relative Intensity vs. Wavelength

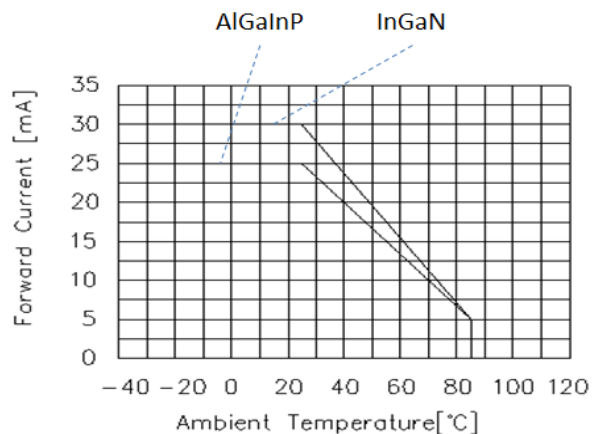


Fig 6. Forward current vs. Temperature

### Characteristic Curves for B



Fig 1. Forward Current vs. Forward Voltage

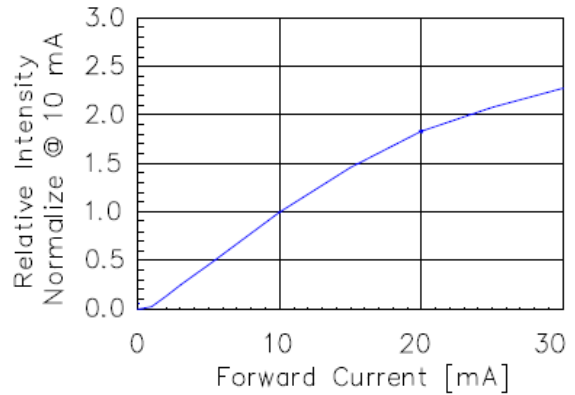


Fig 2. Relative Intensity vs. Forward Current

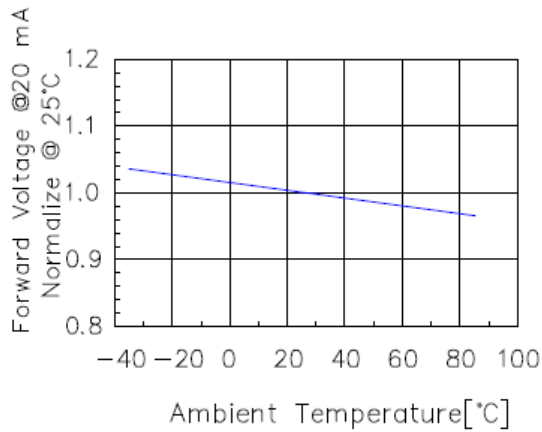


Fig 3. Forward Voltage vs. Temperature

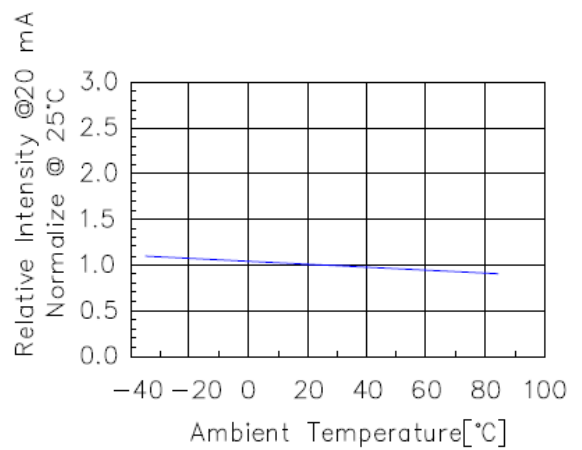


Fig 4. Relative Intensity vs. Temperature

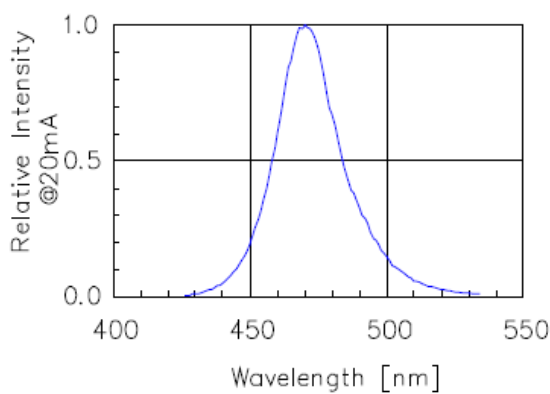


Fig 5. Relative Intensity vs. Wavelength

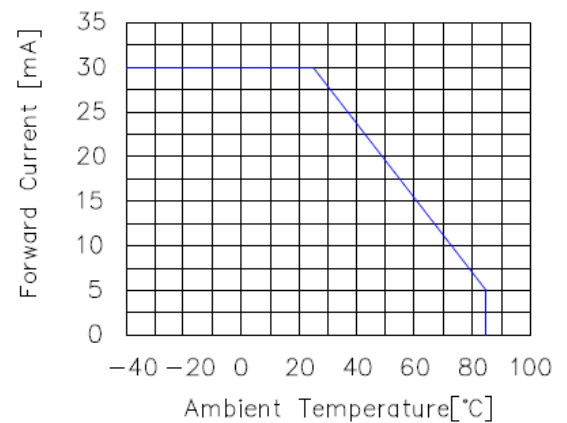


Fig 6. Forward current vs. Temperature

### Characteristic Curves for W



Fig 1. Forward Current vs. Forward Voltage

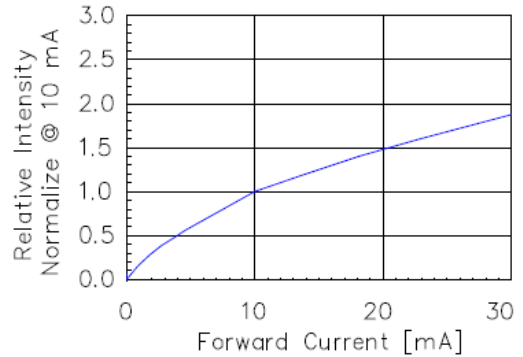


Fig 2. Relative Intensity vs. Forward Current



Fig 3. Forward Voltage vs. Temperature

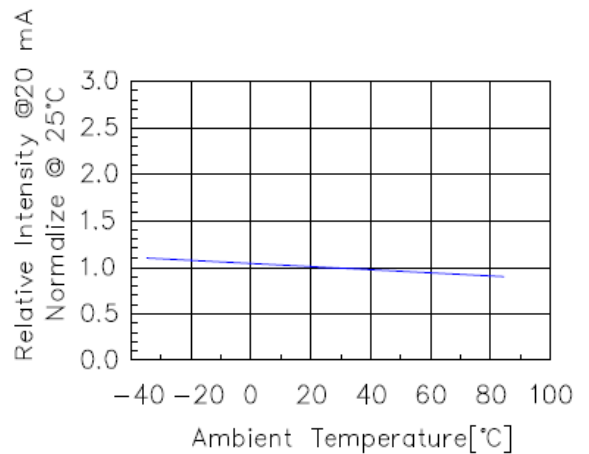


Fig 4. Relative Intensity vs. Temperature



Fig 5. Relative Intensity vs. Wavelength

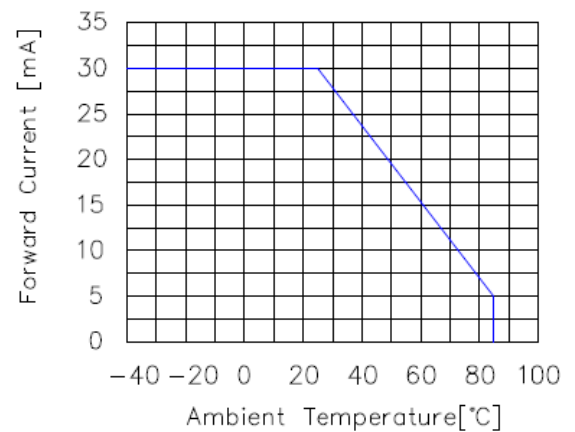
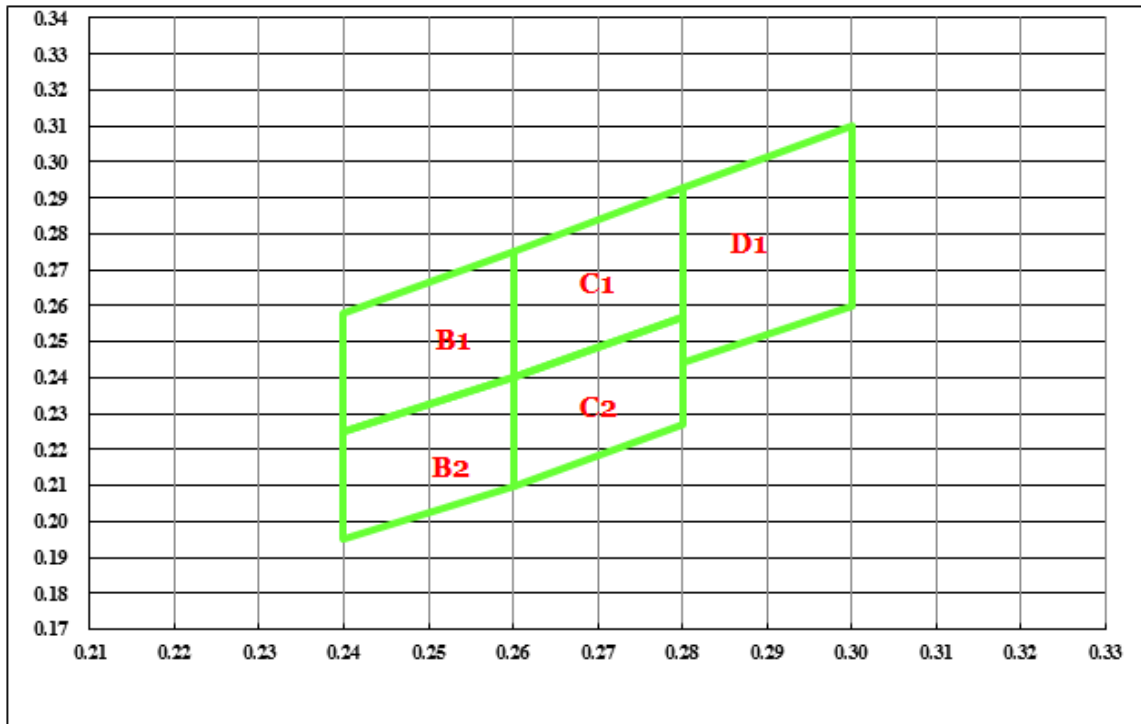


Fig 6. Forward current vs. Temperature

**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

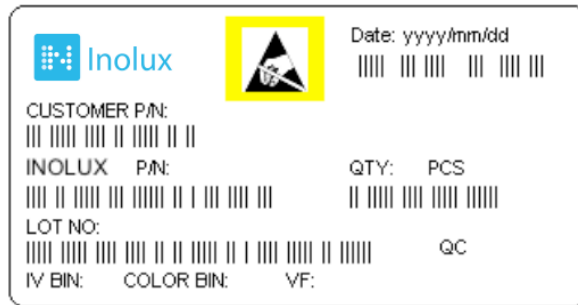
**Ordering Information**

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS36YGXX	Yellow Green	AlGaInP	12	2.0	Common Anode	Black	INND-TS36YGAB
					Common Cathode	Black	INND-TS36YGCB
					Common Anode	Grey	INND-TS36YGAG
					Common Cathode	Grey	INND-TS36YGCG
INND-TS36YXX	Yellow	AlGaInP	30	2.0	Common Anode	Black	INND-TS36YAB
					Common Cathode	Black	INND-TS36YCB
					Common Anode	Grey	INND-TS36YAG
					Common Cathode	Grey	INND-TS36YCG
INND-TS36AXX	Amber	AlGaInP	40	2.0	Common Anode	Black	INND-TS36AAB
					Common Cathode	Black	INND-TS36ACB
					Common Anode	Grey	INND-TS36AAG
					Common Cathode	Grey	INND-TS36ACG
INND-TS36RXX	Red	AlGaInP	18	2.0	Common Anode	Black	INND-TS36RAB
					Common Cathode	Black	INND-TS36RCB
					Common Anode	Grey	INND-TS36RAG
					Common Cathode	Grey	INND-TS36RCG



Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS36DRXX	Deep Red	AlGaInP	12	2.0	Common Anode	Black	INND-TS36DRAB
					Common Cathode	Black	INND-TS36DRCB
					Common Anode	Grey	INND-TS36DRAG
					Common Cathode	Grey	INND-TS36DRCG
INND-TS36GXX	Green	InGaN	120	3.2	Common Anode	Black	INND-TS36GAB
					Common Cathode	Black	INND-TS36GCB
					Common Anode	Grey	INND-TS36GAG
					Common Cathode	Grey	INND-TS36GCG
INND-TS36BXX	Blue	InGaN	12	3.2	Common Anode	Black	INND-TS36BAB
					Common Cathode	Black	INND-TS36BCB
					Common Anode	Grey	INND-TS36BAG
					Common Cathode	Grey	INND-TS36BCG
INND-TS36WXX	White	InGaN	50	3.2	Common Anode	Black	INND-TS36WAB
					Common Cathode	Black	INND-TS36WCB
					Common Anode	Grey	INND-TS36WAG
					Common Cathode	Grey	INND-TS36WCG

**Label Specifications**



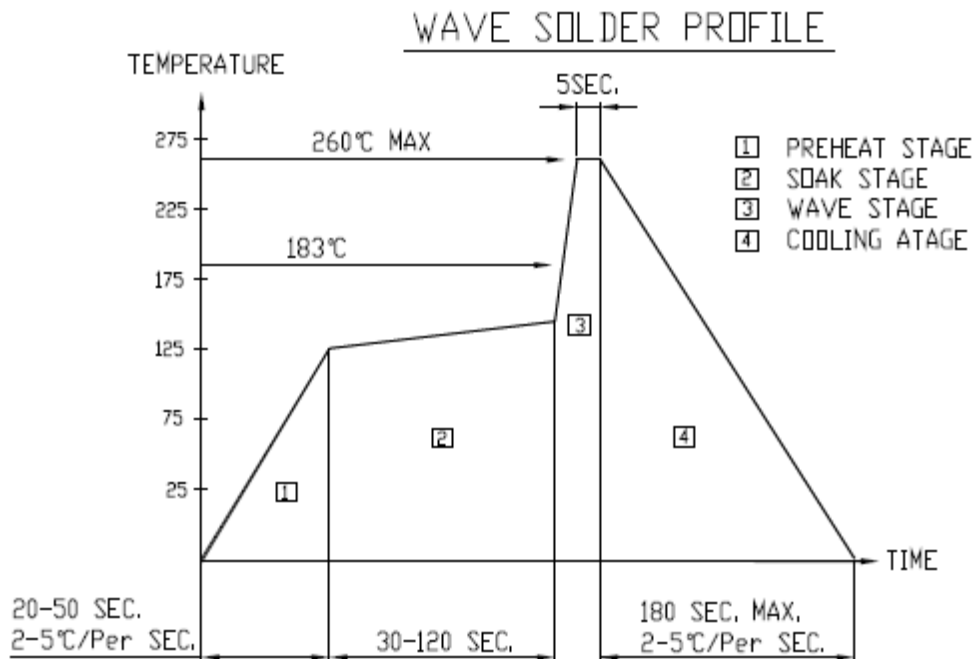
**Inolux P/N:**

I	N	N	D	-	T	S	3	6	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		36 = 0.36" 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  $\leq 4$  sec. when 260°C (+10°C → -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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