

Features

- 0.39" (9.90mm) 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-TS39 series is a 0.39" single digit display. It is a through hole type LED display which can be used in various applications.

Internal Circuit Diagram

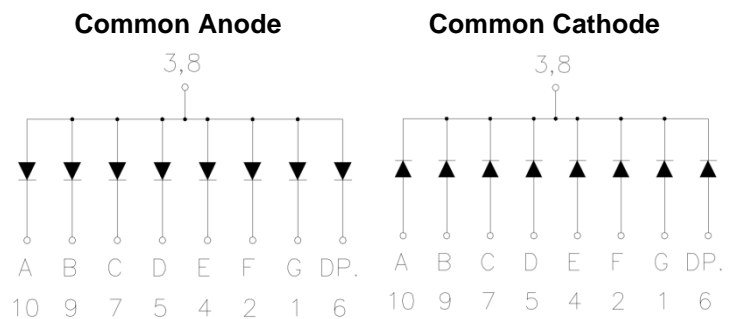


Figure 1. INND-TS39 series Internal Circuit Diagram

Package Dimensions

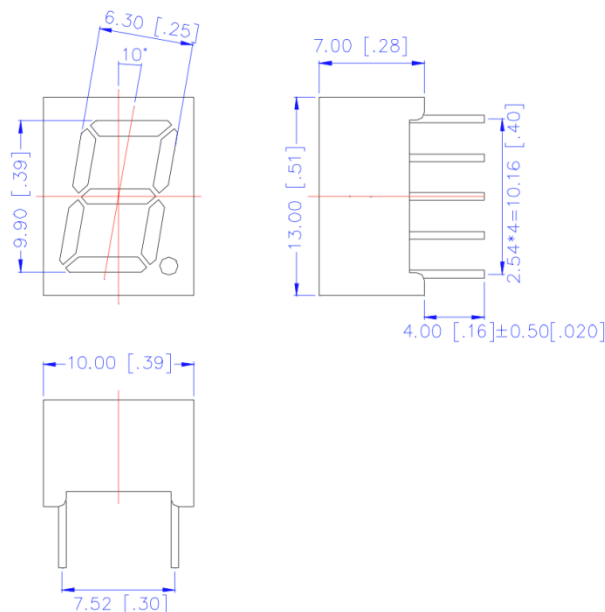
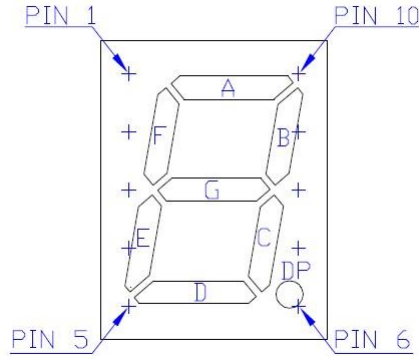


Figure 2. INND-TS39 series Package Dimensions

Notes

1. All pins are $\varnothing 0.51[.020] \pm 0.1[.004]$
2. Dimension in millimeter [inch], tolerance is $\pm 0.25 [0.010]$ 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)	TOP (°C)	TST (°C)
INND-TS39YGXX	Yellow Green	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS39YXX	Yellow	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS39AXX	Amber	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS39RXX	Red	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS39DRXX	Deep Red	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS39GXX	Green	InGaN	114	30	100	5	0.4	-35°C~+85°C	-35°C~+85°C
INND-TS39BXX	Blue	InGaN	114	30	100	5	0.4	-35°C~+85°C	-35°C~+85°C
INND-TS39WXX	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 (V)@20mA			λ(nm)@20mA		I _V (mcd)@10mA			I _R (μA)@V _R =5V	I _{V-M} @I _F =10mA
		min	typ.	max	λ _D	λ _P	min	typ.	max	max	max
INND-TS39YGXX	Yellow Green	-	2.0	2.8	570	572	-	15	-	100	2:1
INND-TS39YXX	Yellow	-	2.0	2.8	590	592	-	40	-	100	2:1
INND-TS39AXX	Amber	-	2.0	2.8	605	612	-	50	-	100	2:1
INND-TS39RXX	Red	-	2.0	2.8	630	644	-	24	-	100	2:1
INND-TS39DRXX	Deep Red	-	2.0	2.8	645	660	-	20	-	100	2:1
INND-TS39GXX	Green	-	3.2	3.8	525	-	-	150	-	100	2:1
INND-TS39BXX	Blue	-	3.2	3.8	465	-	-	13	-	50	2:1
INND-TS39WXX	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).

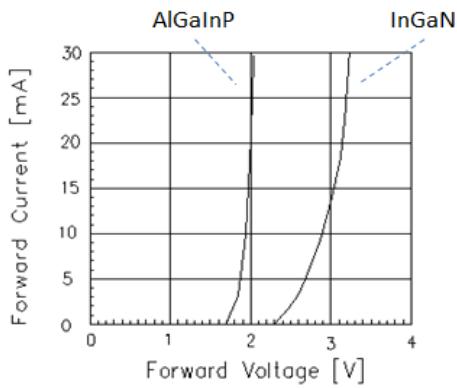
Characteristic Curves for YG, Y, A, R, DR, G


Fig 1. Forward Current vs. Forward Voltage

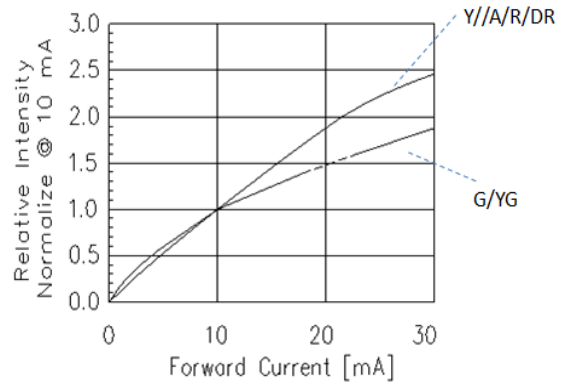


Fig 2. Relative Intensity vs. Forward Current

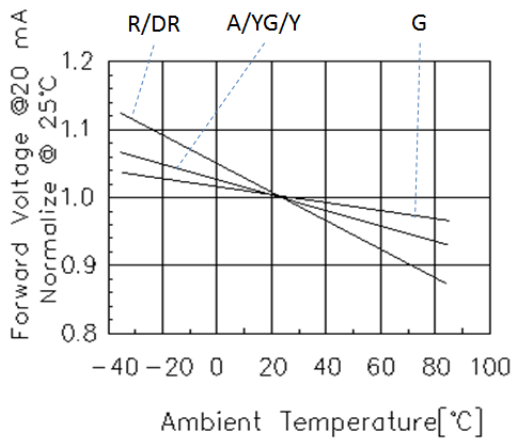


Fig 3. Forward Voltage vs. Temperature

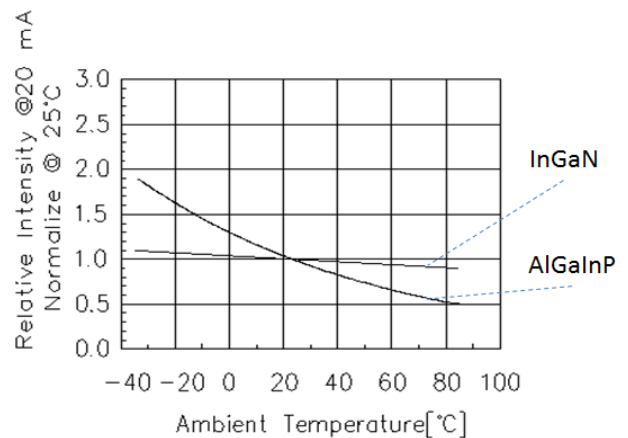


Fig 4. Relative Intensity vs. Temperature

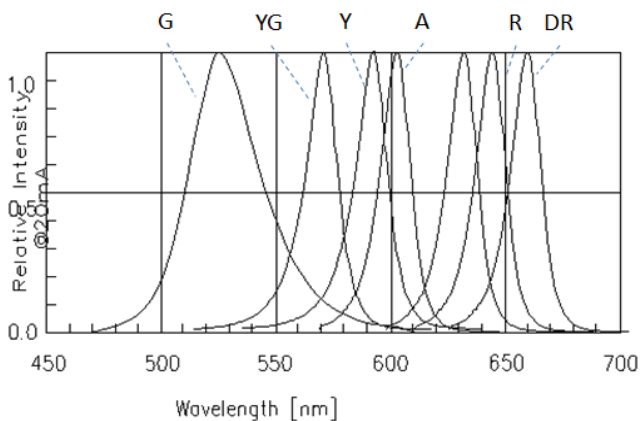


Fig 5. Relative Intensity vs. Wavelength

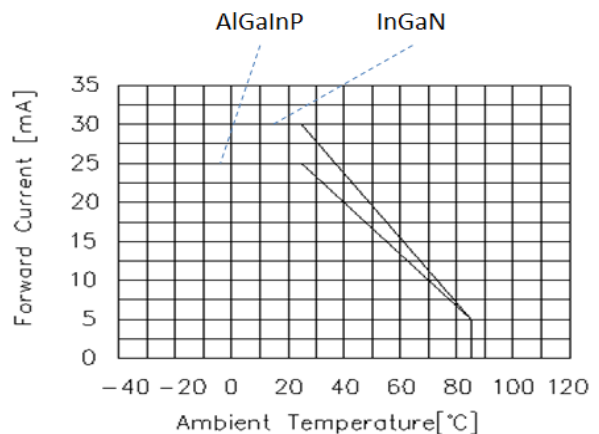


Fig 6. Forward current vs. Temperature

Characteristic Curves for B

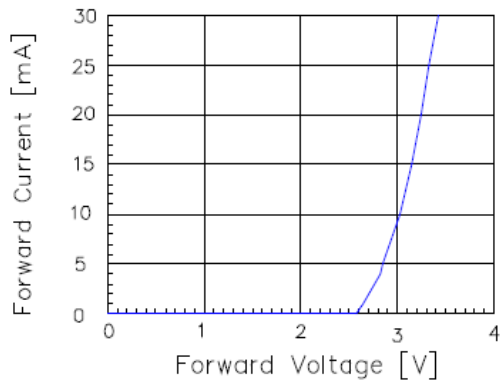


Fig 1. Forward Current vs. Forward Voltage

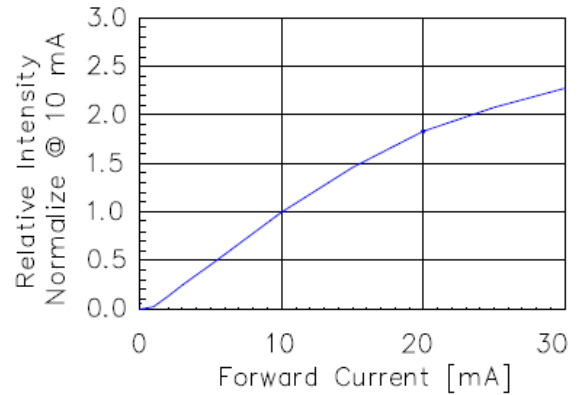


Fig 2. Relative Intensity vs. Forward Current

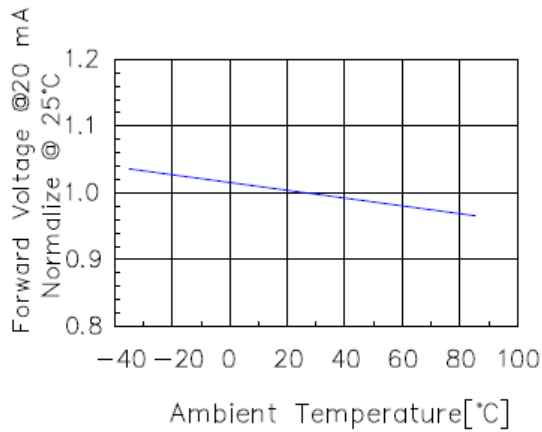


Fig 3. Forward Voltage vs. Temperature

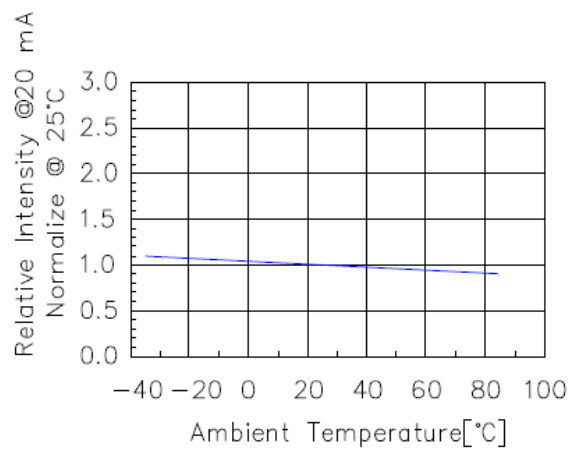


Fig 4. Relative Intensity vs. Temperature

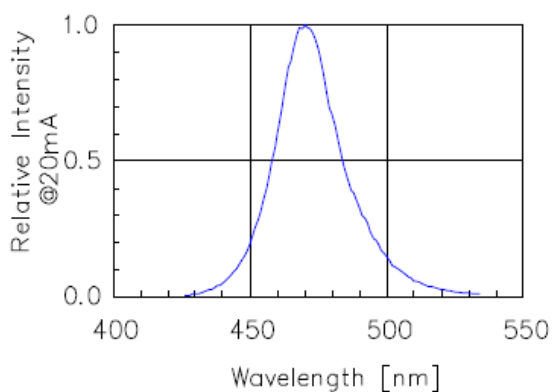


Fig 5. Relative Intensity vs. Wavelength

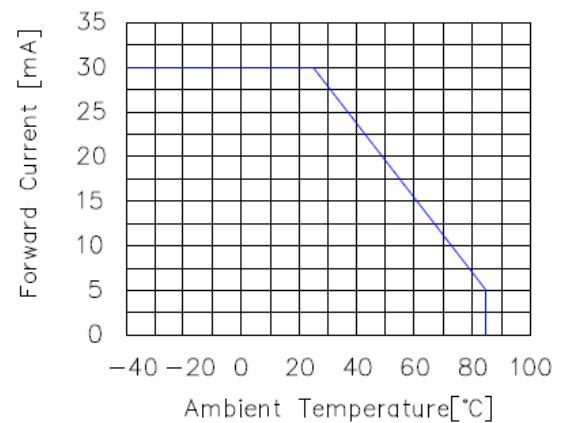


Fig 6. Forward current vs. Temperature

Characteristic Curves for W



Fig 1. Forward Current vs. Forward Voltage

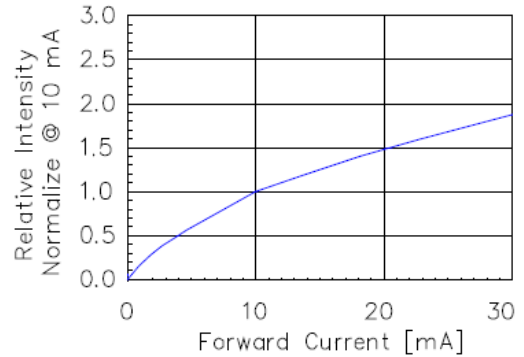


Fig 2. Relative Intensity vs. Forward Current

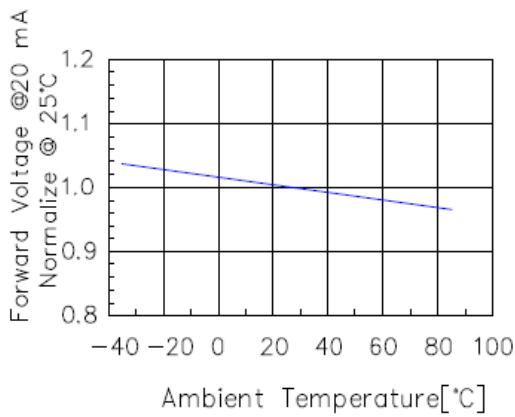


Fig 3. Forward Voltage vs. Temperature

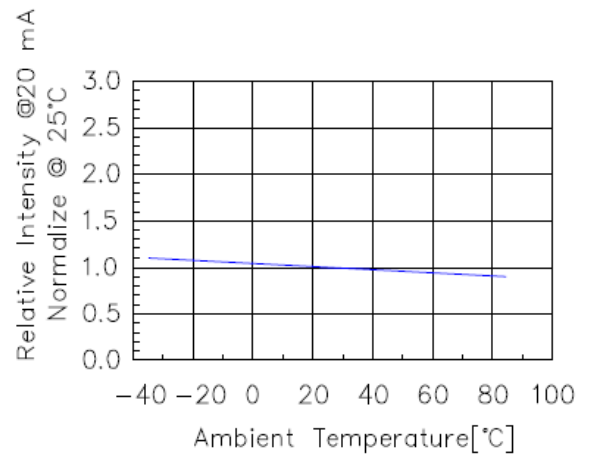


Fig 4. Relative Intensity vs. Temperature

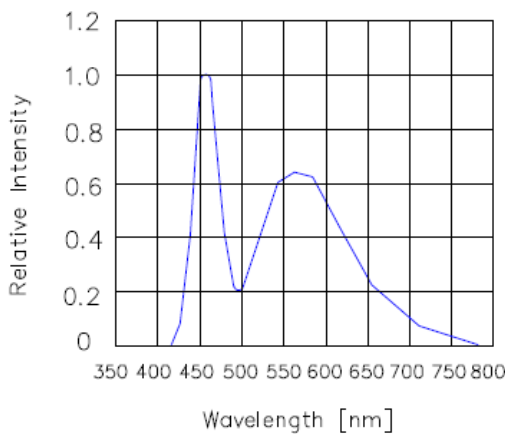


Fig 5. Relative Intensity vs. Wavelength

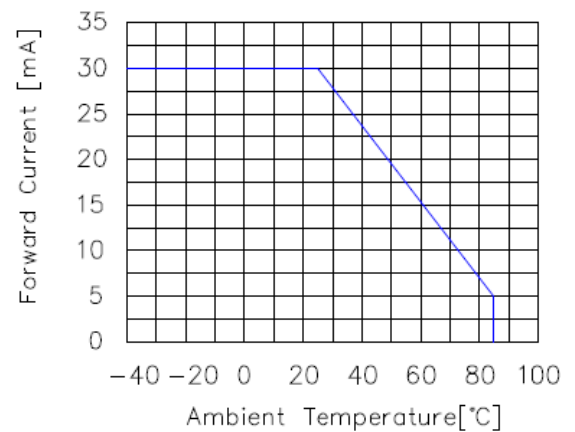
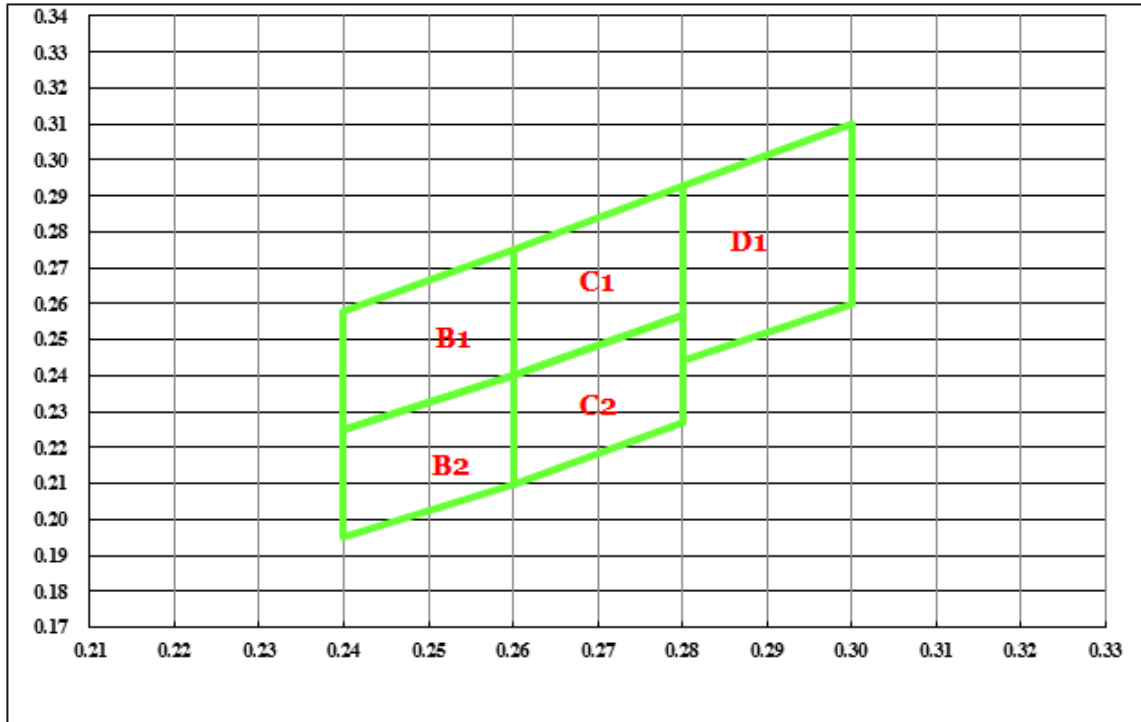


Fig 6. Forward current vs. Temperature

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

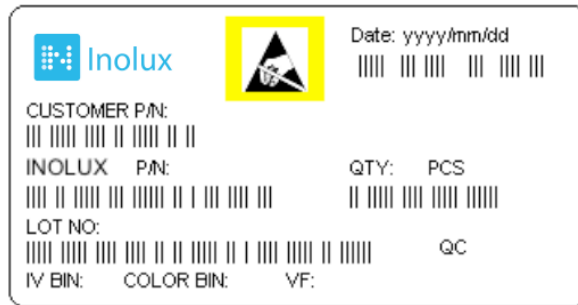
D1				
X	0.280	0.280	0.300	0.300
Y	0.244	0.293	0.310	0.260

Ordering Information

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS39YGXX	Yellow Green	AlGaInP	15	2.0	Common Anode	Black	INND-TS39YGAB
					Common Cathode	Black	INND-TS39YGCB
					Common Anode	Grey	INND-TS39YGAG
					Common Cathode	Grey	INND-TS39YGCG
INND-TS39YXX	Yellow	AlGaInP	40	2.0	Common Anode	Black	INND-TS39YAB
					Common Cathode	Black	INND-TS39YCB
					Common Anode	Grey	INND-TS39YAG
					Common Cathode	Grey	INND-TS39YCG
INND-TS39AXX	Amber	AlGaInP	50	2.0	Common Anode	Black	INND-TS39AAB
					Common Cathode	Black	INND-TS39ACB
					Common Anode	Grey	INND-TS39AAG
					Common Cathode	Grey	INND-TS39ACG
INND-TS39RXX	Red	AlGaInP	24	2.0	Common Anode	Black	INND-TS39RAB
					Common Cathode	Black	INND-TS39RCB
					Common Anode	Grey	INND-TS39RAG
					Common Cathode	Grey	INND-TS39RCG

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS39DRXX	Deep Red	AlGaInP	20	2.0	Common Anode	Black	INND-TS39DRAB
					Common Cathode	Black	INND-TS39DRCB
					Common Anode	Grey	INND-TS39DRAG
					Common Cathode	Grey	INND-TS39DRCG
INND-TS39GXX	Green	InGaN	150	3.2	Common Anode	Black	INND-TS39GAB
					Common Cathode	Black	INND-TS39GCB
					Common Anode	Grey	INND-TS39GAG
					Common Cathode	Grey	INND-TS39GCG
INND-TS39BXX	Blue	InGaN	13	3.2	Common Anode	Black	INND-TS39BAB
					Common Cathode	Black	INND-TS39BCB
					Common Anode	Grey	INND-TS39BAG
					Common Cathode	Grey	INND-TS39BCG
INND-TS39WXX	White	InGaN	50	3.2	Common Anode	Black	INND-TS39WAB
					Common Cathode	Black	INND-TS39WCB
					Common Anode	Grey	INND-TS39WAG
					Common Cathode	Grey	INND-TS39WCG

Label Specifications



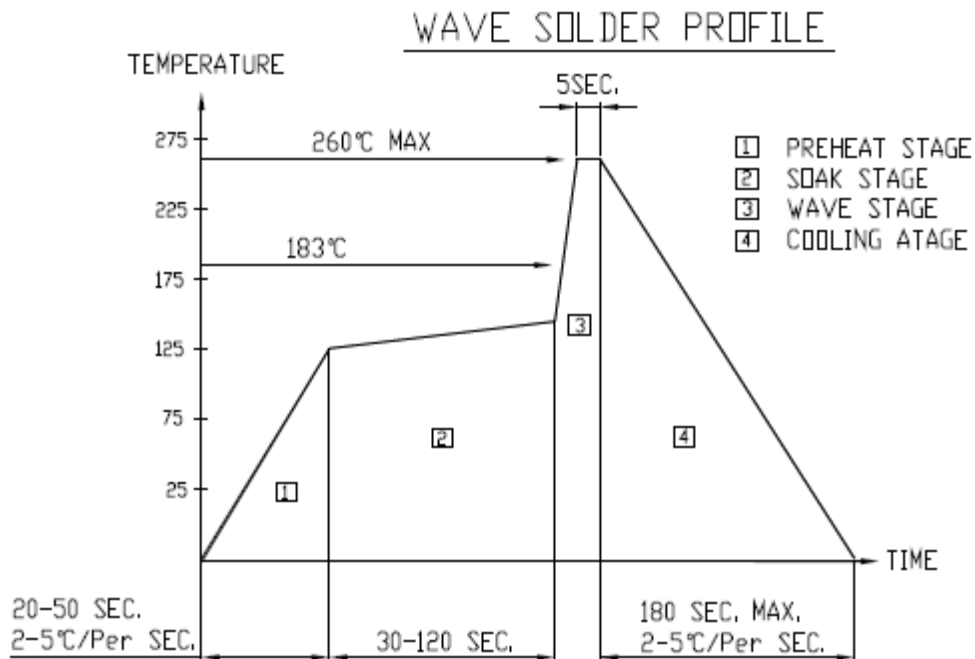
Inolux P/N:

I	N	N	D	-	T	S	3	9	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			39= 0.39" 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 → -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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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.