

Features

- 0.51" (13.0mm) 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-TS51 series is a 0.51" single digit display. It is a through hole type LED display which can be used in various applications.

Internal Circuit Diagram

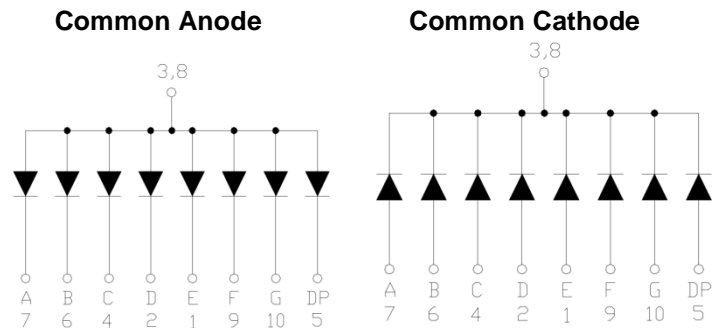


Figure 1. INND-TS51 series Internal Circuit Diagram

Package Dimensions

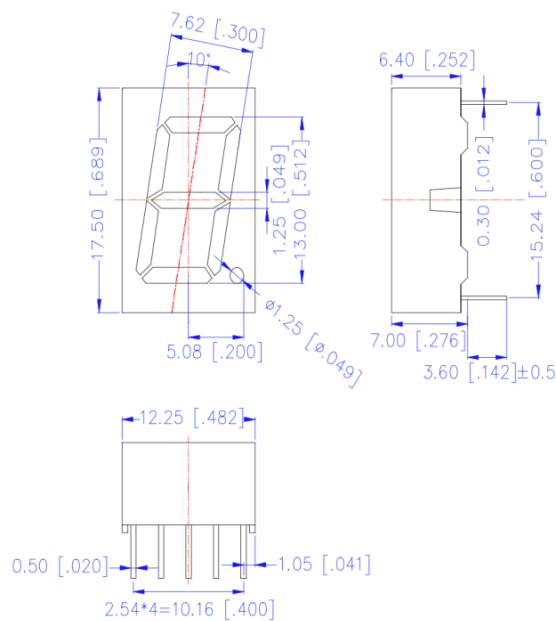
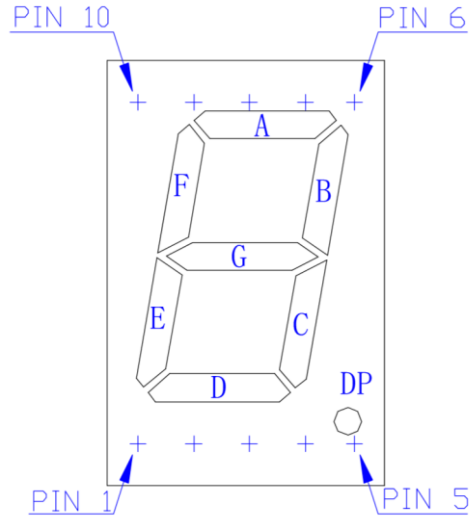


Figure 2. INND-TS51 series Package Dimensions

Notes

1. All pins are 0.50*0.3±0.1[.004]
2. Dimension in millimeter [inch], tolerance is ±0.25 [.010] and angle is ±1° unless otherwise noted.
3. Bending≤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-TS51YGXX	Yellow Green	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS51YXX	Yellow	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS51AXX	Amber	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS51RXX	Red	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS51DRXX	Deep Red	AlGaInP	70	25	90	5	0.33	-35°C~+85°C	-35°C~+85°C
INND-TS51GXX	Green	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	$V_F(\text{V})@20\text{mA}$			$\lambda(\text{nm})@20\text{mA}$		$I_V(\text{mcd})@10\text{mA}$			$I_R(\mu\text{A})@V_R=5\text{V}$	$I_{V-M}@I_F=10\text{mA}$
		min	typ.	max	λ_D	λ_P	min	typ.	max	max	max
INND-TS51YGXX	Yellow Green	-	2.0	2.8	570	572	-	9	-	100	2:1
INND-TS51YXX	Yellow	-	2.0	2.8	590	592	-	40	-	100	2:1
INND-TS51AXX	Amber	-	2.0	2.8	605	612	-	58	-	100	2:1
INND-TS51RXX	Red	-	2.0	2.8	630	644	-	20	-	100	2:1
INND-TS51DRXX	Deep Red	-	2.0	2.8	645	660	-	15	-	100	2:1
INND-TS51GXX	Green	-	3.2	3.8	525	-	-	218	-	100	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).

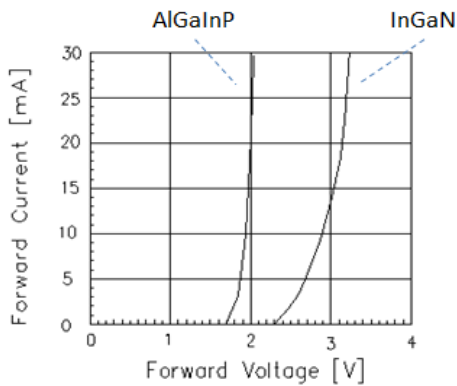
Characteristic Curves for YG, Y, A, R, DR, G


Fig 1. Forward Current vs. Forward Voltage

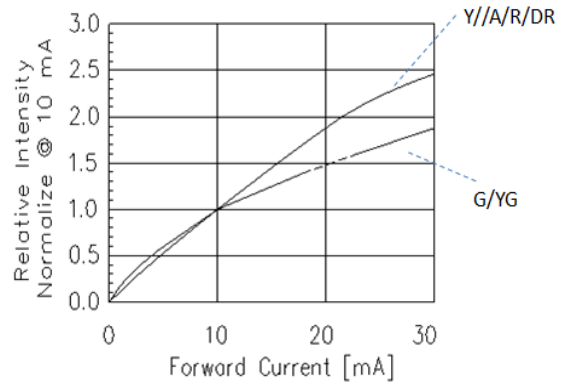


Fig 2. Relative Intensity vs. Forward Current

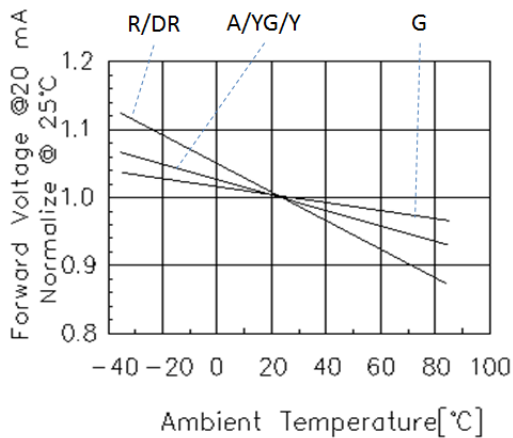


Fig 3. Forward Voltage vs. Temperature

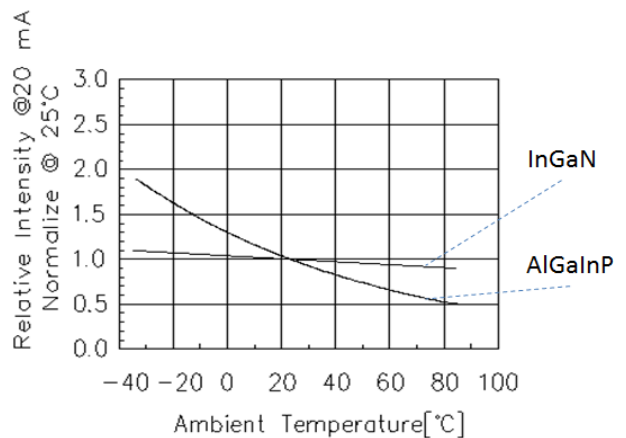


Fig 4. Relative Intensity vs. Temperature

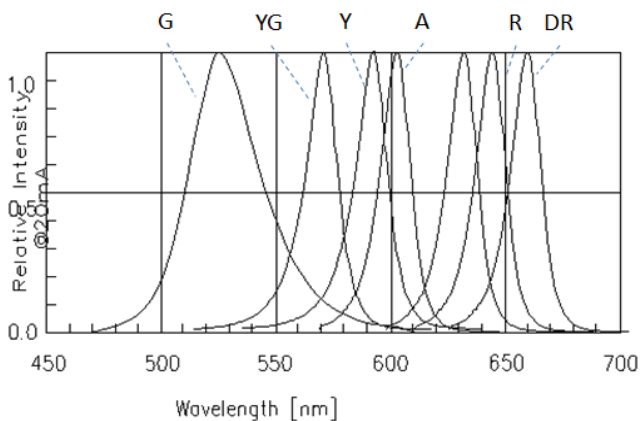


Fig 5. Relative Intensity vs. Wavelength

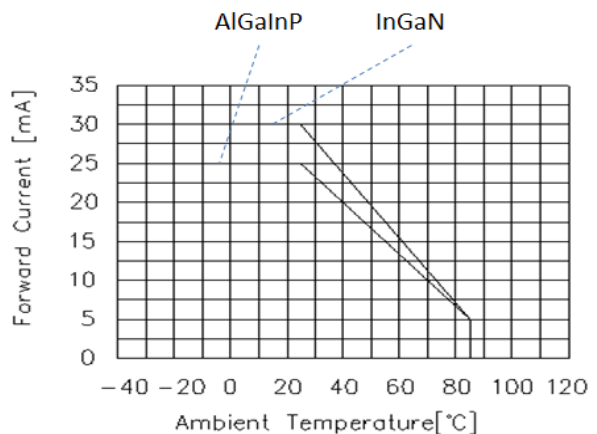


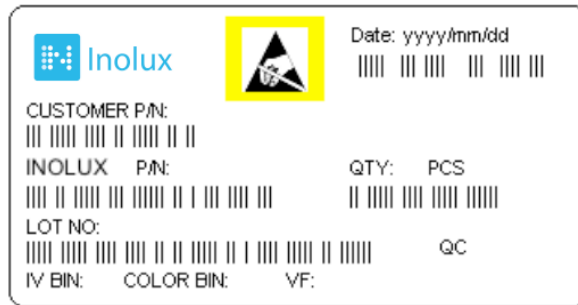
Fig 6. Forward current vs. Temperature

Ordering Information

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS51YGXX	Yellow Green	AlGaInP	9	2.0	Common Anode	Black	INND-TS51YGAB
					Common Cathode	Black	INND-TS51YGCB
					Common Anode	Grey	INND-TS51YGAG
					Common Cathode	Grey	INND-TS51YGCG
INND-TS51YXX	Yellow	AlGaInP	40	2.0	Common Anode	Black	INND-TS51YAB
					Common Cathode	Black	INND-TS51YCB
					Common Anode	Grey	INND-TS51YAG
					Common Cathode	Grey	INND-TS51YCG
INND-TS51AXX	Amber	AlGaInP	58	2.0	Common Anode	Black	INND-TS51AAB
					Common Cathode	Black	INND-TS51ACB
					Common Anode	Grey	INND-TS51AAG
					Common Cathode	Grey	INND-TS51ACG
INND-TS51RXX	Red	AlGaInP	20	2.0	Common Anode	Black	INND-TS51RAB
					Common Cathode	Black	INND-TS51RCB
					Common Anode	Grey	INND-TS51RAG
					Common Cathode	Grey	INND-TS51RCG

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS51DRXX	Deep Red	AlGaInP	15	2.0	Common Anode	Black	INND-TS51DRAB
					Common Cathode	Black	INND-TS51DRCB
					Common Anode	Grey	INND-TS51DRAG
					Common Cathode	Grey	INND-TS51DRCG
INND-TS51GXX	Green	InGaN	218	3.2	Common Anode	Black	INND-TS51GAB
					Common Cathode	Black	INND-TS51GCB
					Common Anode	Grey	INND-TS51GAG
					Common Cathode	Grey	INND-TS51GCC

Label Specifications



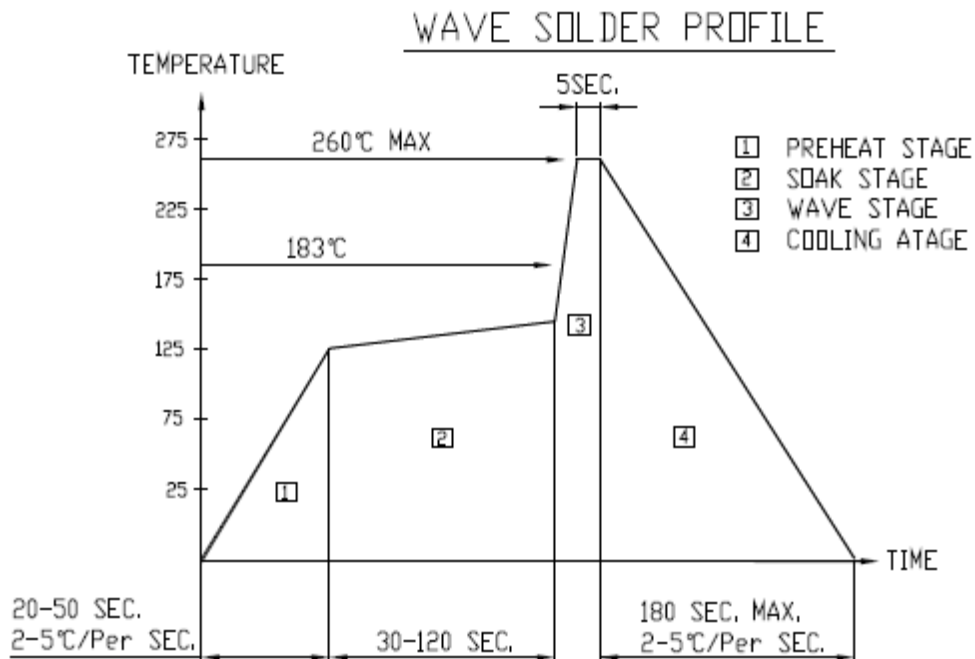
Inolux P/N:

I	N	N	D	-	T	S	5	1	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	51= 0.51" Display Height	YG: 570 nm Y: 590 nm A: 605 nm R: 624 nm DR: 660 nm G: 520 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 ≤ 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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