Features

- 0.52” (13.20mm) 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-TS52 series is a 0.52” single digit display. It is a through hole type LED display which can be used in various applications.

Internal Circuit Diagram

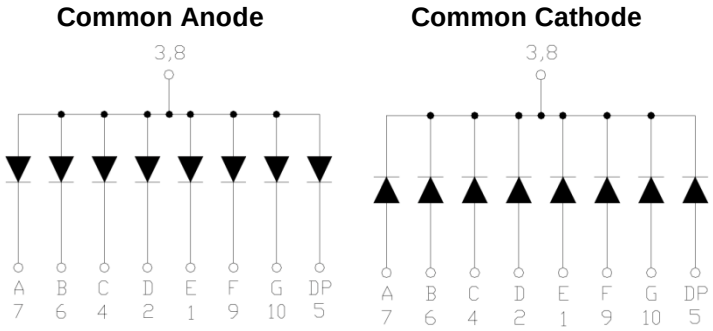


Figure 1. INND-TS52 series Internal Circuit Diagram

Package Dimensions

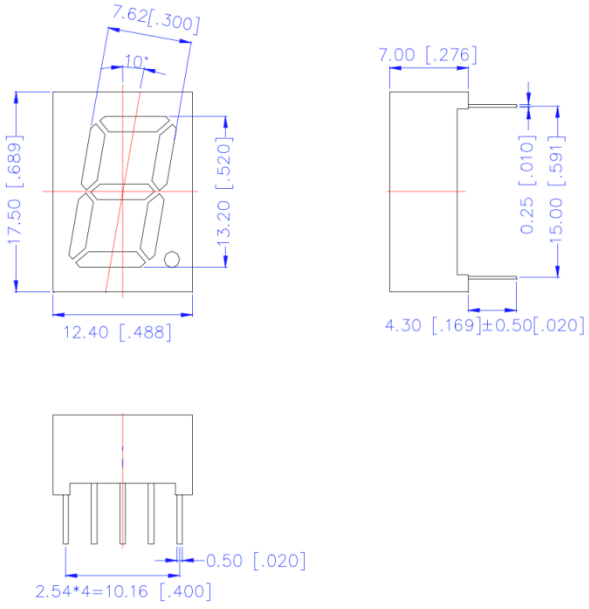
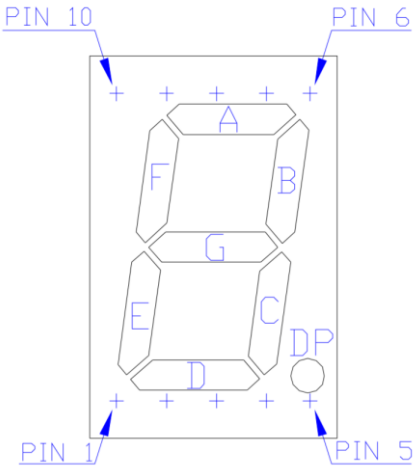


Figure 2. INND-TS52 series Package Dimensions

Notes

1. All pins are 0.50*0.3
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 25ºC (Note 1)

Product (Per Segment)	Emission Color	Technology	Pd (mW)	IF (mA)	IFP* (mA)	VR (V)	Derate From 25°C (mA/°C)	T_{OP} (ºC)	T_{ST} (ºC)
INND-TS52YGXX	Yellow Green	AlGaInP	70	25	90	5	0.33	-35ºC~+85ºC	-35ºC~+85ºC
INND-TS52YXX	Yellow	AlGaInP	70	25	90	5	0.33	-35ºC~+85ºC	-35ºC~+85ºC
INND-TS52AXX	Amber	AlGaInP	70	25	90	5	0.33	-35ºC~+85ºC	-35ºC~+85ºC
INND-TS52RXX	Red	AlGaInP	70	25	90	5	0.33	-35ºC~+85ºC	-35ºC~+85ºC
INND-TS52DRXX	Deep Red	AlGaInP	70	25	90	5	0.33	-35ºC~+85ºC	-35ºC~+85ºC
INND-TS52GXX	Green	InGaN	114	30	100	5	0.4	-35ºC~+85ºC	-35ºC~+85ºC
INND-TS52BXX	Blue	InGaN	114	30	100	5	0.4	-35ºC~+85ºC	-35ºC~+85ºC
INND-TS52WXX	White	InGaN	114	30	100	5	0.4	-35ºC~+85ºC	-35ºC~+85ºC

Notes

1. Condition for IFP is pulse of 1/10 duty and 0.1msec width

Electrical Characteristics T_A = 25℃ (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-TS52YGXX	Yellow Green	-	2.0	2.8	570	572	-	15	-	100	2:1
INND-TS52YXX	Yellow	-	2.0	2.8	590	592	-	50	-	100	2:1
INND-TS52AXX	Amber	-	2.0	2.8	605	612	-	70	-	100	2:1
INND-TS52RXX	Red	-	2.0	2.8	630	644	-	30	-	100	2:1
INND-TS52DRXX	Deep Red	-	2.0	2.8	645	660	-	25	-	100	2:1
INND-TS52GXX	Green	-	3.2	3.8	525	-	-	218	-	100	2:1
INND-TS52BXX	Blue	-	3.2	3.8	465	-	-	18	-	50	2:1
INND-TS52WXX	White	-	3.2	3.8	X: 0.27 Y: 0.25	-	-	120	-	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

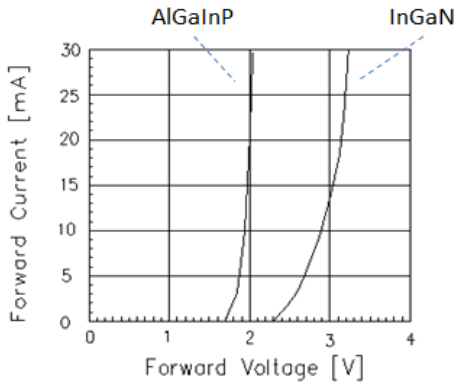


Fig 1. Forward Current vs. Forward Voltage

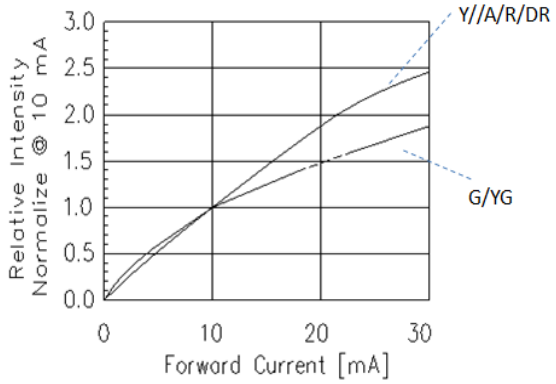


Fig 2. Relative Intensity vs. Forward Current

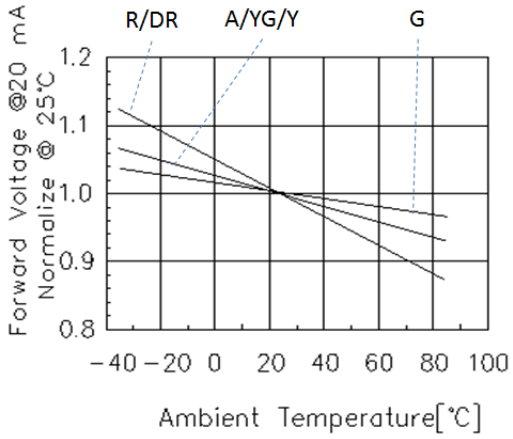


Fig 3. Forward Voltage vs. Temperature

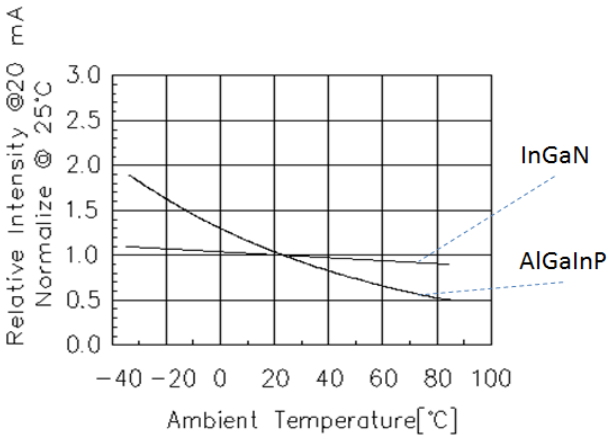


Fig 4. Relative Intensity vs. Temperature

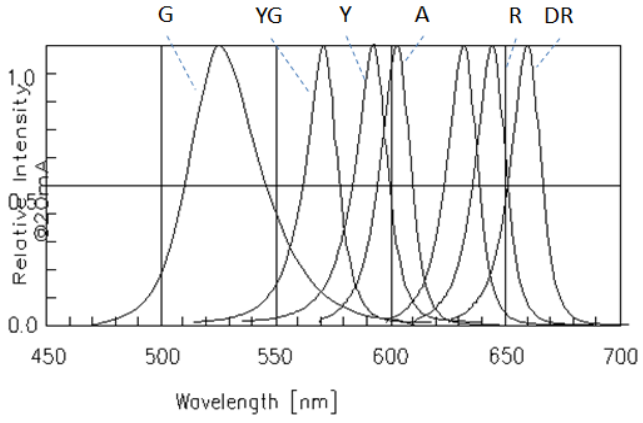


Fig 5. Relative Intensity vs. Wavelength

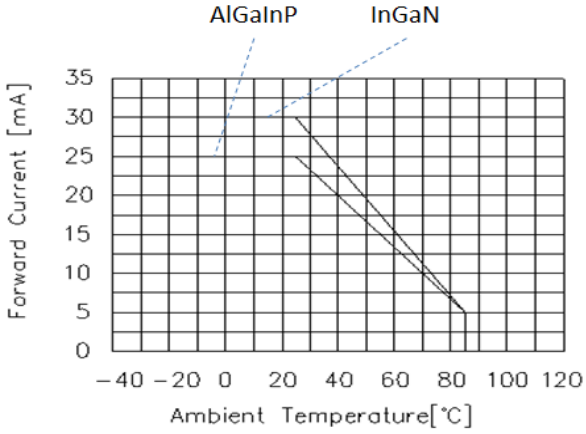


Fig 6. Forward current vs. Temperature

Characteristic Curves for B

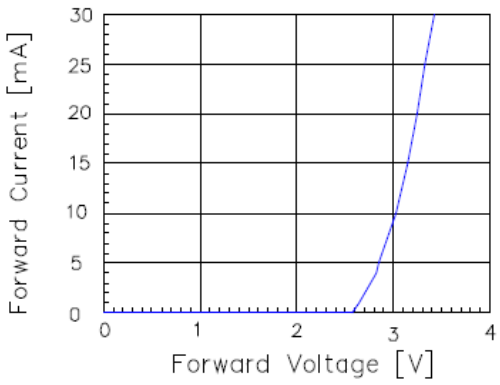


Fig 1. Forward Current vs. Forward Voltage

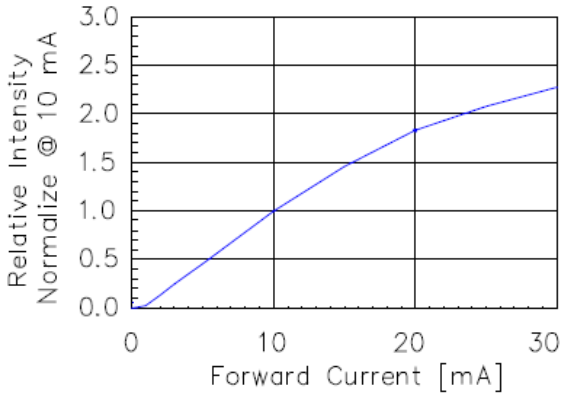


Fig 2. Relative Intensity vs. Forward Current

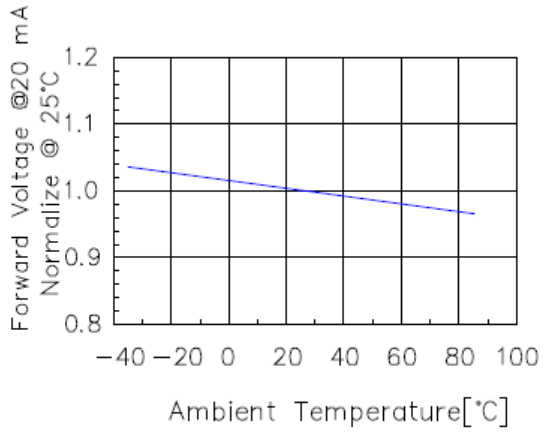


Fig 3. Forward Voltage vs. Temperature

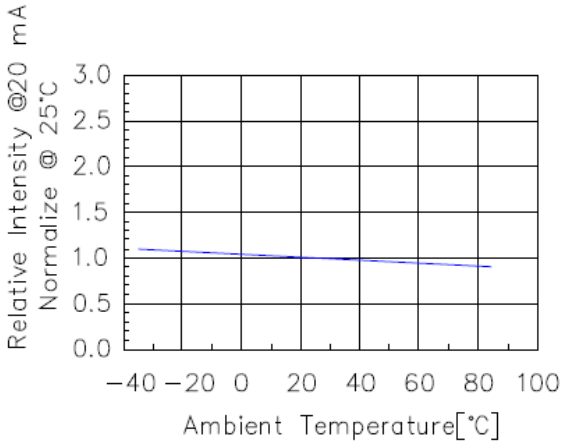


Fig 4. Relative Intensity vs. Temperature

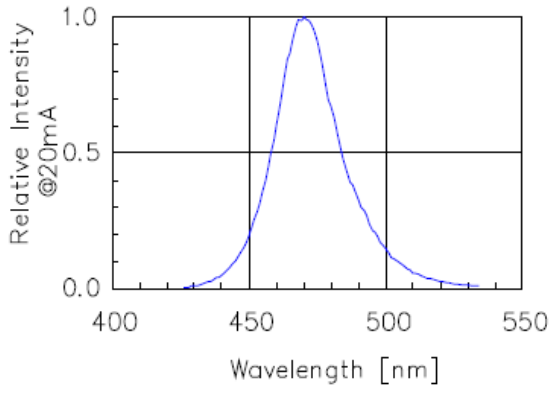


Fig 5. Relative Intensity vs. Wavelength

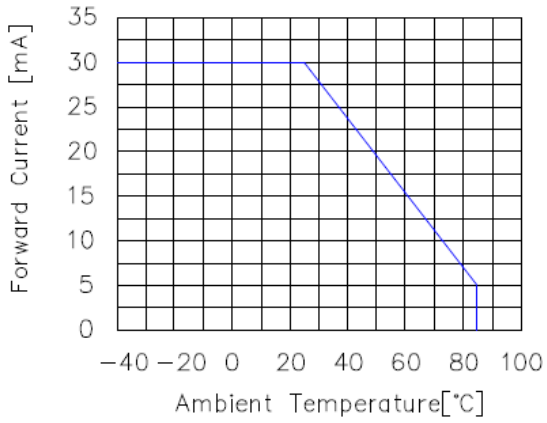


Fig 6. Forward current vs. Temperature

Characteristic Curves for W

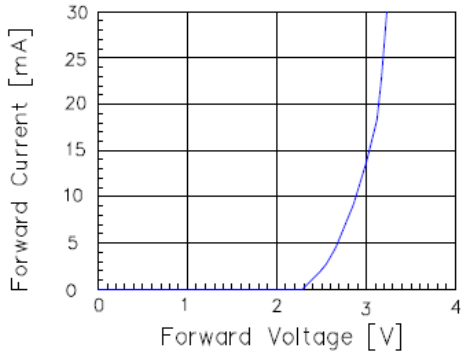


Fig 1. Forward Current vs. Forward Voltage

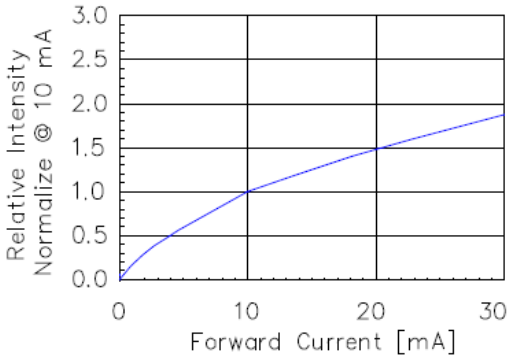


Fig 2. Relative Intensity vs. Forward Current

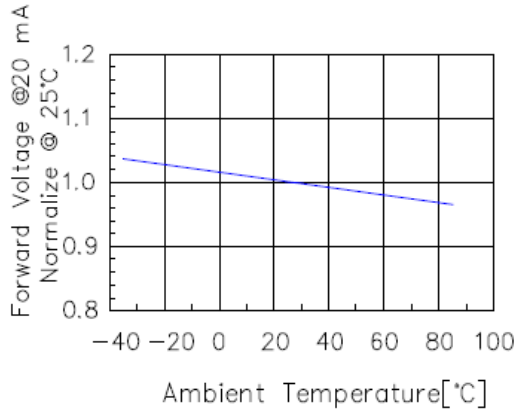


Fig 3. Forward Voltage vs. Temperature

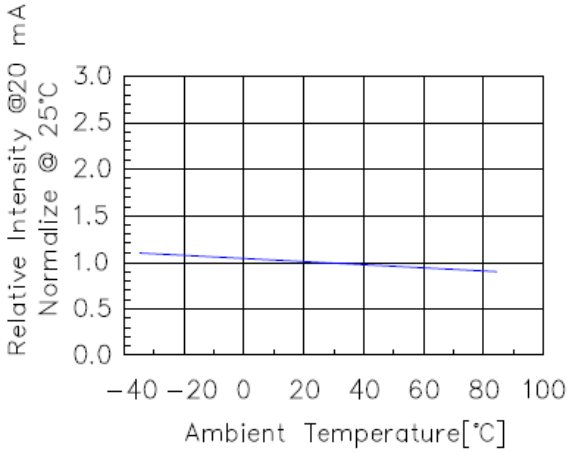


Fig 4. Relative Intensity vs. Temperature

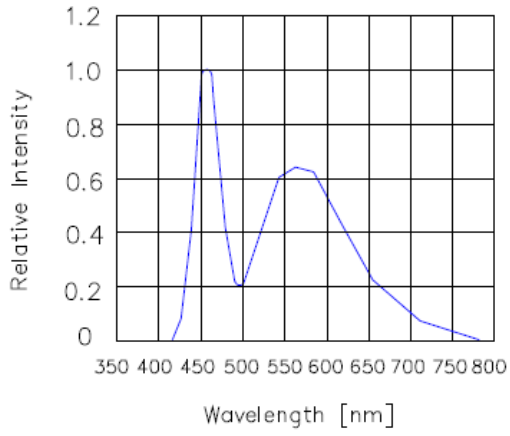


Fig 5. Relative Intensity vs. Wavelength

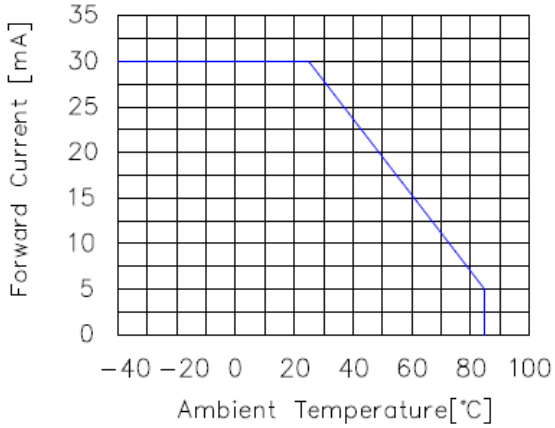
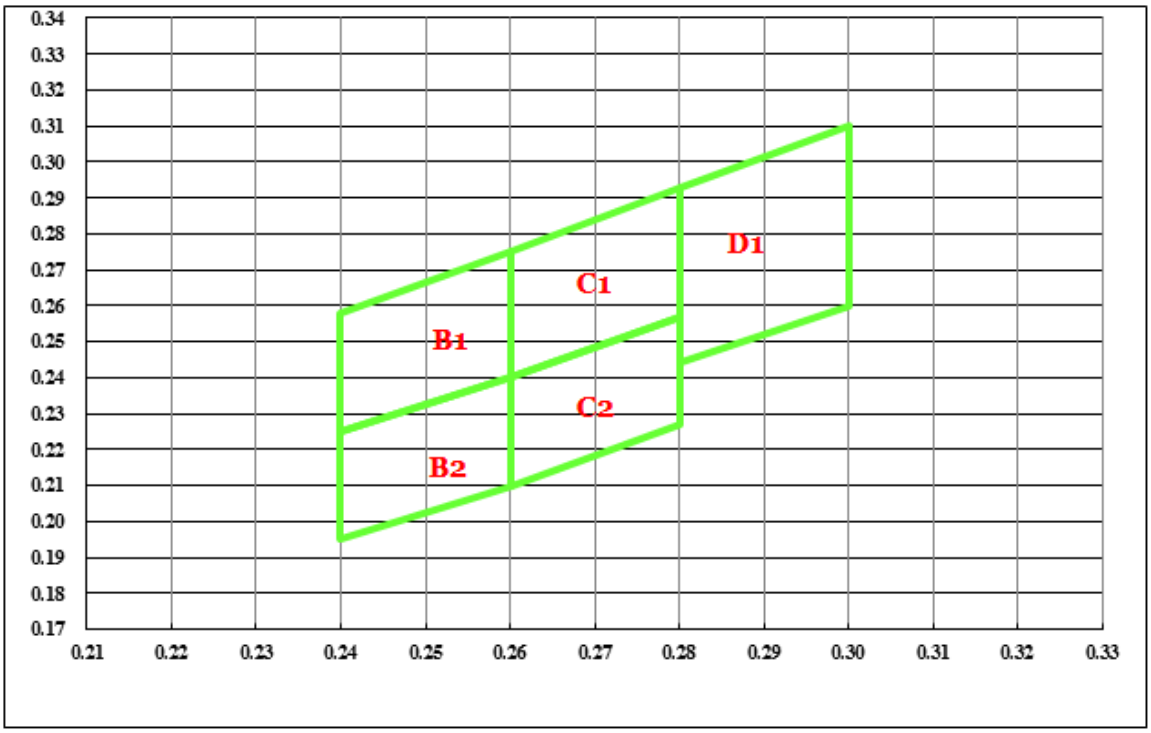


Fig 6. Forward current vs. Temperature

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

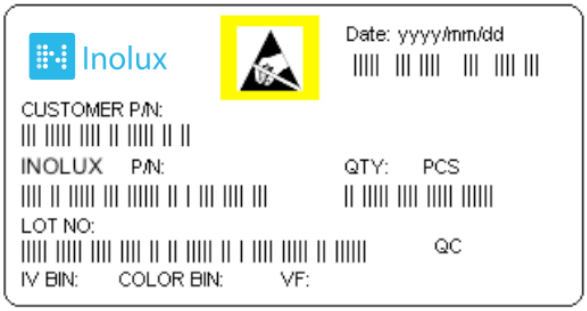
D1				
X	0.280	0.280	0.300	0.300
Y	0.244	0.293	0.310	0.260

Ordering Information

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS52YGXX	Yellow Green	AlGaInP	15	2.0	Common Anode	Black	INND-TS52YGAB
					Common Cathode	Black	INND-TS52YGCB
					Common Anode	Grey	INND-TS52YGAG
					Common Cathode	Grey	INND-TS52YGCG
INND-TS52YXX	Yellow	AlGaInP	50	2.0	Common Anode	Black	INND-TS52YAB
					Common Cathode	Black	INND-TS52YCB
					Common Anode	Grey	INND-TS52YAG
					Common Cathode	Grey	INND-TS52YCG
INND-TS52AXX	Amber	AlGaInP	70	2.0	Common Anode	Black	INND-TS52AAB
					Common Cathode	Black	INND-TS52ACB
					Common Anode	Grey	INND-TS52AAG
					Common Cathode	Grey	INND-TS52ACG
INND-TS52RXX	Red	AlGaInP	30	2.0	Common Anode	Black	INND-TS52RAB
					Common Cathode	Black	INND-TS52RCB
					Common Anode	Grey	INND-TS52RAG
					Common Cathode	Grey	INND-TS52RCG

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-TS52DRXX	Deep Red	AlGaInP	25	2.0	Common Anode	Black	INND-TS52DRAB
					Common Cathode	Black	INND-TS52DRCB
					Common Anode	Grey	INND-TS52DRAG
					Common Cathode	Grey	INND-TS52DRCG
INND-TS52GXX	Green	InGaN	218	3.2	Common Anode	Black	INND-TS52GAB
					Common Cathode	Black	INND-TS52GCB
					Common Anode	Grey	INND-TS52GAG
					Common Cathode	Grey	INND-TS52GCG
INND-TS52BXX	Blue	InGaN	18	3.2	Common Anode	Black	INND-TS52BAB
					Common Cathode	Black	INND-TS52BCB
					Common Anode	Grey	INND-TS52BAG
					Common Cathode	Grey	INND-TS52BCG
INND-TS52WXX	White	InGaN	120	3.2	Common Anode	Black	INND-TS52WAB
					Common Cathode	Black	INND-TS52WCB
					Common Anode	Grey	INND-TS52WAG
					Common Cathode	Grey	INND-TS52WCG

Label Specifications



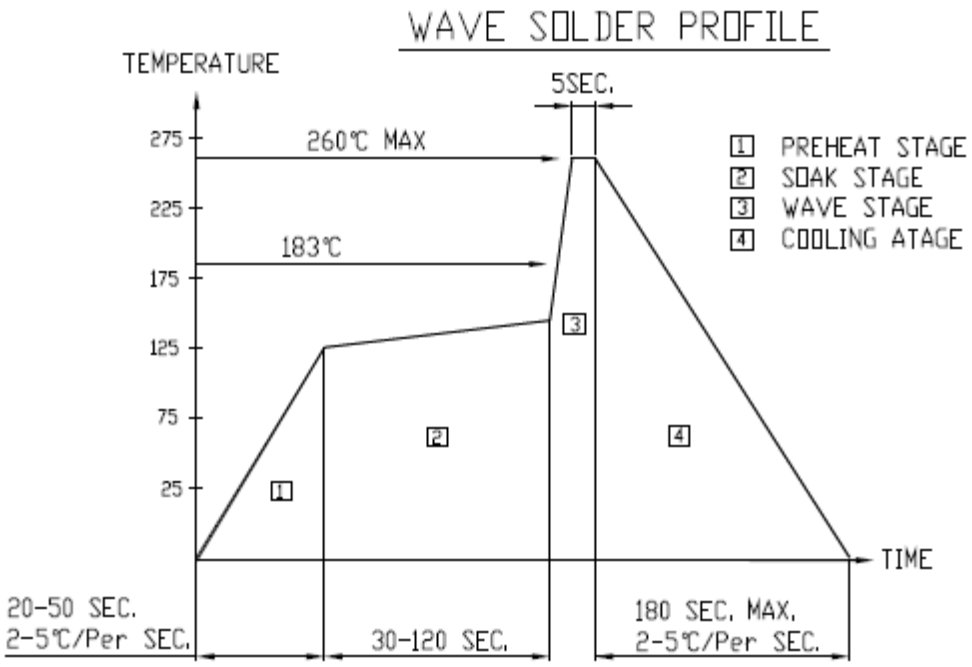
Inolux P/N:

I	N	N	D	-	T	S	5	2	X	X	X	-	X	X	X	X
		Display Type			Display Type		Dimension		Color	Polarity	Face Color		Customized Stamp-off			
Inolux		ND = Numeric Display			T: Through hole S: Single		52= 0.52” 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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