

Features

- 0.56" (14.2mm) Digit Height
- Triple Digit Display
- Black/Grey Face , White Segment
- IC compatible, Easy assembly
- Dynamic drive connect
- RoHS Compliant, Pb Free

Description

The INND-ST56 series is a 0.56" triple digit display. It is a SMD type LED display which can be used in various applications.

Applications

- Consumer Electronics
- Industrial Equipment

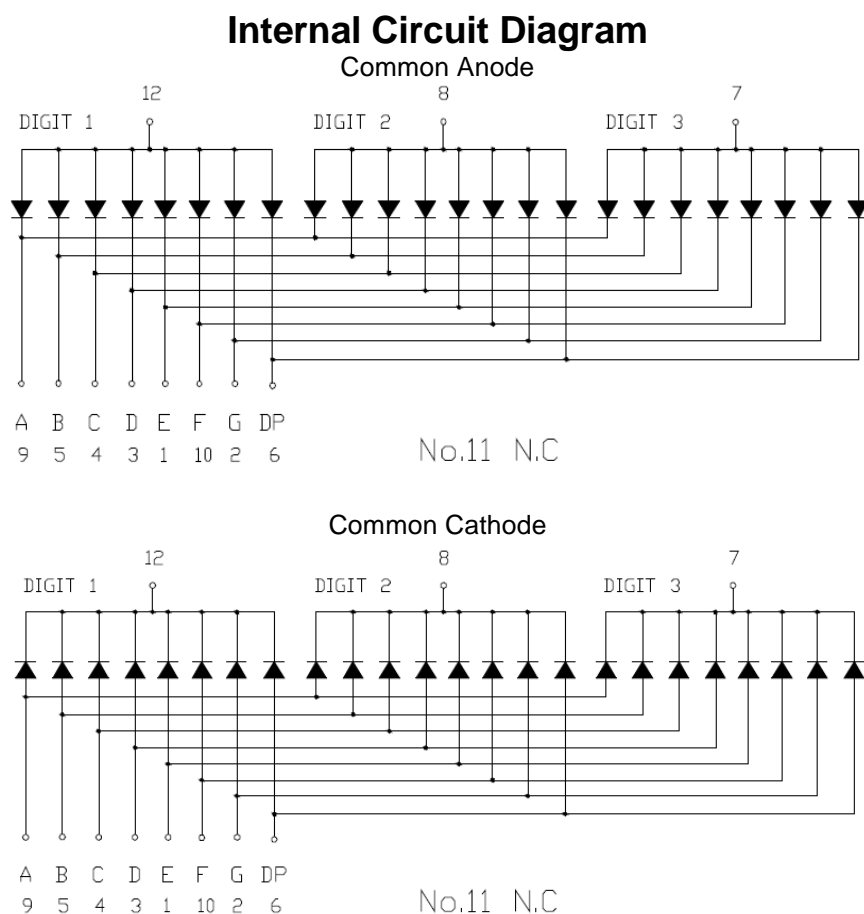


Figure 1. INND-ST56 series Internal Circuit Diagram

Package Dimensions

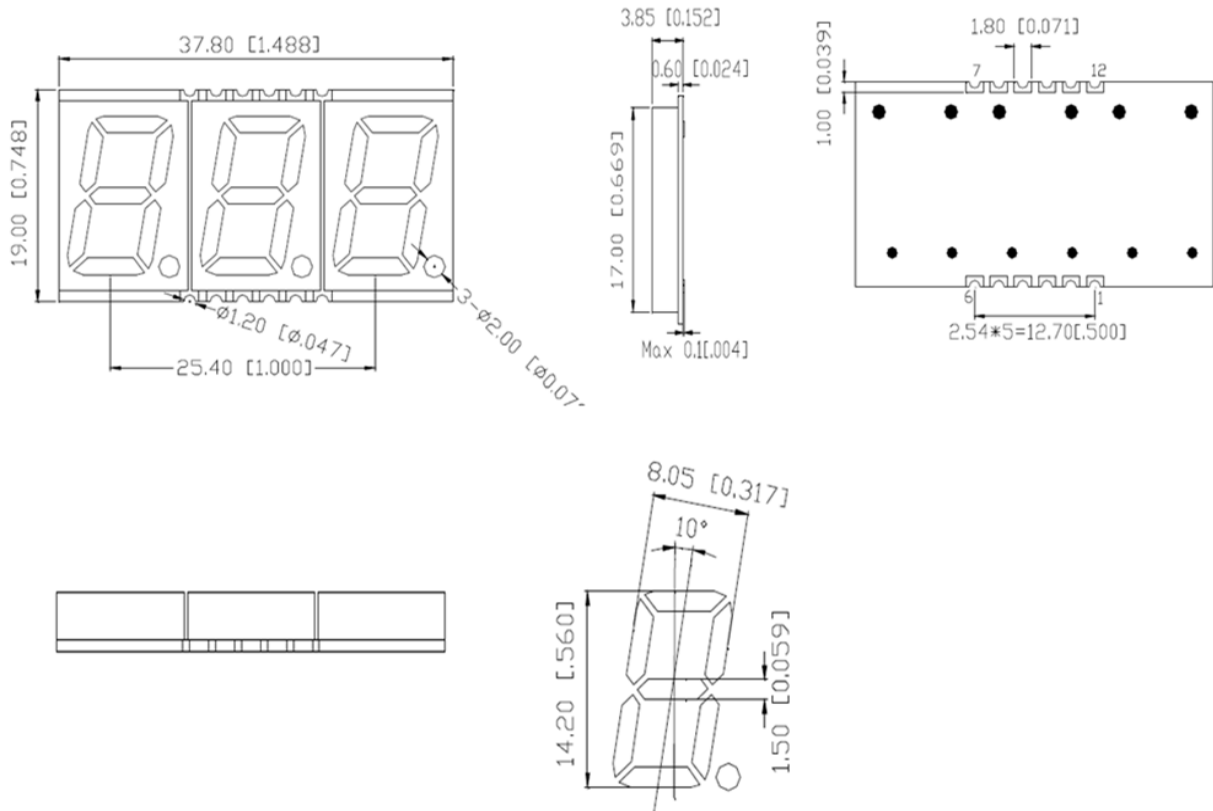


Figure 2. INND-ST56 series Package Dimensions

Notes

1. Dimension in millimeter [inch], tolerance is ± 0.25 [0.010] and angle is $\pm 1^\circ$ unless otherwise noted.
2. Bending \leq Length * 1%

All Light On Segments Feature & Pin Position

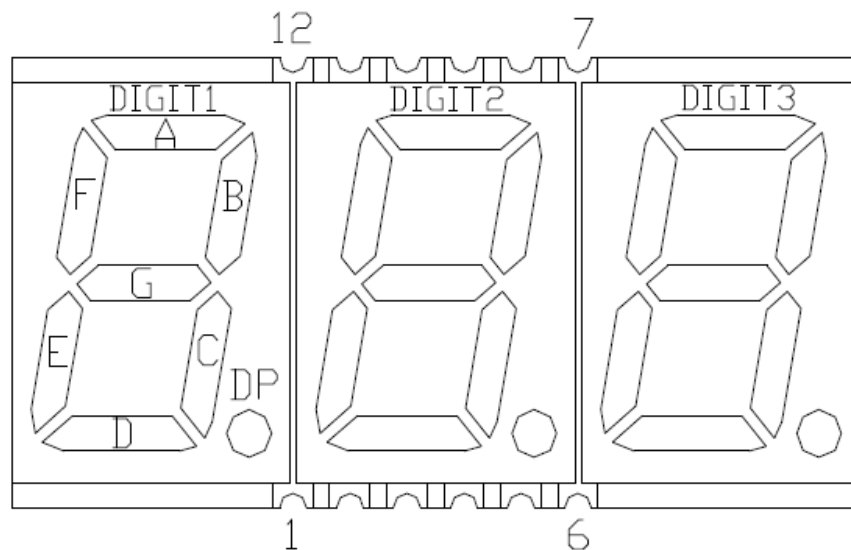


Figure 3. All Light On Segments Feature & Pin Position

Absolute Maximum Rating at 25°C (Note 1)

Product (Per Segment)	Emission Color	Technology	P _d (mW)	I _F (mA)	I _{FP} * (mA)	V _R (V)	Derate From 25°C (mA/°C)	T _{OP} (°C)	T _{ST} (°C)
INND-ST56YGXX	Yellow Green	AlGaInP	70	25	90	5	0.33	-40 °C~+105 °C	-40 °C~+105 °C
INND-ST56YXX	Yellow	AlGaInP	70	25	90	5	0.33	-40 °C~+105 °C	-40 °C~+105 °C
INND-ST56AXX	Amber	AlGaInP	70	25	90	5	0.33	-40 °C~+105 °C	-40 °C~+105 °C
INND-ST56RXX	Red	AlGaInP	70	25	90	5	0.33	-40 °C~+105 °C	-40 °C~+105 °C
INND-ST56DRXX	Deep Red	AlGaInP	70	25	90	5	0.33	-40 °C~+105 °C	-40 °C~+105 °C
INND-ST56GXX	Green	InGaN	114	30	100	5	0.4	-40 °C~+105 °C	-40 °C~+105 °C
INND-ST56BXX	Blue	InGaN	114	30	100	5	0.4	-40 °C~+105 °C	-40 °C~+105 °C
INND-ST56WXX	White	InGaN	114	30	100	5	0.4	-40 °C~+105 °C	-40 °C~+105 °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	VF(V)@20mA			λ (nm)@10mA		I*V(mcd)@10mA			IR(μ A)@VR=5V	IV-M @IF =10mA
		min	typ.	max	λ D	λ P	min	typ.	max	max	max
INND-ST56YGXX	Yellow Green	-	2.0	2.8	570	572	-	3	-	100	2:1
INND-ST56YXX	Yellow	-	2.0	2.8	590	592	-	17	-	100	2:1
INND-ST56AXX	Amber	-	2.0	2.8	605	612	-	18	-	100	2:1
INND-ST56RXX	Red	-	2.0	2.8	630	644	-	9	-	100	2:1
INND-ST56DRXX	Deep Red	-	2.0	2.8	645	660	-	8	-	100	2:1
INND-ST56GXX	Green	-	3.2	3.8	525	-	-	70	-	100	2:1
INND-ST56BXX	Blue	-	3.2	3.8	465	-	-	12	-	50	2:1
INND-ST56WXX	White	-	3.2	3.8	X: 0.27 Y: 0.25	-	-	60	-	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).

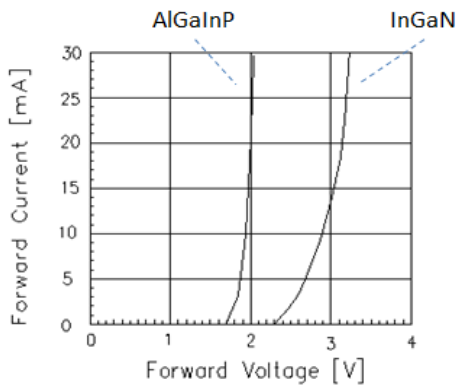
Characteristic Curves for YG, Y, A, R, DR, G


Fig 1. Forward Current vs. Forward Voltage

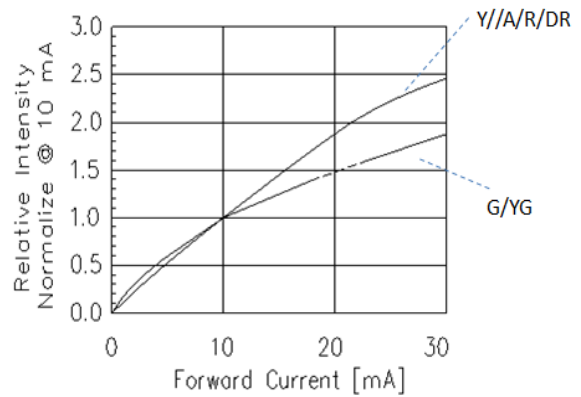


Fig 2. Relative Intensity vs. Forward Current

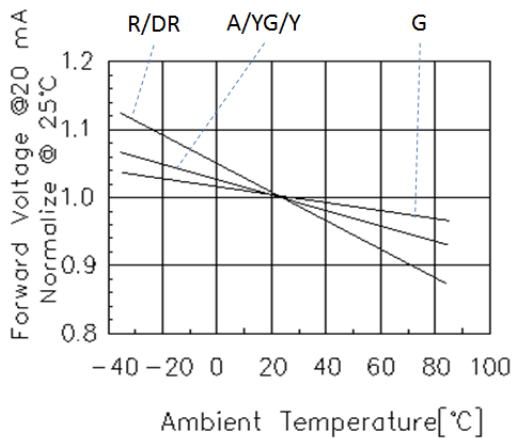


Fig 3. Forward Voltage vs. Temperature

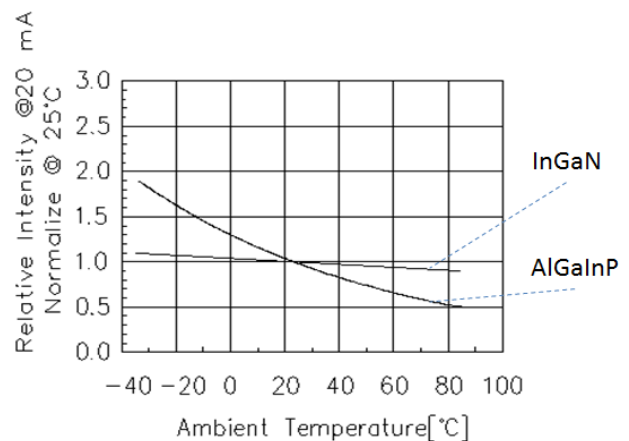


Fig 4. Relative Intensity vs. Temperature

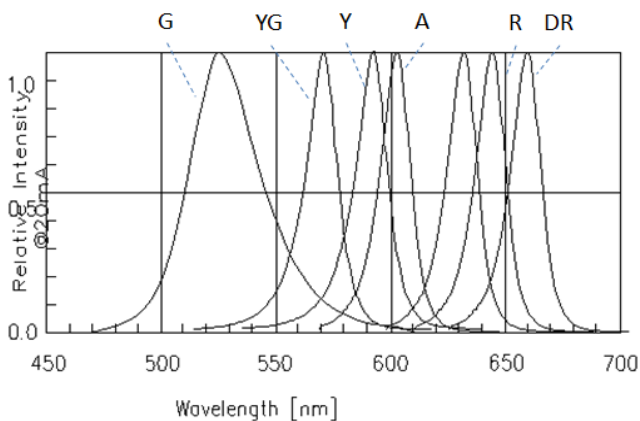


Fig 5. Relative Intensity vs. Wavelength

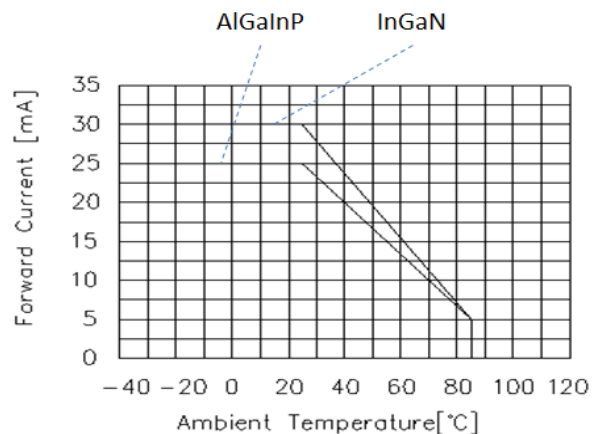


Fig 6. Forward current vs. Temperature

Characteristic Curves for B

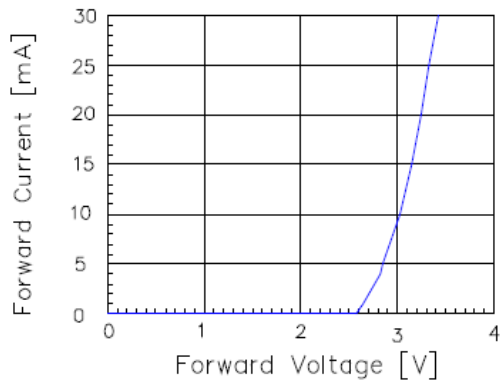


Fig 1. Forward Current vs. Forward Voltage

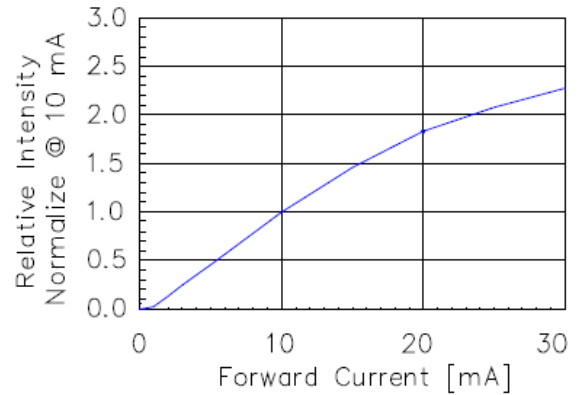


Fig 2. Relative Intensity vs. Forward Current

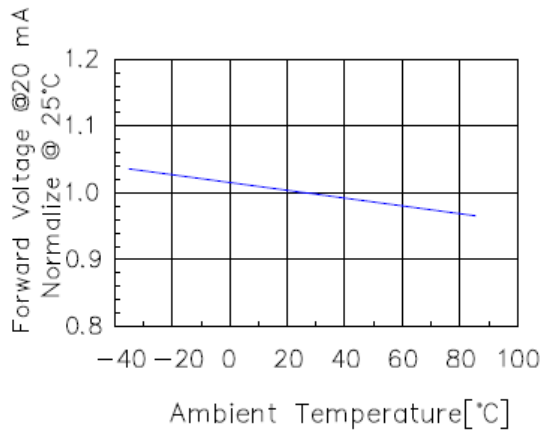


Fig 3. Forward Voltage vs. Temperature

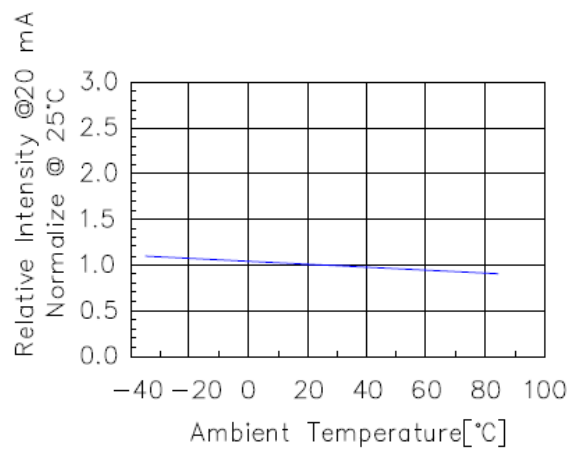


Fig 4. Relative Intensity vs. Temperature

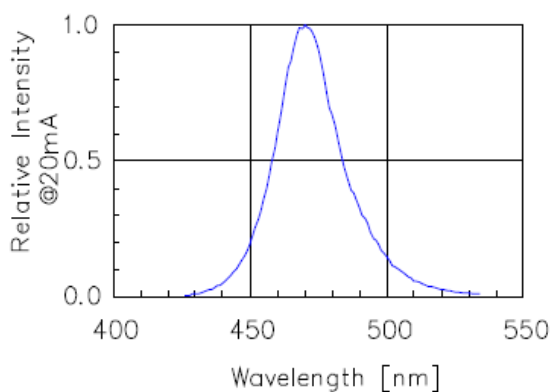


Fig 5. Relative Intensity vs. Wavelength

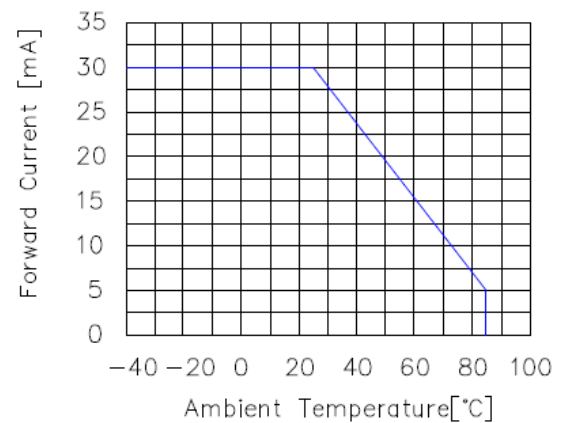


Fig 6. Forward current vs. Temperature

Characteristic Curves for W

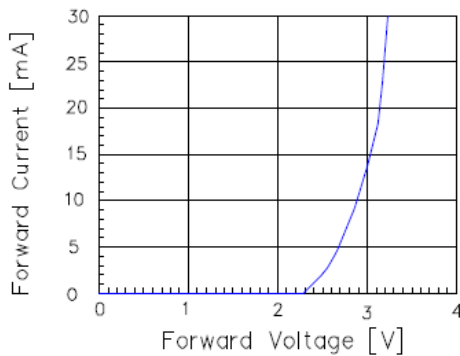


Fig 1. Forward Current vs. Forward Voltage

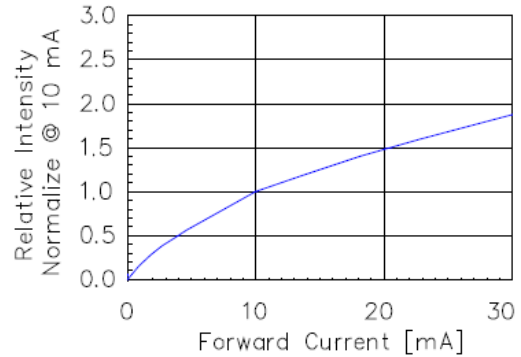


Fig 2. Relative Intensity vs. Forward Current

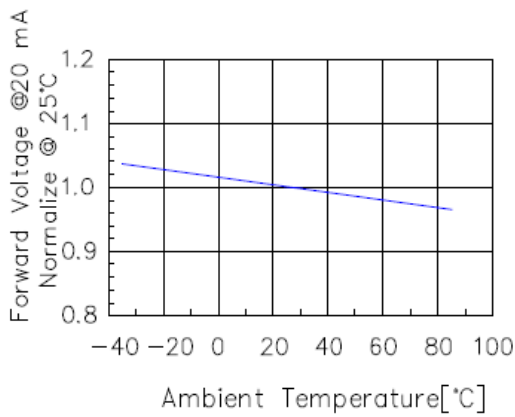


Fig 3. Forward Voltage vs. Temperature

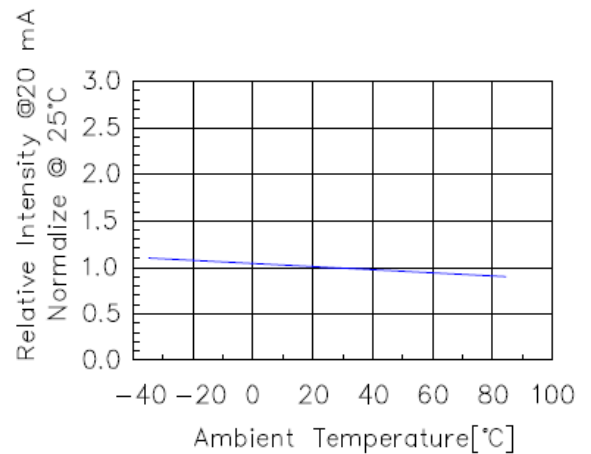


Fig 4. Relative Intensity vs. Temperature

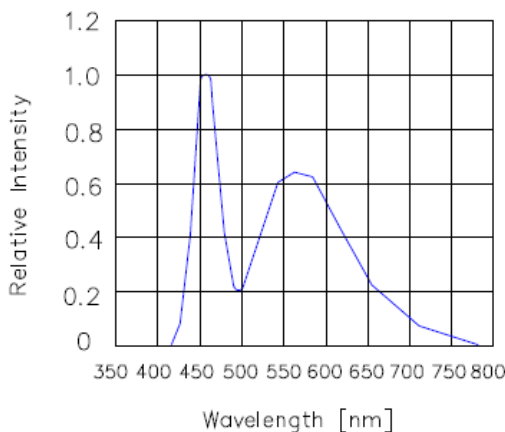


Fig 5. Relative Intensity vs. Wavelength

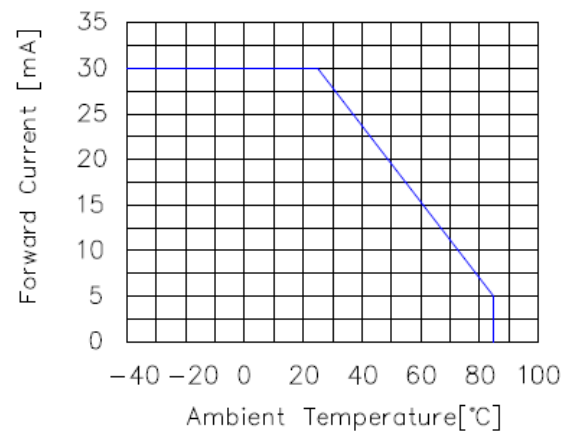
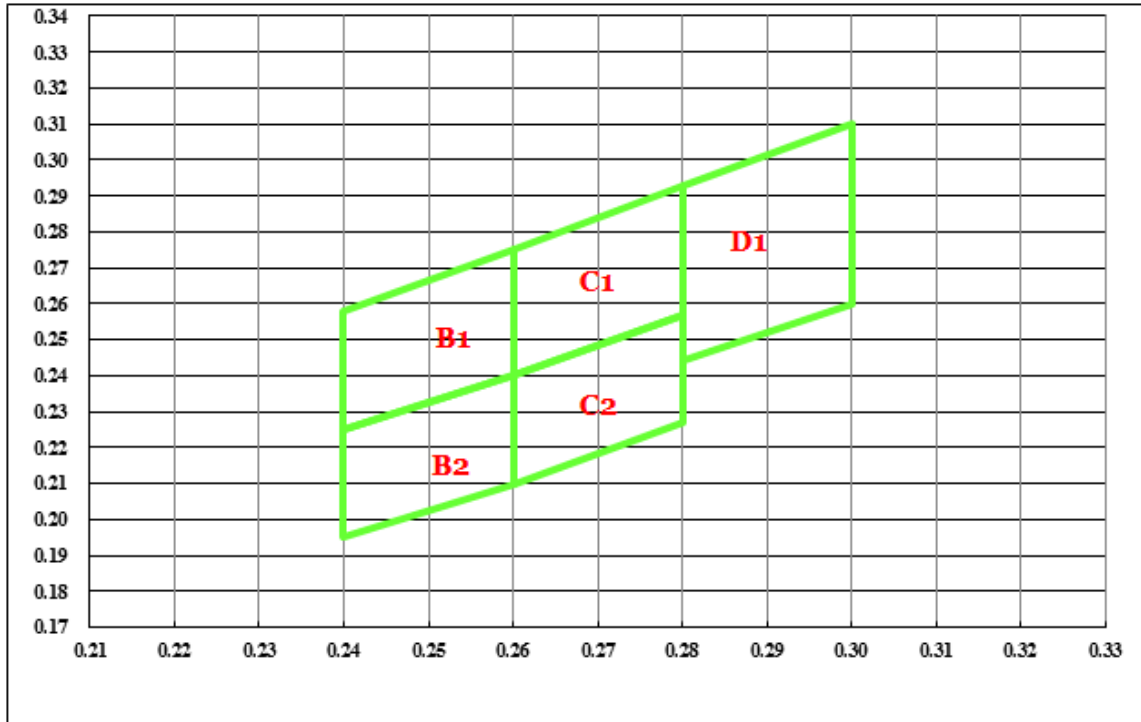


Fig 6. Forward current vs. Temperature

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

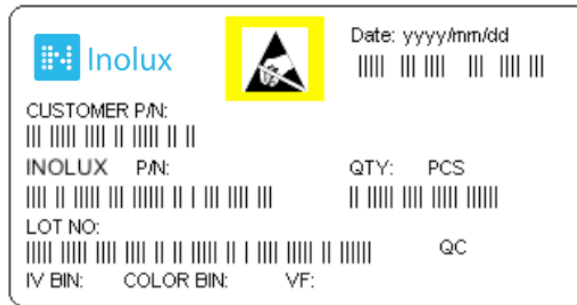
D1				
X	0.280	0.280	0.300	0.300
Y	0.244	0.293	0.310	0.260

Ordering Information

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-ST56YGXX	Yellow Green	AlGaInP	3	2.0	Common Anode	Black	INND-ST56YGAB
					Common Cathode	Black	INND-ST56YGCB
					Common Anode	Grey	INND-ST56YGAG
					Common Cathode	Grey	INND-ST56YGCG
INND-ST56YXX	Yellow	AlGaInP	17	2.0	Common Anode	Black	INND-ST56YAB
					Common Cathode	Black	INND-ST56YCB
					Common Anode	Grey	INND-ST56YAG
					Common Cathode	Grey	INND-ST56YCG
INND-ST56AXX	Amber	AlGaInP	18	2.0	Common Anode	Black	INND-ST56AAB
					Common Cathode	Black	INND-ST56ACB
					Common Anode	Grey	INND-ST56AAG
					Common Cathode	Grey	INND-ST56ACG
INND-ST56RXX	Red	AlGaInP	9	2.0	Common Anode	Black	INND-ST56RAB
					Common Cathode	Black	INND-ST56RCB
					Common Anode	Grey	INND-ST56RAG
					Common Cathode	Grey	INND-ST56RCG
INND-ST56DRXX	Deep Red	AlGaInP	8	2.0	Common Anode	Black	INND-ST56DRAB
					Common Cathode	Black	INND-ST56DRCB
					Common Anode	Grey	INND-ST56DRAG
					Common Cathode	Grey	INND-ST56DRCG

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-ST56GXX	Green	InGaN	70	3.2	Common Anode	Black	INND-ST56GAB
					Common Cathode	Black	INND-ST56GCB
					Common Anode	Grey	INND-ST56GAG
					Common Cathode	Grey	INND-ST56GCC
INND-ST56BXX	Blue	InGaN	12	3.2	Common Anode	Black	INND-ST56BAB
					Common Cathode	Black	INND-ST56BCB
					Common Anode	Grey	INND-ST56BAG
					Common Cathode	Grey	INND-ST56BCG
INND-ST56WXX	White	InGaN	60	3.2	Common Anode	Black	INND-ST56WAB
					Common Cathode	Black	INND-ST56WCB
					Common Anode	Grey	INND-ST56WAG
					Common Cathode	Grey	INND-ST56WCG

Label Specifications



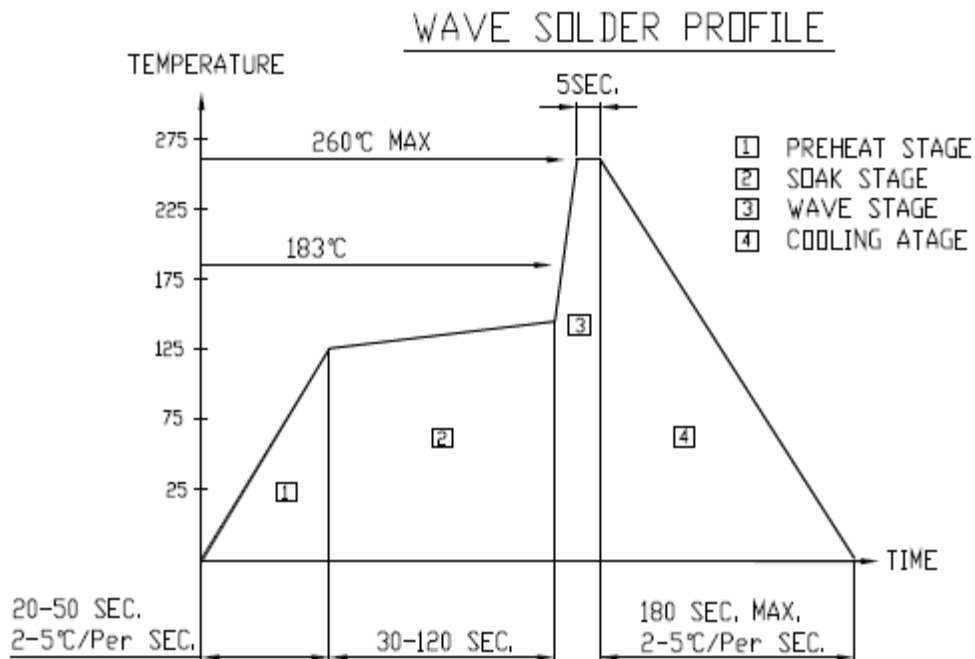
Inolux P/N:

I	N	N	D	-	S	T	5	6	X	X	X	-	X	X	X	X
Inolux		Display Type			Display Type		Dimension		Color	Polarity	Face Color		Customized Stamp-off			
		ND = Numeric Display			S: SMD T: Triple		56 = 0.56" 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	12-25-2019

DISCLAIMER

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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.