

## Features

- 0.56" (14.20mm) Digit Height
- Dual Digit Display
- Black/Grey Face , White Segment
- IC compatible, Easy assembly
- Dynamic drive connect
- RoHS Compliant, Pb Free

## Description

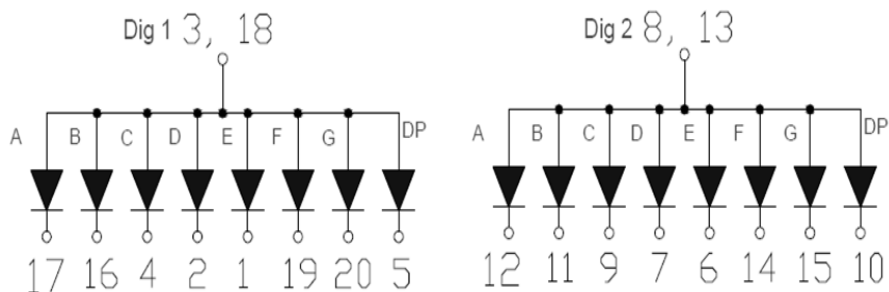
The INND-SD56 series is a 0.56" dual digit display. It is a SMD type LED display which can be used in various applications.

## Applications

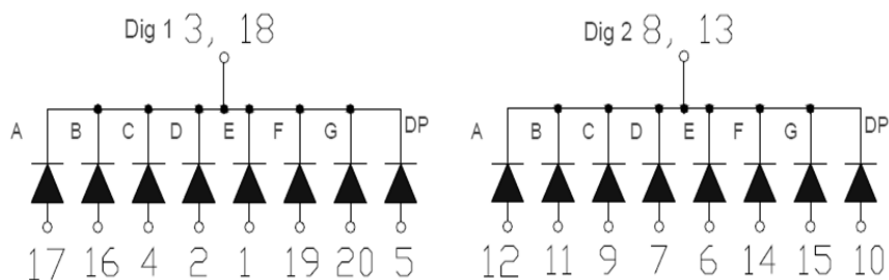
- Consumer Electronics
- Industrial Equipment

## Internal Circuit Diagrams

### Common Anode

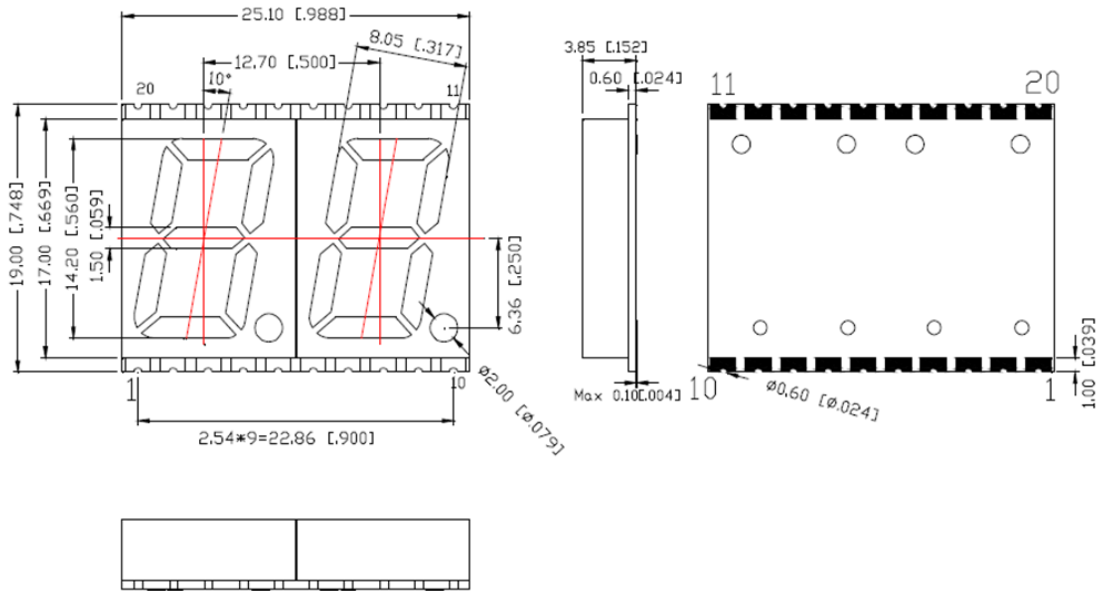


### Common Cathode



**Figure 1. INND-SD56 series Internal Circuit Diagram**

### Package Dimensions

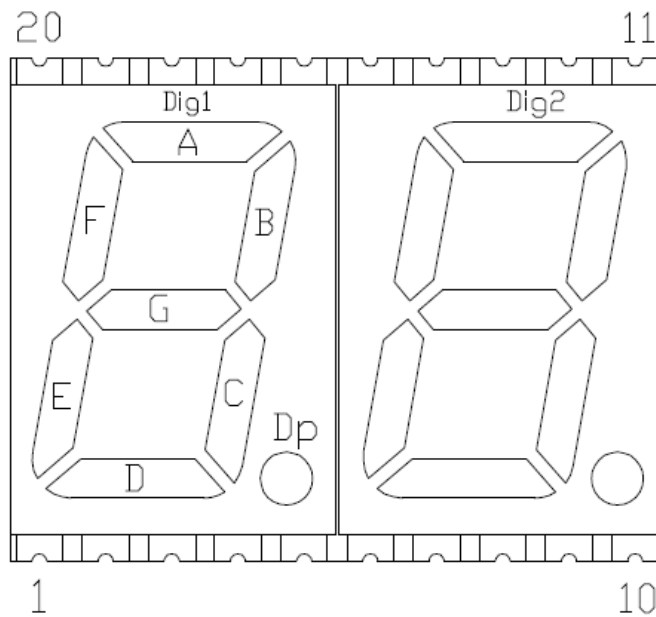


**Figure 2. INND-SD56 series Package Dimensions**

#### Notes

1. Dimension in millimeter [inch], tolerance is  $\pm 0.25$  [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 <sub>d</sub> (mW)	I <sub>F</sub> (mA)	I <sub>FP</sub> * (mA)	V <sub>R</sub> (V)	Derate From 25°C (mA/°C)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)
INND-SD56YGXX	Yellow Green	AlGaInP	70	25	90	5	0.33	-40°C~+105°C	-40°C~+105°C
INND-SD56YXX	Yellow	AlGaInP	70	25	90	5	0.33	-40°C~+105°C	-40°C~+105°C
INND-SD56AXX	Amber	AlGaInP	70	25	90	5	0.33	-40°C~+105°C	-40°C~+105°C
INND-SD56RXX	Red	AlGaInP	70	25	90	5	0.33	-40°C~+105°C	-40°C~+105°C
INND-SD56DRXX	Deep Red	AlGaInP	70	25	90	5	0.33	-40°C~+105°C	-40°C~+105°C
INND-SD56GXX	Green	InGaN	114	30	100	5	0.4	-40°C~+105°C	-40°C~+105°C
INND-SD56BXX	Blue	InGaN	114	30	100	5	0.4	-40°C~+105°C	-40°C~+105°C
INND-SD56WXX	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<sub>A</sub> = 25°C (Note 1)

Product (Per Segment)	Emission Color	VF(V)@20mA			λ(nm)@20mA		I*V(mcd)@10mA			IR(μA)@VR=5V	IV-M @IF =10mA
		min	typ.	max	λD	λP	min	typ.	max	max	max
INND-SD56YGXX	Yellow Green	-	2.0	2.8	570	572	-	3	-	100	2:1
INND-SD56YXX	Yellow	-	2.0	2.8	590	592	-	17	-	100	2:1
INND-SD56AXX	Amber	-	2.0	2.8	605	612	-	18	-	100	2:1
INND-SD56RXX	Red	-	2.0	2.8	630	644	-	9	-	100	2:1
INND-SD56DRXX	Deep Red	-	2.0	2.8	645	660	-	8	-	100	2:1
INND-SD56GXX	Green	-	3.2	3.8	525	-	-	70	-	100	2:1
INND-SD56BXX	Blue	-	3.2	3.8	465	-	-	12	-	50	2:1
INND-SD56WXX	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).

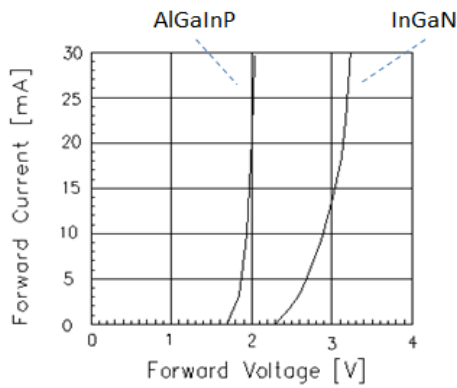
**Characteristic Curves for YG, Y, A, R, DR, G**


Fig 1. Forward Current vs. Forward Voltage

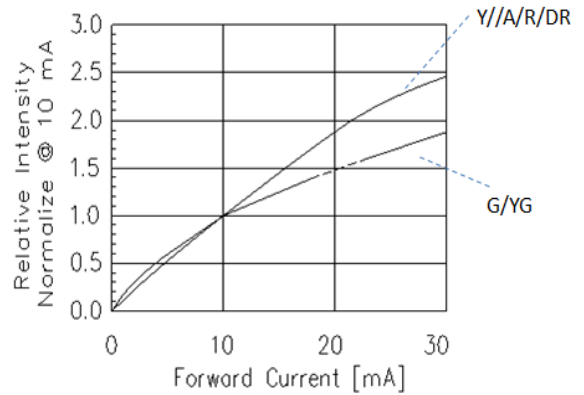


Fig 2. Relative Intensity vs. Forward Current

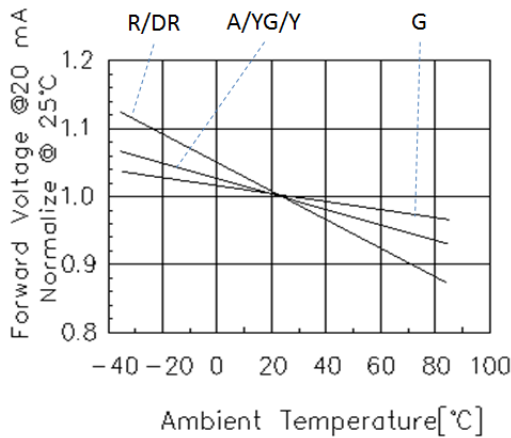


Fig 3. Forward Voltage vs. Temperature

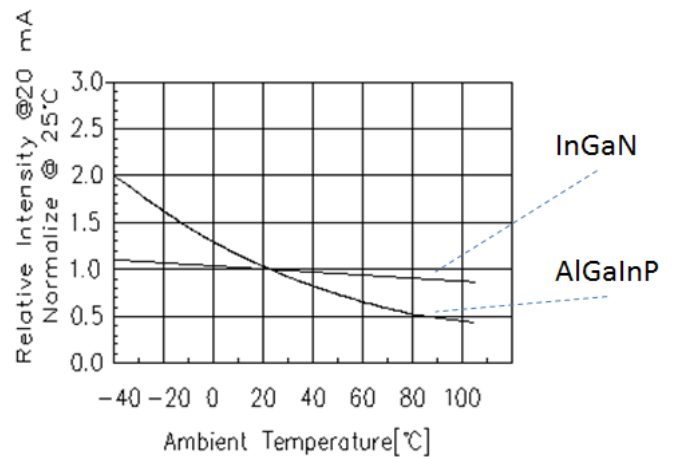


Fig 4. Relative Intensity vs. Temperature

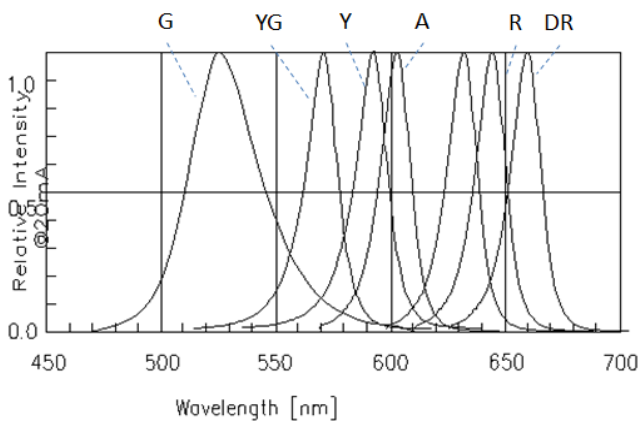


Fig 5. Relative Intensity vs. Wavelength

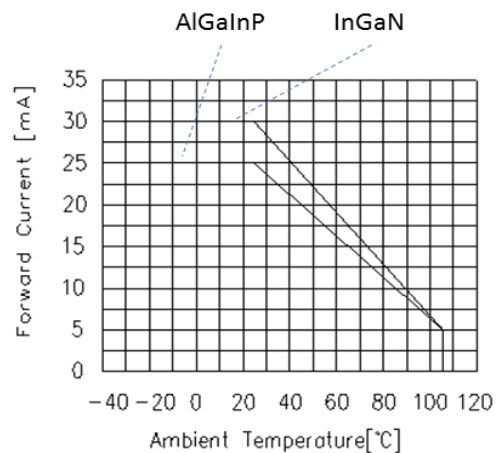


Fig 6. Forward current vs. Temperature

### Characteristic Curves for B

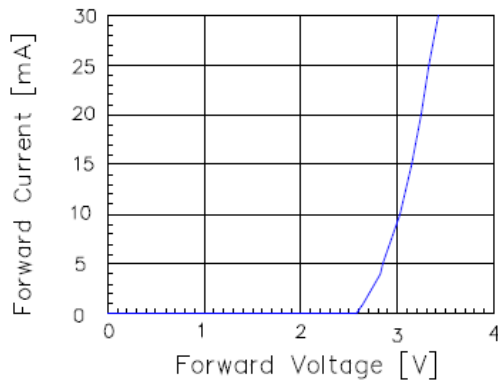


Fig 1. Forward Current vs. Forward Voltage

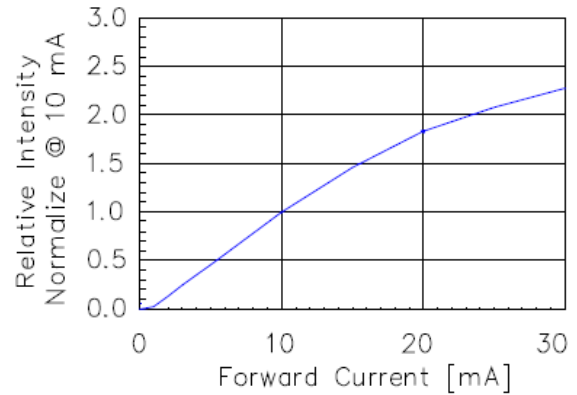


Fig 2. Relative Intensity vs. Forward Current

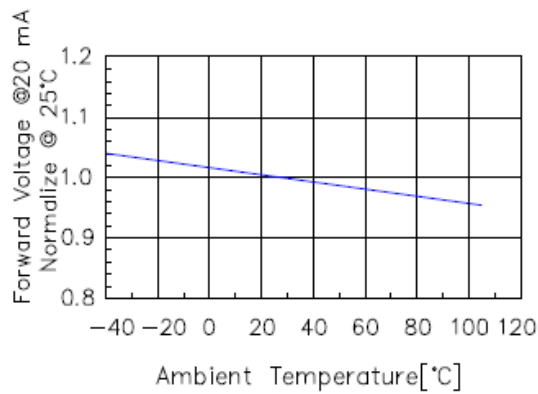


Fig 3. Forward Voltage vs. Temperature

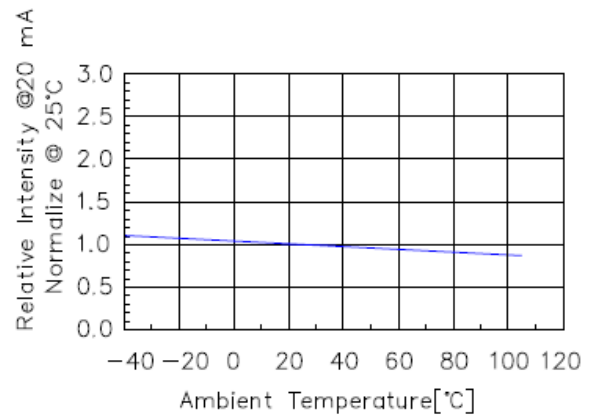


Fig 4. Relative Intensity vs. Temperature

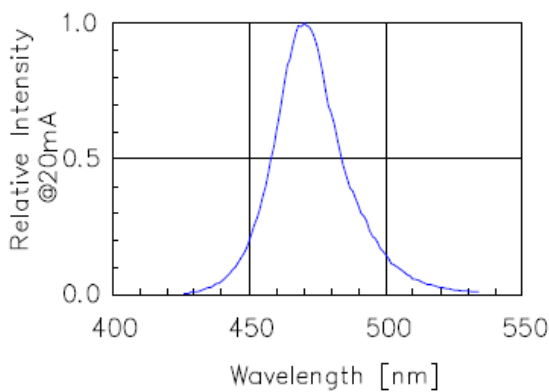


Fig 5. Relative Intensity vs. Wavelength

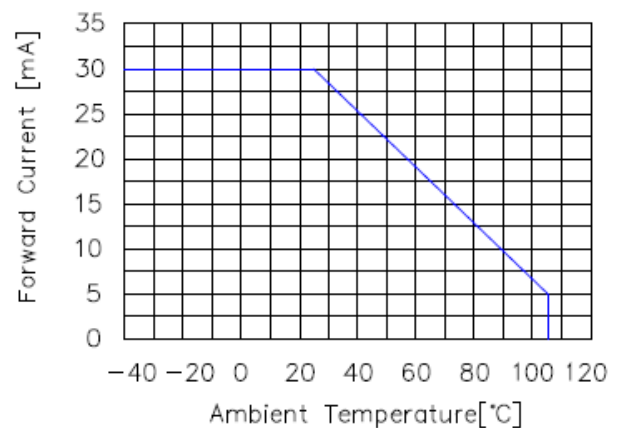


Fig 6. Forward current vs. Temperature

### Characteristic Curves for W

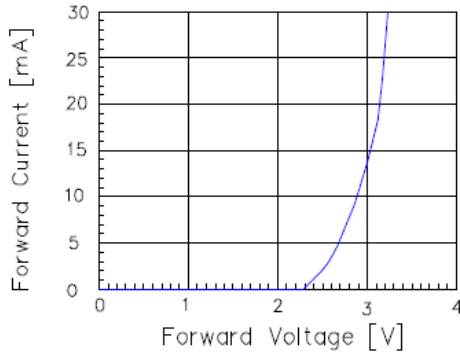


Fig 1. Forward Current vs. Forward Voltage

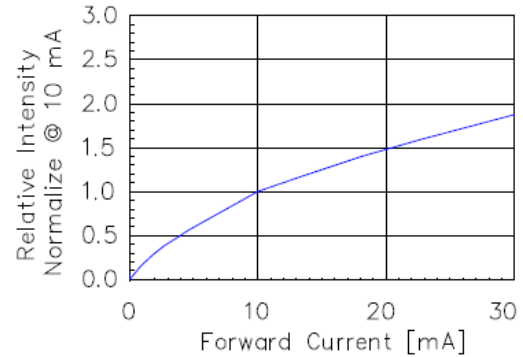


Fig 2. Relative Intensity vs. Forward Current

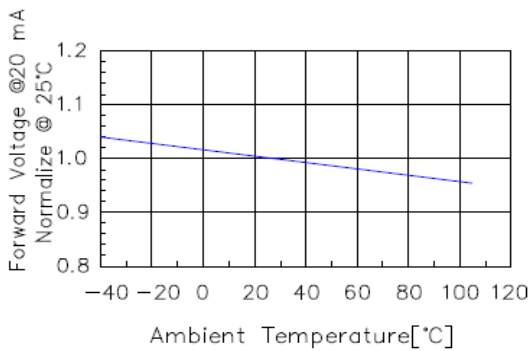


Fig 3. Forward Voltage vs. Temperature

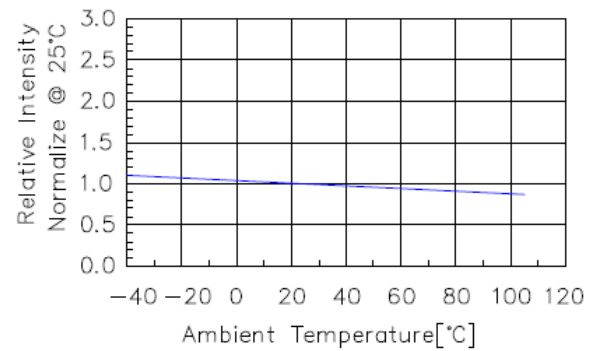


Fig 4. Relative Intensity vs. Temperature

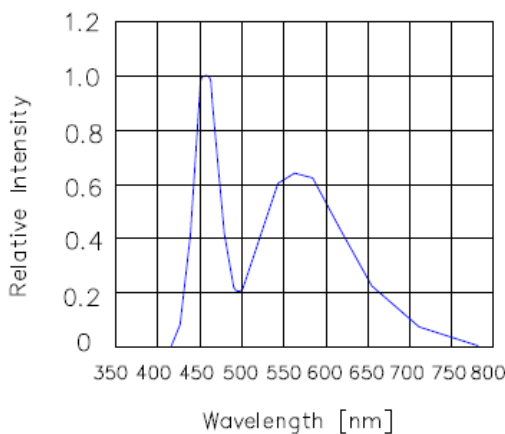


Fig 5. Relative Intensity vs. Wavelength

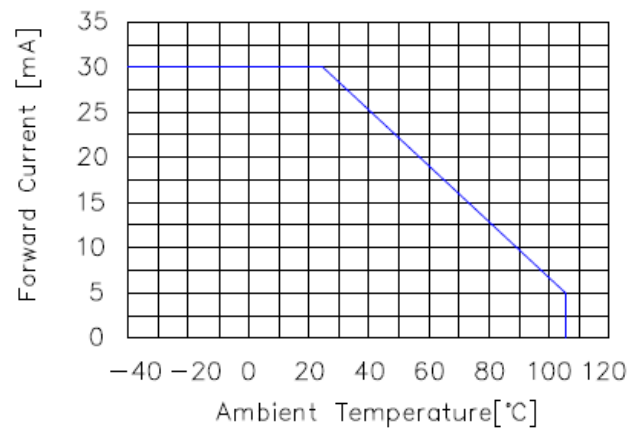
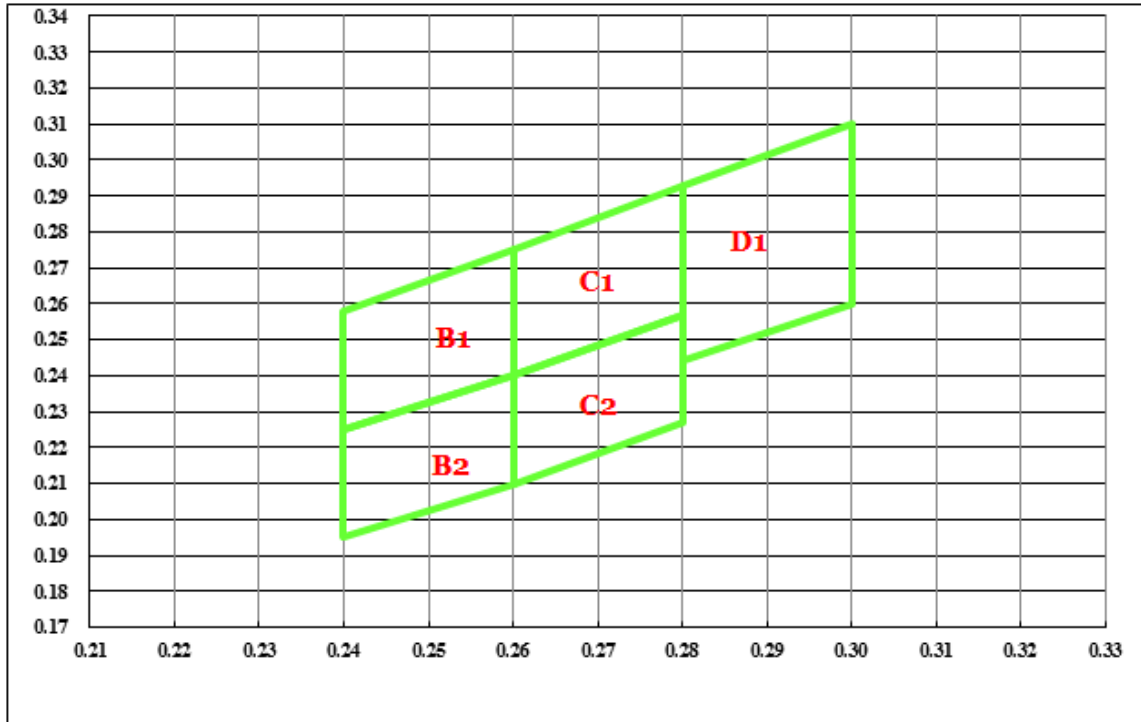


Fig 6. Forward current vs. Temperature

**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

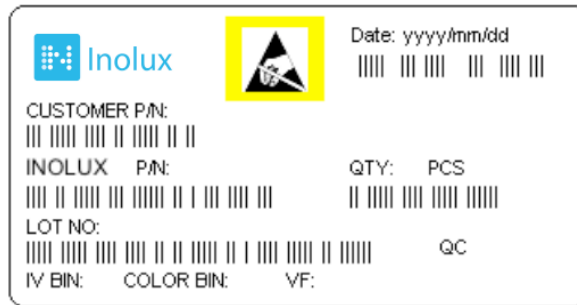


**Ordering Information**

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-SD56YGXX	Yellow Green	AlGaInP	3	2.0	Common Anode	Black	INND-SD56YGAB
					Common Cathode	Black	INND-SD56YGCB
					Common Anode	Grey	INND-SD56YGAG
					Common Cathode	Grey	INND-SD56YGCG
INND-SD56YXX	Yellow	AlGaInP	17	2.0	Common Anode	Black	INND-SD56YAB
					Common Cathode	Black	INND-SD56YCB
					Common Anode	Grey	INND-SD56YAG
					Common Cathode	Grey	INND-SD56YCG
INND-SD56AXX	Amber	AlGaInP	18	2.0	Common Anode	Black	INND-SD56AAB
					Common Cathode	Black	INND-SD56ACB
					Common Anode	Grey	INND-SD56AAG
					Common Cathode	Grey	INND-SD56ACG
INND-SD56RXX	Red	AlGaInP	9	2.0	Common Anode	Black	INND-SD56RAB
					Common Cathode	Black	INND-SD56RCB
					Common Anode	Grey	INND-SD56RAG
					Common Cathode	Grey	INND-SD56RCG

Product	Emission Color	Technology	I*V(mcd) @10mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INND-SD56DRXX	Deep Red	AlGaInP	8	2.0	Common Anode	Black	INND-SD56DRAB
					Common Cathode	Black	INND-SD56DRCB
					Common Anode	Grey	INND-SD56DRAG
					Common Cathode	Grey	INND-SD56DRCG
INND-SD56GXX	Green	InGaN	70	3.2	Common Anode	Black	INND-SD56GAB
					Common Cathode	Black	INND-SD56GCB
					Common Anode	Grey	INND-SD56GAG
					Common Cathode	Grey	INND-SD56GCG
INND-SD56BXX	Blue	InGaN	12	3.2	Common Anode	Black	INND-SD56BAB
					Common Cathode	Black	INND-SD56BCB
					Common Anode	Grey	INND-SD56BAG
					Common Cathode	Grey	INND-SD56BCG
INND-SD56WXX	White	InGaN	60	3.2	Common Anode	Black	INND-SD56WAB
					Common Cathode	Black	INND-SD56WCB
					Common Anode	Grey	INND-SD56WAG
					Common Cathode	Grey	INND-SD56WCG

### Label Specifications



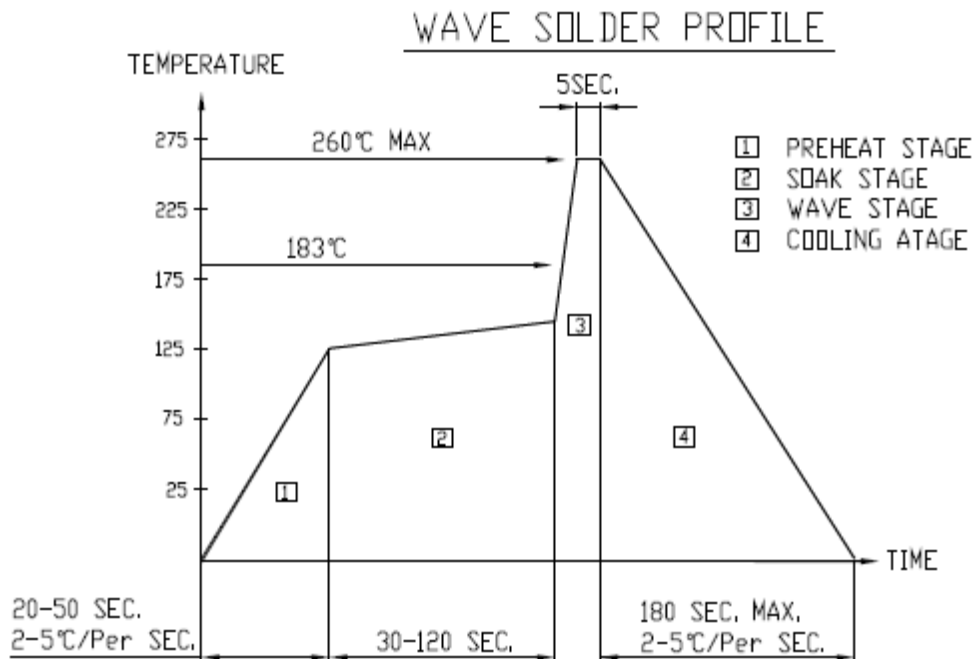
### Inolux P/N:

I	N	N	D	-	S	D	5	6	X	X	X	-	X	X	X	X
Inolux		Display Type			Display Type		Dimension		Color	Polarity	Face Color	Customized Stamp-off				
Inolux		ND = Numeric Display			S: SMD Type D: Dual	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  $\leq 4$  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**

<b>Changes since last revision</b>	<b>Page</b>	<b>Version No.</b>	<b>Revision Date</b>
Initial Release		1.0	12-25-2019

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