Features

- 5.0*1.7mm*10 Segments
- Bar Graph
- Black Face, White Segment
- Easy assembly
- RoHS Compliant, Pb Free

Applications

- Consumer Electronics
- Industrial Equipment

Description

The INBD-T11020.XNB series is 5.0*1.7mm*10 Segments display. It is a Through Hole type LED display which can be used in various applications.

Internal Circuit Diagram

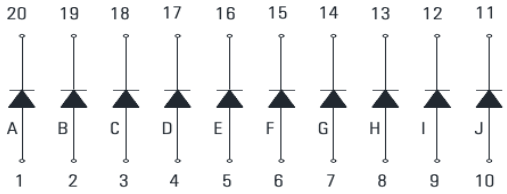


Figure 1. INBD-T11020.XNB Internal Circuit Diagram

Package Dimensions & All Light On Segments Feature

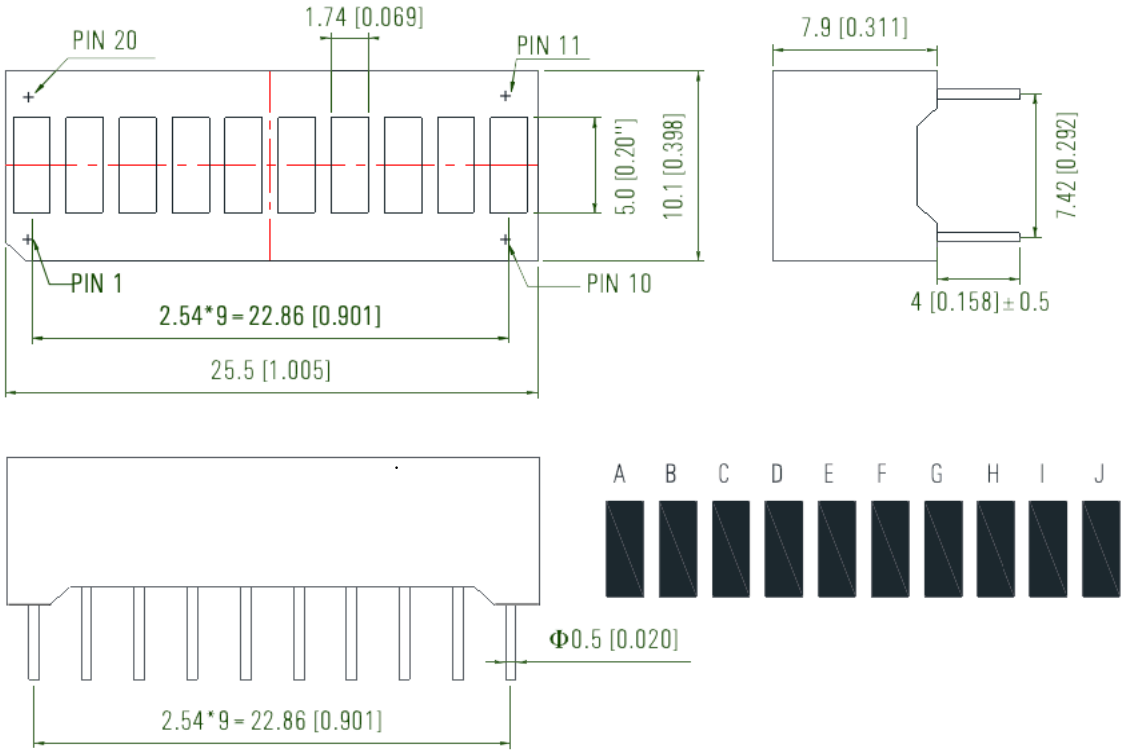


Figure 2. INBD-T11020.XNB Package Dimensions

Notes

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010″) unless otherwise noted.

Absolute Maximum Rating at 25ºC (Note 1)

Product (Per Segment)	Emission Color	Pd (mW)	IF (mA)	IFP* (mA)	VR (V)	T_{OP} (ºC)	T_{ST} (ºC)
INBD-T11020.YGNB	Yellow Green	50	20	25	5	-40ºC~+80ºC	-40ºC~+85ºC
INBD-T11020.ANB	Amber	50	20	25	5	-40ºC~+80ºC	-40ºC~+85ºC
INBD-T11020.RNB	Red	50	20	25	5	-40ºC~+80ºC	-40ºC~+85ºC
INBD-T11020.BNB	Blue	65	20	25	5	-40ºC~+80ºC	-40ºC~+85ºC
INBD-T11020.WNB	White	65	20	25	5	-40ºC~+80ºC	-40ºC~+85ºC

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

Electrical Characteristics T_A = 25℃ (Note)

Product (Per Segment)	Emission Color	V_F(V)@20mA			λ(nm)@20mA		I^*_V(mcd)@10mA			I^*_V(mcd)@20mA			I_R(μA)@V_R=5V	I_{V-M} @I_F =10mA
		min	typ.	max	$λ_D$	$λ_P$	min	typ.	max	min	typ.	max	max	max
INBD-T11020.YGNB	Yellow Green	-	2	2.4	572	575	5	10	-	10	20	-	50	2:1
INBD-T11020.ANB	Amber	-	2.1	2.4	605	610	13	25	-	25	50	-	50	2:1
INBD-T11020.RNB	Red	-	2	2.4	624	632	20	40	-	40	80	-	50	2:1
INBD-T11020.BNB	Blue	-	2.9	3.1	470	468	15	30	-	30	60	-	50	2:1
INBD-T11020.WNB	White	-	2.9	3.1	X: 0.3 Y: 0.31		38	75	-	75	150	-	50	2:1

Notes

1. Performance guaranteed only under conditions listed in above tables.
2. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
3. The dominant wavelength (λd) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
4. Luminous Intensity is an average value which is measured one 7-segment. Tolerance of Luminous Intensity: ±10%.
5. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.
6. The chromaticity coordinates (x, y) is derived from the 1931 CIE chromaticity diagram.

ESD Precaution

ATTENTION: Electrostatic Discharge (ESD) protection

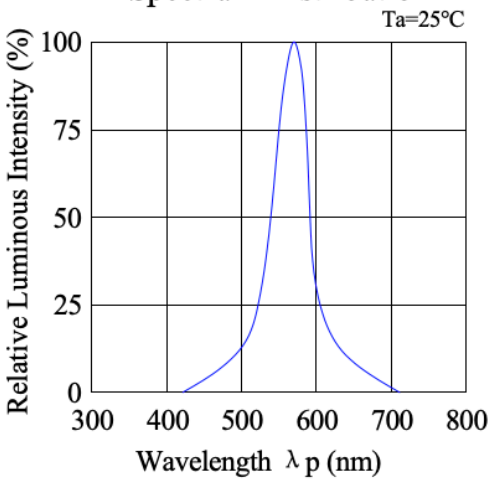
The symbol above denotes that ESD precaution is needed. ESD protection for GaP and AlGaAs based chips is necessary even though they are relatively safe in the presence of low static-electric discharge. Parts built with AlInGaP, GaN, or/and InGaN based chips are STATIC SENSITIVE devices. ESD precaution 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).

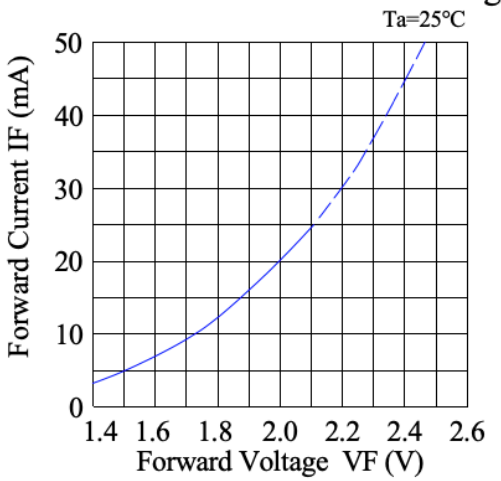
Characteristic Curves-Per Die Yellow Green

(Ta = 25°C Unless Otherwise Noted)

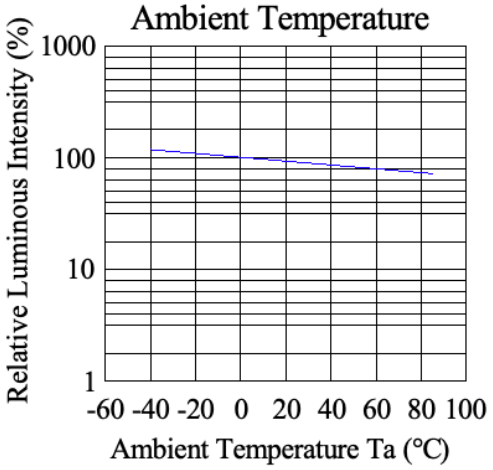
Spectrum Distribution



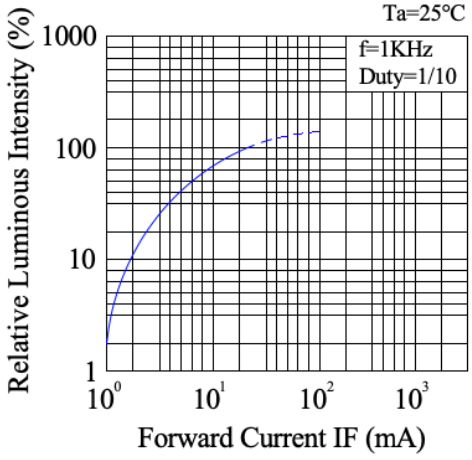
Forward Current & Forward Voltage



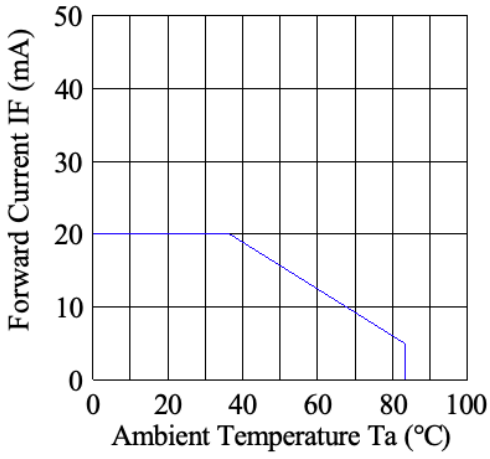
Luminous Intensity & Ambient Temperature



Luminous Intensity & Forward Current



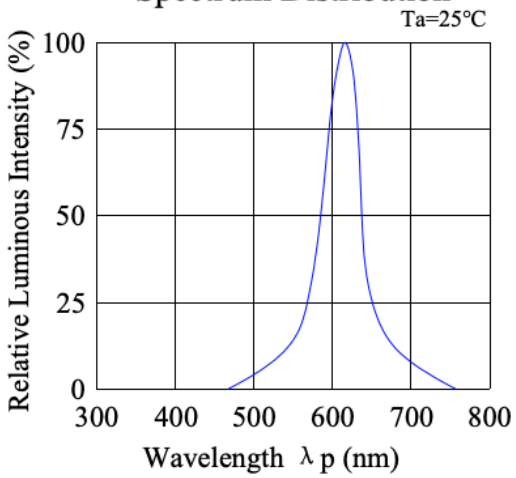
Forward Current Derating Curve



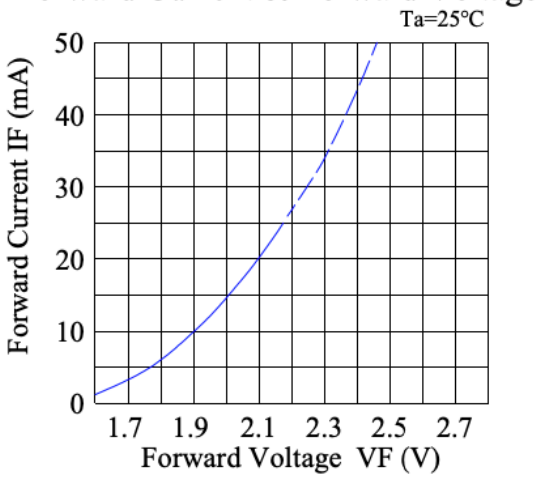
Characteristic Curves-Per Die Amber

(Ta = 25°C Unless Otherwise Noted)

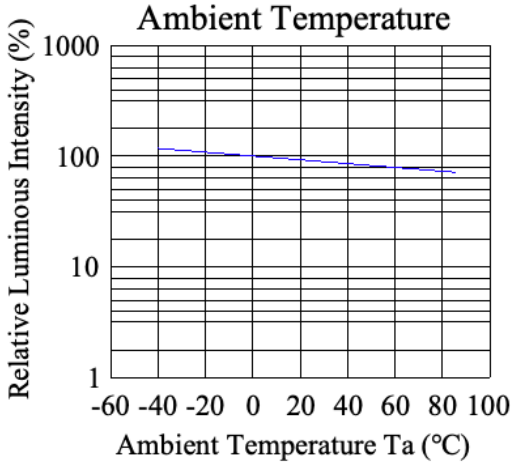
Spectrum Distribution



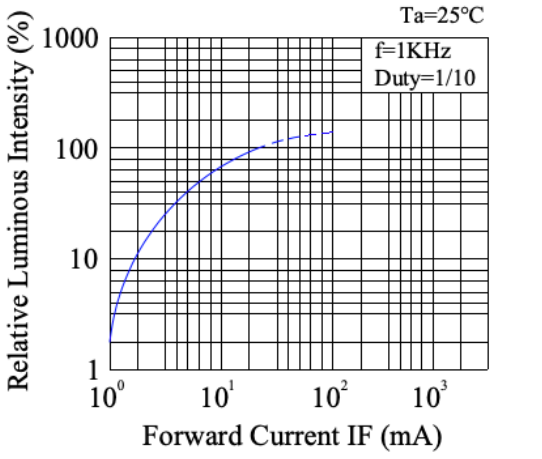
Forward Current & Forward Voltage



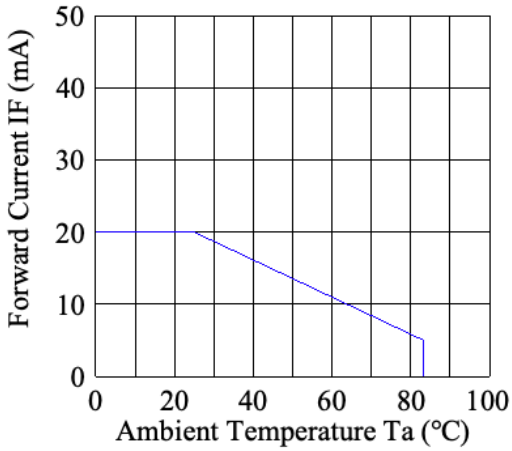
Luminous Intensity & Ambient Temperature



Luminous Intensity & Forward Current



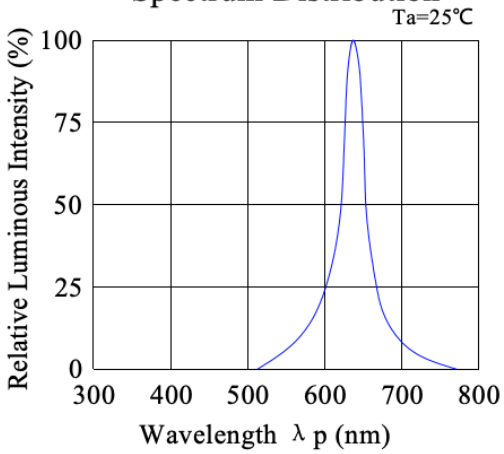
Forward Current Derating Curve



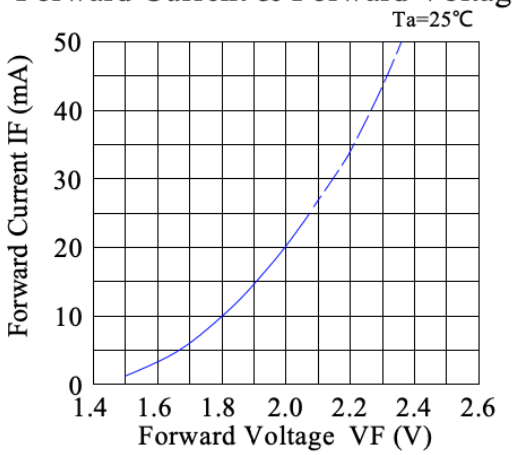
Characteristic Curves-Per Die Red

(Ta = 25°C Unless Otherwise Noted)

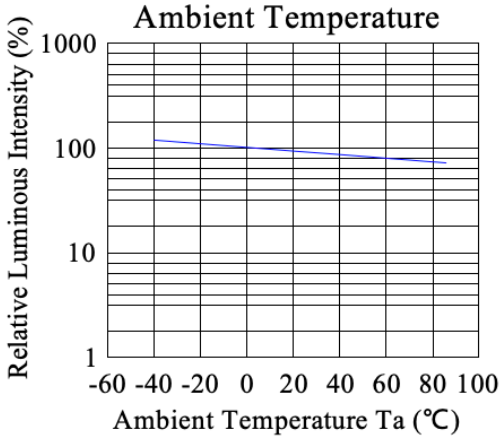
Spectrum Distribution



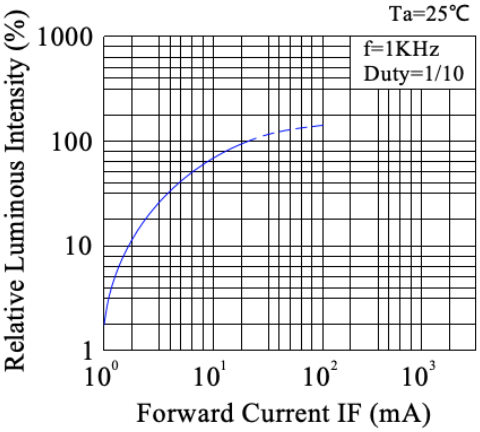
Forward Current & Forward Voltage



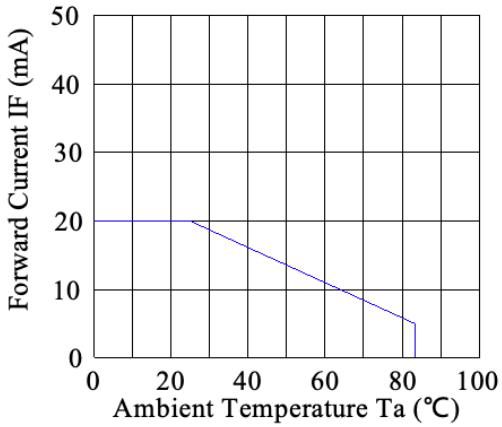
Luminous Intensity & Ambient Temperature



Luminous Intensity & Forward Current



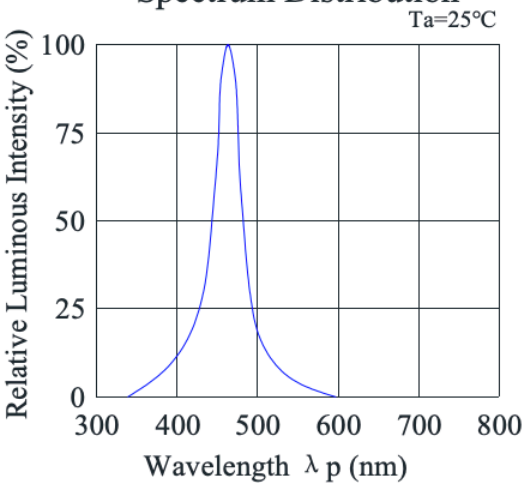
Forward Current Derating Curve



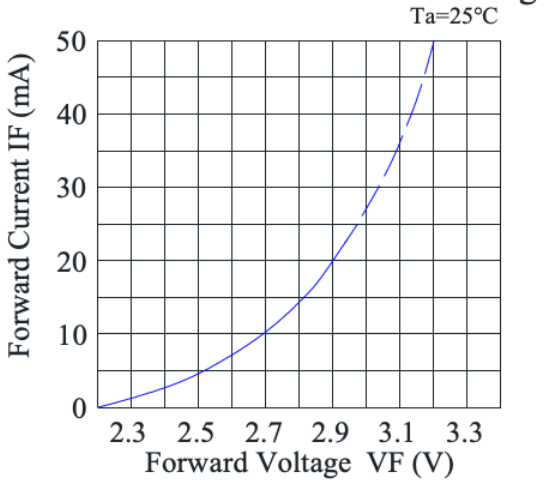
Characteristic Curves-Per Die Blue

(Ta = 25°C Unless Otherwise Noted)

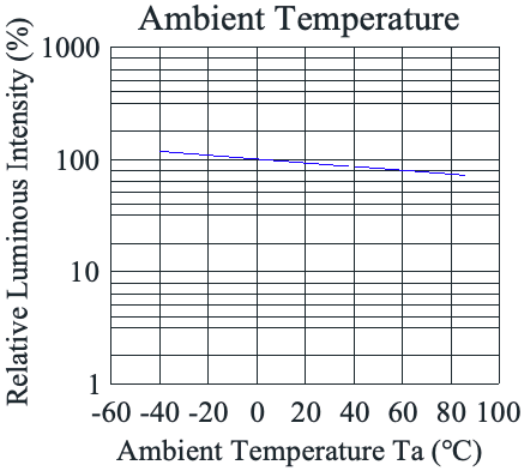
Spectrum Distribution



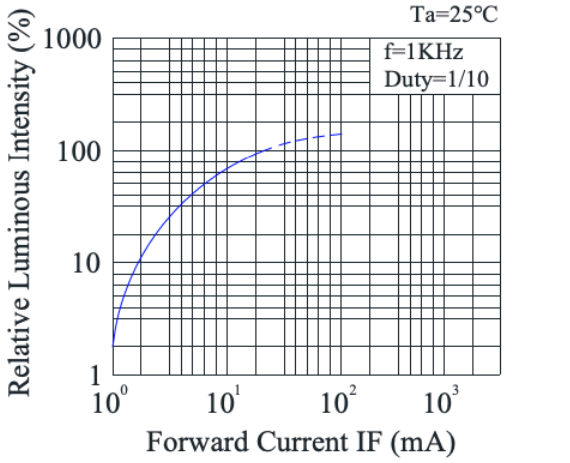
Forward Current & Forward Voltage



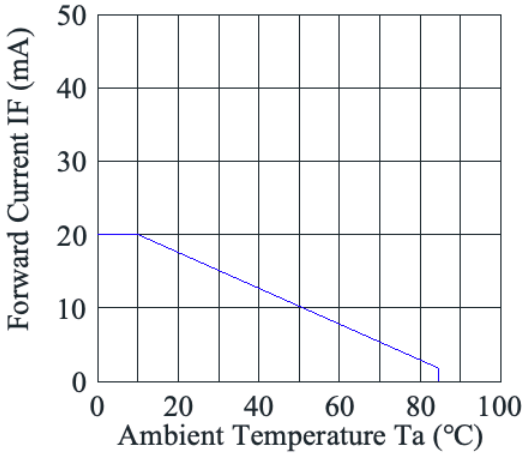
Luminous Intensity & Ambient Temperature



Luminous Intensity & Forward Current



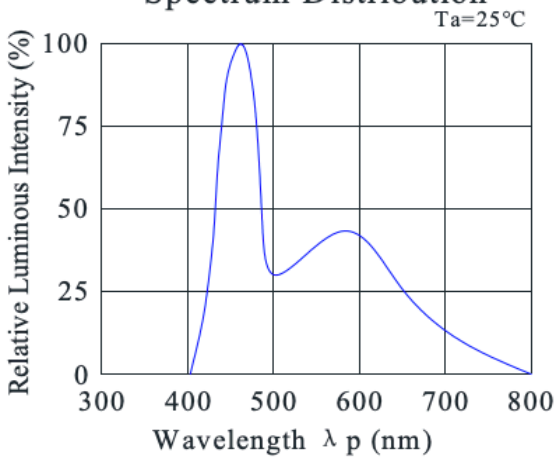
Forward Current Derating Curve



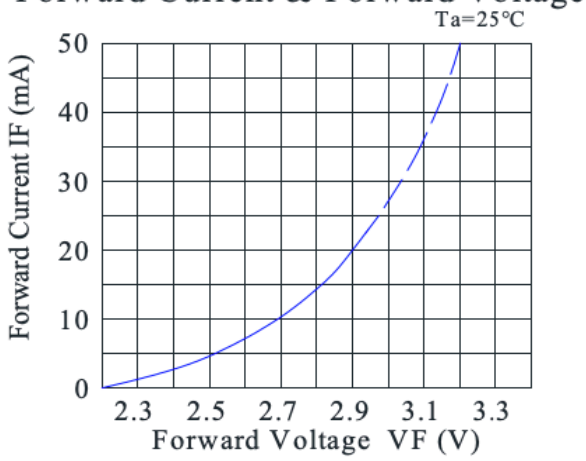
Characteristic Curves-Per Die White

(Ta = 25°C Unless Otherwise Noted)

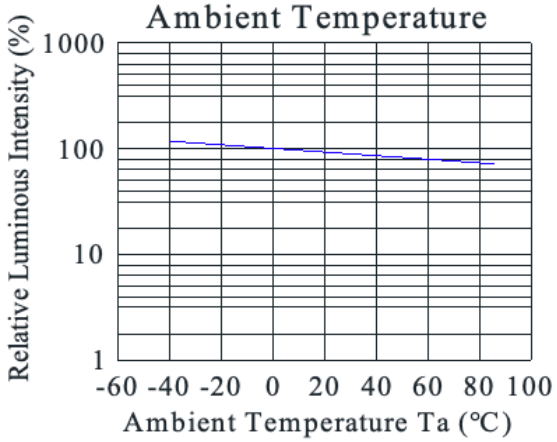
Spectrum Distribution



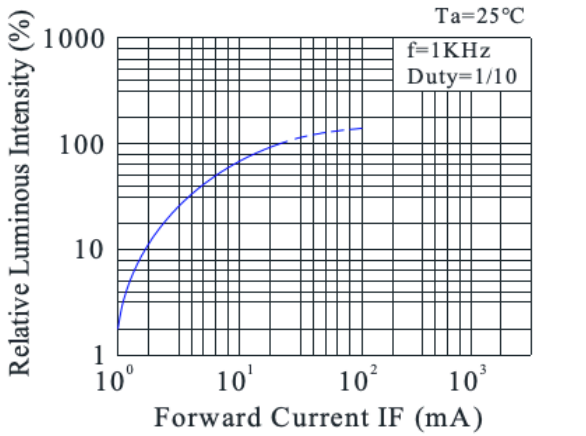
Forward Current & Forward Voltage



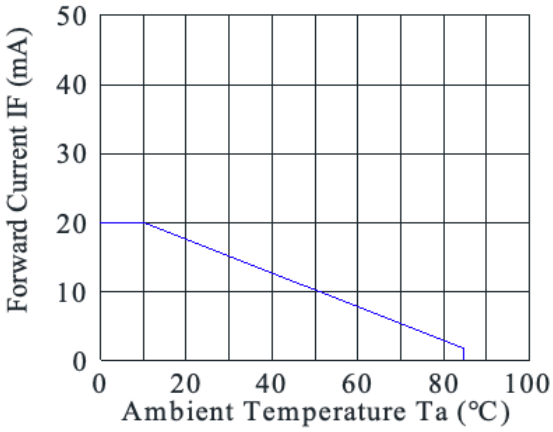
Luminous Intensity & Ambient Temperature



Luminous Intensity & Forward Current



Forward Current Derating Curve

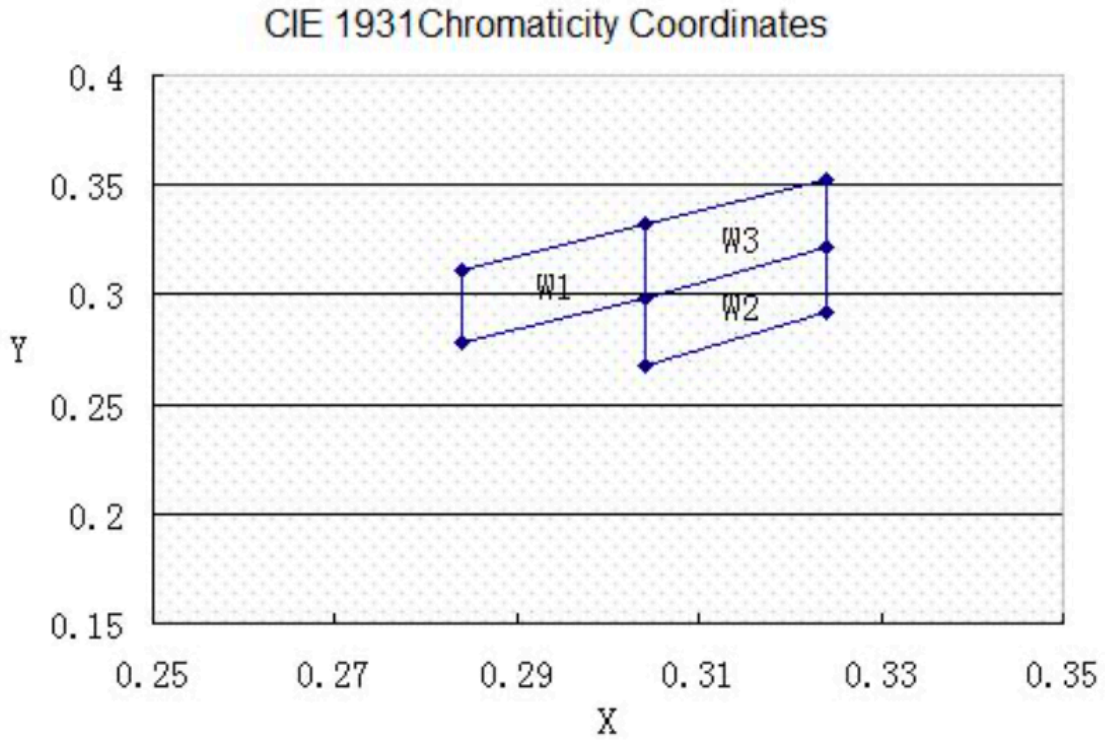


Chromaticity Bin (for White only)

Color Bin at IF = 10mA

Bin Code	CIE 1931Chromaticity Coordinates					
W1	x	0.284	0.284	0.304	0.304
	y	0.278	0.311	0.332	0.298
W2	x	0.304	0.304	0.324	0.324
	y	0.268	0.298	0.322	0.292
W3	x	0.304	0.304	0.324	0.324
	y	0.298	0.332	0.352	0.322

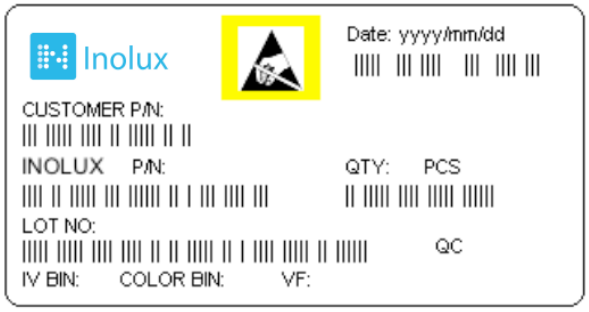
Tolerance on each Hue (x, y) bin is +/- 0.01.



Ordering Information

Product	Emission Color	I*V(mcd) @10mA	I*V(mcd) @20mA	VF(V) @20mA	Polarity	Face Color	Orderable Part Number
INBD-T11020.YGNB	Yellow Green	10	20	2	No Common	Black	INBD-T11020.YGNB
INBD-T11020.ANB	Amber	25	50	2.1	No Common	Black	INBD-T11020.ANB
INBD-T11020.RNB	Red	40	80	2	No Common	Black	INBD-T11020.RNB
INBD-T11020.BNB	Blue	30	60	2.9	No Common	Black	INBD-T11020.BNB
INBD-T11020.WNB	White	75	150	2.9	No Common	Black	INBD-T11020.WNB

Label Specifications



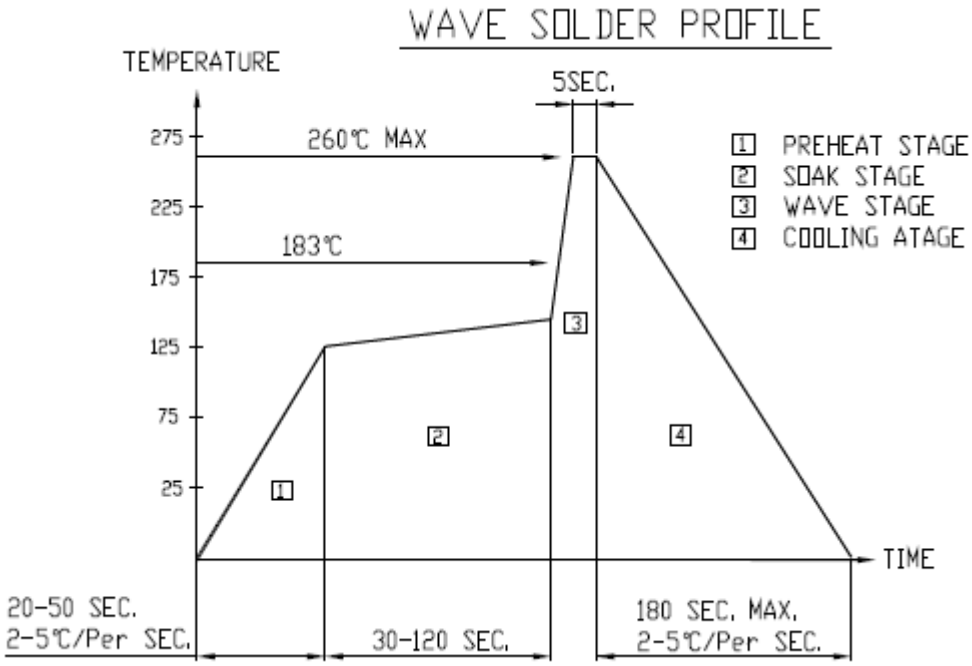
Inolux P/N:

I	N	B	D	-	T	1	1	0	2	0	.	X	N	B	-	X	X	X	X
Inolux		Display Type			Display Type	Matrix			Dimension			Color	Polarity	Face Color		Customized Stamp-off			
		BD = Bar Graph Display			T: Through Hole Type	110 = 1 x 10			20 = 0.20" Display Height			YG: 572nm A: 605nm R: 624nm B: 470 nm W: X: 0.3 Y: 0.31	N = No Common	B = Black					

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	01-28-2021

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