

#### **Features**

- 0606 0.55mm SMD LED
- High Brightness
- AllnGaP / InGaN Technology
- Small package
- High reliability
- Clear Lens

## **Applications**

- Consumer Electronics
- Wearables
- Automobile After Market
- Industrial Equipment

com+

#### **Description**

The IN-S66TBTRGB is a tri-color 0606 package with versatile design capabilities. It is a PCB type LED which can be used in various applications.

#### **Recommended Solder Pattern**

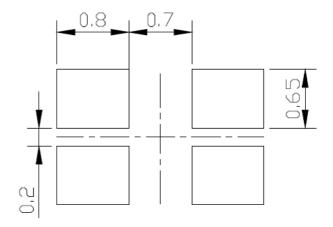


Figure 1. IN-S66TBTRGB Solder Pattern

## Package Dimensions in mm

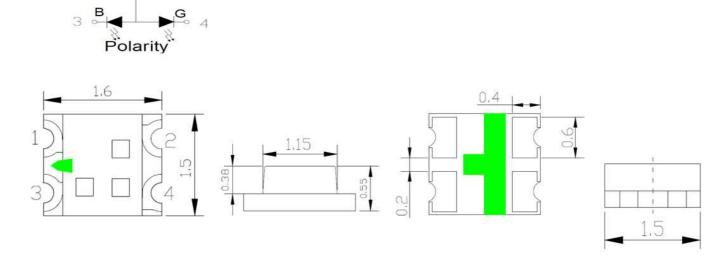


Figure 2. IN-S66TBTRGB Package Dimensions



## Absolute Maximum Rating at 25°C (Note 1)

Product	Emission Color	P <sub>d</sub> (mW)	I <sub>F</sub> (mA)	I <sub>FP</sub> * (mA)	V <sub>R</sub> (V)	Top (°C)	T <sub>ST</sub> (°C)		
	Red	75	25	70					
IN-S66TBTRGB	Green	75	25	100	5	-30°C~+85°C	-40°C~+90°C		
	Blue	75	25	100					

#### **Notes**

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

#### **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).

#### Electrical Characteristics $T_A = 25$ <sup>©</sup> (Note 1)

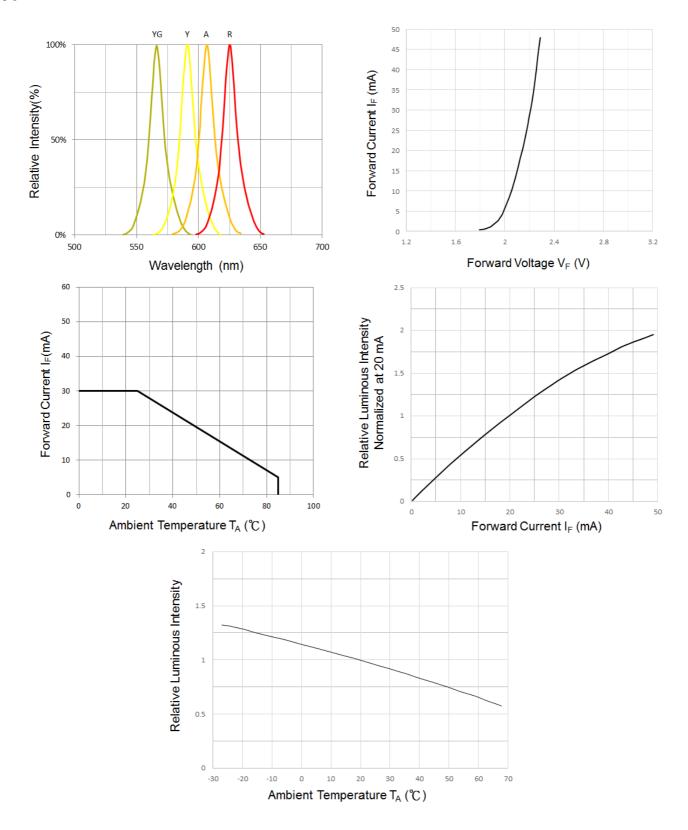
Product	Emission Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)			λ(nm)	Viewing Angel	I*∨(mcd)	
			typ.	max	λ	λ <sub>P</sub>	Δλ	<b>2</b> <i>\theta</i> 1/2	typ.
	Red	20	2.2	2.6	620	630	20	120	180
IN-S66TBTRGB	Green	20	3.2	3.6	521	530	35	120	450
	Blue	20	3.2	3.6	467	471	30	120	115

#### **Notes**

1. Performance guaranteed only under conditions listed in above tables.

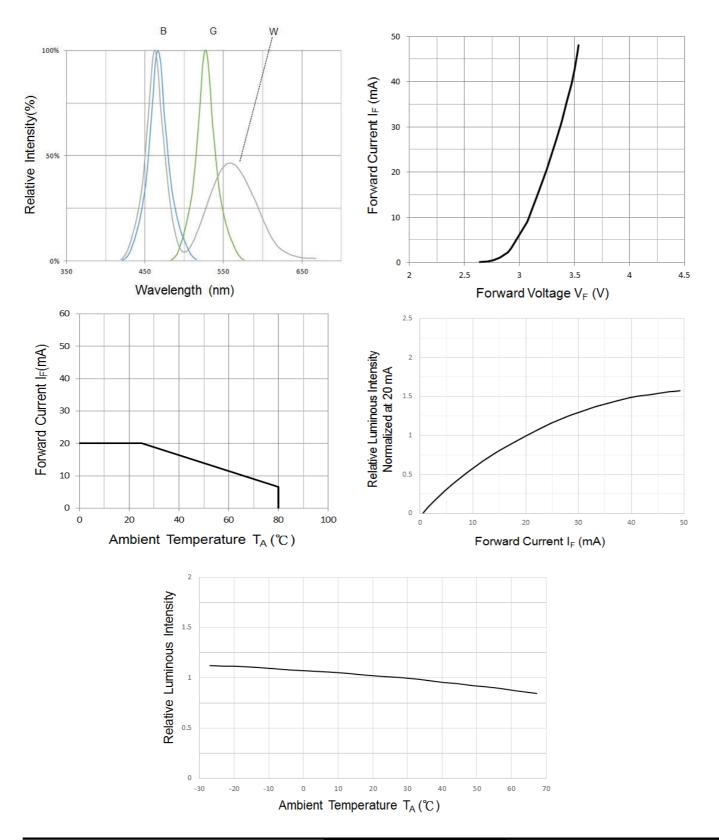


## Typical Characteristic Curves – YG, Y, A, R



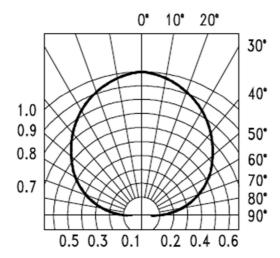


## Typical Characteristic Curves – B, G, W





## **Typical Characteristic Curves – Radiation Pattern**

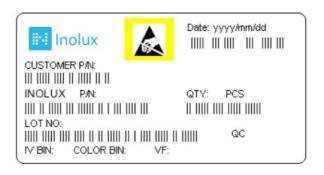


## **Ordering Information**

Product	Emission Color	Test Current I <sub>F</sub> (mA)	Luminous Intensity I <sub>V</sub> (mcd) (Typ.)	Forward Voltage V <sub>F</sub> (V) (Typ.)	Orderable Part Number		
	Red	20	180	2.2			
IN-S66TBTRGB	Green	20	450	3.2	IN-S66TBTRGB		
	Blue		Blue 20		115	3.2	



## **Label Specifications**



#### **Inolux P/N:**

I	N	-	S	6	6	Т	В	Т			R	G	В		-	X	( X	Х
			Material	Pacl	kage	Vari	ation	Orientation	Current	Lens		Color		Chip Type		Cust Sta	omi mp-	
Inol SM			S = PCB Type	66ТВ	= 1.6 x	1.5 x 0.5	55mm	T = Top Mount	(Blank) = 20mA	(Blank) = Clear	G	=630n =530n =471n	m	(blank) = Standard				

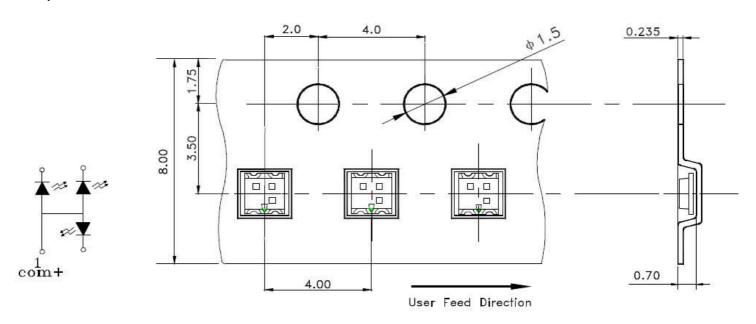
#### Lot No.:

Z	2	0	1	7	01	24	001
Internal		Year (2017	Month	Dato	Serial		
Tracker		fear (2017)	, 2016,)	MOHUH	Date	Serial	

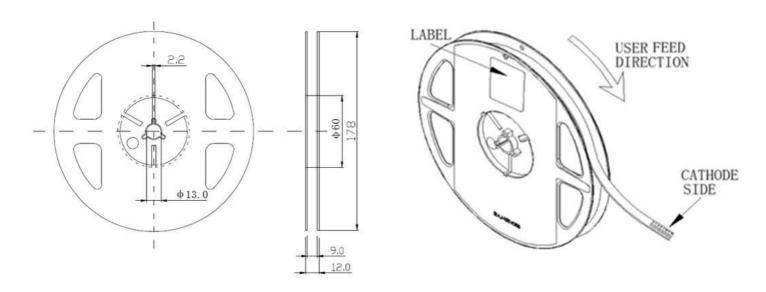


## Packaging Information: 4000pcs Per Reel

## **Tape Dimension**

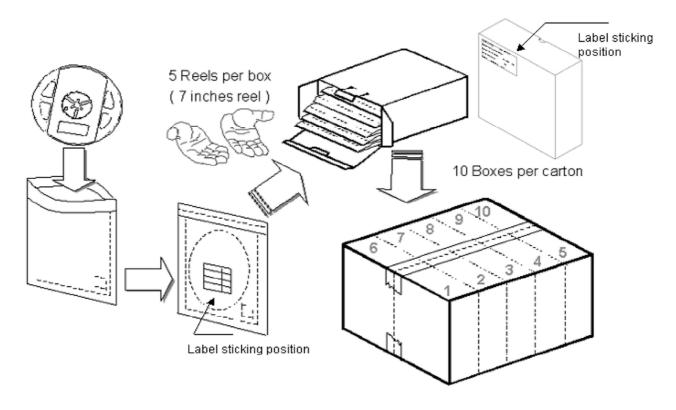


#### **Reel Dimension**





## **Packing Dimension**



5 boxes per carton are available depending on shipment quantity.

	Specification	Material	Quantity
Carrier tape	Per EIA 481-1A specs	Conductive black tape	4000pcs per reel
Reel	Per EIA 481-1A specs	Conductive black	
Label	IN standard	Paper	
Packing bag	220x240mm	Aluminum laminated bag/ no-zipper	One reel per bag
Carton	IN standard	Paper	Non-specified

#### Others:

Each immediate box consists of 5 reels. The 5 reels may not necessarily have the same lot number or the same bin combinations of Iv,  $\lambda_D$  and Vf. Each reel has a label identifying its specification; the immediate box consists of a product label as well.

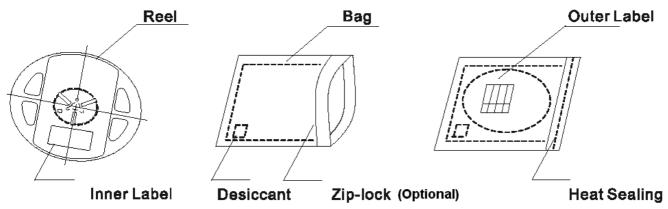


## **Dry Pack**

All SMD optical devices are **MOISTURE SENSITIVE**. Avoid exposure to moisture at all times during transportation or storage. Every reel is packaged in a moisture protected anti-static bag. Each bag is properly sealed prior to shipment.

Upon request, a humidity indicator will be included in the moisture protected anti-static bag prior to shipment.

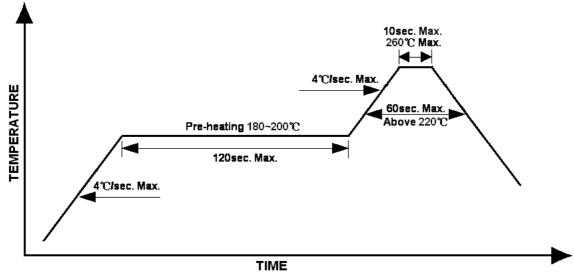
The packaging sequence is as follows:



### **Reflow Soldering**

- Recommended tin glue specifications: melting temperature in the range of 178~192 °C
- The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):







#### **Precautions**

- Avoid exposure to moisture at all times during transportation or storage.
- Anti-Static precaution must be taken when handling GaN, InGaN, and AllnGaP products.
- It is suggested to connect the unit with a current limiting resistor of the proper size. Avoid applying a reverse voltage.
- Avoid operation beyond the limits as specified by the absolute maximum ratings.
- Avoid direct contact with the surface through which the LED emits light.
- If possible, assemble the unit in a clean room or dust-free environment.

#### Reworking

- Rework should be completed within 5 seconds under 260 °C.
- The iron tip must not come in contact with the copper foil.
- Twin-head type is preferred.

#### Cleaning

Following are cleaning procedures after soldering:

- An alcohol-based solvent such as isopropyl alcohol (IPA) is recommended.
- Temperature x Time should be 50°C x 30sec. or <30°C x 3min
- Ultra sonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100 °C max, <3min

#### **Cautions of Pick and Place**

- Avoid stress on the resin at elevated temperature.
- · Avoid rubbing or scraping the resin by any object.
- Electro-static may cause damage to the component. Please ensure that the equipment is properly grounded. Use of an ionizer fan is recommended.



## IN-S66TBTRGB Top View SMD LED 0606 PCB Type

Reliability

ltom	Frequency/ lots/ samples/	Standards	Conditions
Item	failures	Reference	
	For all reliability	J-STD-020	1.) Baking at 85℃ for 24hrs
Precondition	monitoring tests according		2.) Moisture storage at 85℃/ 60% R.H. for
	to JEDEC Level 2		168hrs
	1Q/ 1/ 22/ 0	JESD22-B102-B	Accelerated aging 155℃/ 24hrs
Solderability		And CNS-5068	Tinning speed: 2.5+0.5cm/s
			Tinning: A: 215℃/ 3+1s or B: 260℃/ 10+1s
		CNS-5067	Dipping soldering terminal only
Resistance to			Soldering bath temperature
soldering heat			A: 260+/-5℃; 10+/-1s
			B: 350+/-10℃; 3+/-0.5s
	1Q/ 1/ 40/ 0	CNS-11829	1.) Precondition: 85℃ bakin g for 24hrs
Operating life test			85℃/ 60%R.H. for 168hrs
			2.) Tamb25℃; IF=20mA; duration 1000hrs
High humidity,	1Q/ 1/ 45/ 0	JESD-A101-B	Tamb: 85℃
high temperature			Humidity: 85% R.H., IF=5mA
bias			Duration: 1000hrs
High temperature	1Q/ 1/ 20	IN specs.	Tamb: 55℃
bias			IF=20mA
Dias			Duration: 1000hrs
	1Q/ 1/ 40/ 0		Tamb25℃, If=20mA,, Ip=100mA, Duty
Pulse life test			cycle=0.125 (tp=125 $\mu$ s,T=1sec)
			Duration 500hrs)
	1Q/ 1/ 76/ 0	JESD-A104-A	A cycle: -40 degree C 15min; +85 degree C
Tomporoturo		IEC 68-2-14, Nb	15min
Temperature			Thermal steady within 5 min
cycle			300 cycles
			2 chamber/ Air-to-air type
High humidity	1Q/ 1/ 40/ 0	CNS-6117	60+3℃
storage test			90+5/-10% R.H. for 500hrs
High temperature	1Q/ 1/ 40/ 0	CNS-554	100+10℃ for 500hrs
storage test			
Low temperature	1Q/ 1/ 40/ 0	CNS-6118	-40+5℃ for 500hrs
storage test			



## IN-S66TBTRGB Top View SMD LED 0606 PCB Type

**Revision History** 

Changes since last revision	Page	Version No.	Revision Date
Initial Release		V1.0	05-12-2017

#### **DISCLAIMER**

INOLUX reserves the right to make changes without further notice to any products herein to improve reliability, function or design. INOLUX does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

#### LIFE SUPPORT POLICY

INOLUX's products are not authorized for use as critical components in life support devices or systems without the express written approval of the President of INOLUX or INOLUX CORPORATION. As used herein:

- 1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
- 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.

#### **ПОСТАВКА** ЭЛЕКТРОННЫХ КОМПОНЕНТОВ

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001 Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

# Данный компонент на территории Российской Федерации Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

#### http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

#### Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru\_6 moschip.ru\_4 moschip.ru\_9