Features

- 5.5mmx5.0mm RGBIR LED
- Full color LED
- Built-in Red / Green / Blue and IR chip
- High efficiency / high light output
- Pb free and ROHS Compliant product
- SMT compatible package

Applications

- Indication
- Information boards
- Amusement equipment
- Full color application
- General use

Description

The IN-P55QDTRGBIR is PLCC8 5050 LED. It is a SMD type LED which can be used in various applications.

Recommended Solder Pattern

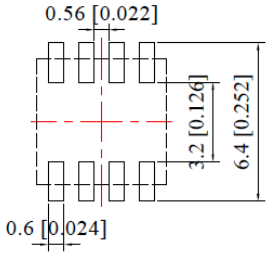
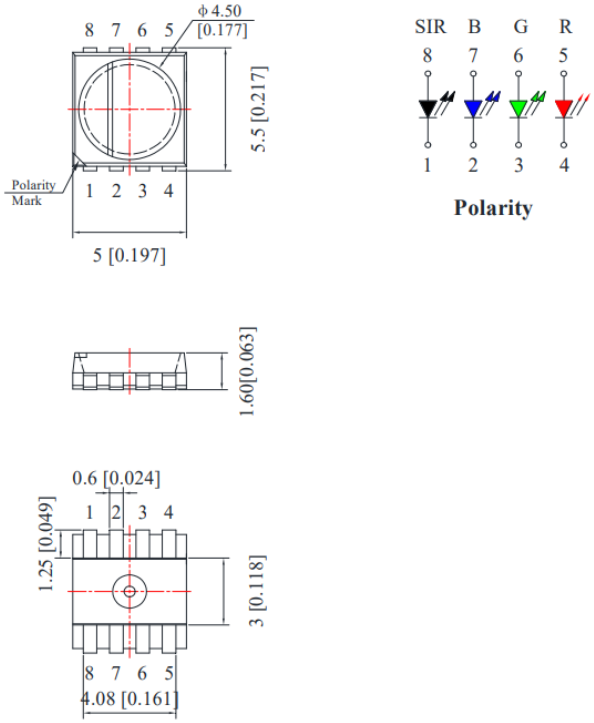


Figure 1. IN-P55QDTRGBIR Solder Pattern

Package Dimensions in mm



Notes.
1. All dimensions are in millimeters.
2. Tolerance is ± 0.25 mm unless otherwise noted

Figure 2. IN-P55QDTRGBIR Package Dimensions

Absolute Maximum Rating at Ta=25°C

Parameter	Symbol	Max.				Unit
		Red	Green	Blue	IR	
Average Forward Current	I_F	25				mA
Peak Forward Current	I_{peak}	100				mA
Reverse Voltage	V_R	Not designed for reverse operation				-
Power Dissipation	P_D	65	90	90	60	mW
Operating Temperature Range	T_{OPR}	-40 ~ 85				℃
Storage Temperature Range	T_{STO}	-40 ~ 85				℃
Lead Soldering Condition (Reflow)	T_{SOL}	Below 260℃ , Max. 5 seconds				

Notes

1. D=0.01s duty 1/10.

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).

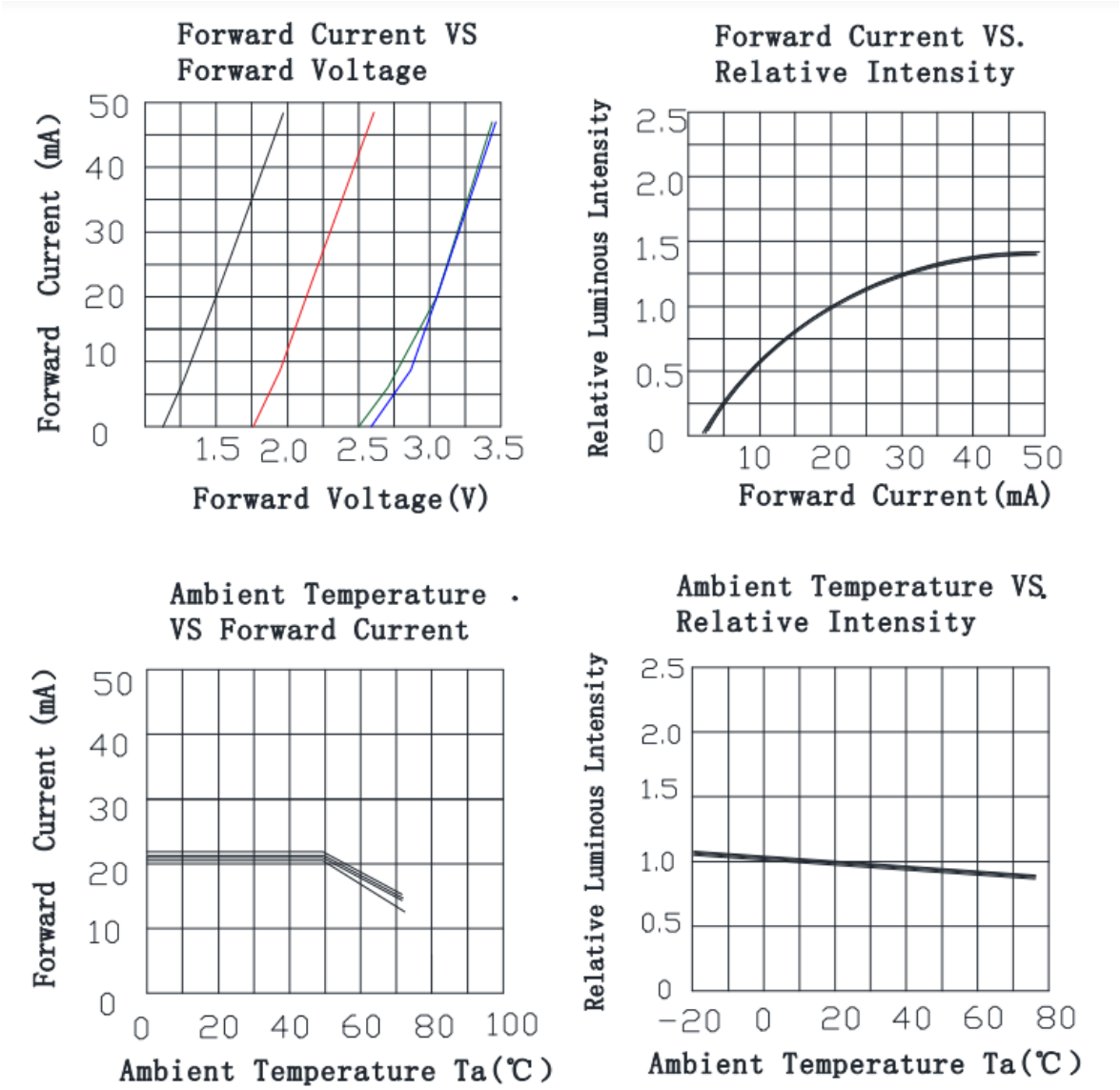
Electrical Characteristics at Ta=25°C

Product	Emission Color	I_F(mA)	V_F(V)		λd(nm)	λp(nm)	Viewing Angle (°)	Luminous Intensity I_V (mcd)	Radiant Intensity I_e (mW/sr)
			Min.	Max.	Typ.	Typ.	2θ1/2	Typ.	Typ.
IN-P55QDTRGBIR	Red	20	1.8	2.6	-	660	120	400	-
	Green	20	2.8	3.6	525	-	120	1800	-
	Blue	20	2.8	3.6	465	-	120	400	-
	IR	20	1.2	1.7	-	850	120	-	12

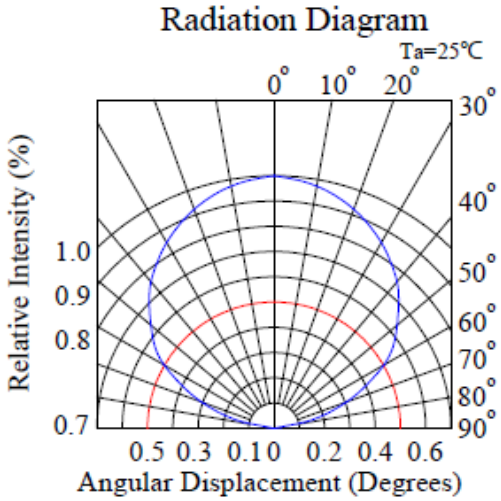
Notes

1. Performance guaranteed only under conditions listed in above tables.
2. Viewing angle(2θ1/2) ±10°

Typical Characteristic Curves



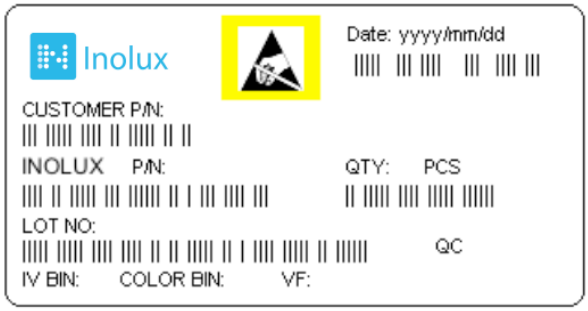
Typical Characteristic Curves – Radiation Pattern



Ordering Information

Product	Emission Color	Test Current I_F (mA)	Luminous Intensity I_V (mcd) (Typ.)	Radiant Intensity I_e (mW/sr) (Typ.)	Forward Voltage V_F (V) (Typ.)	Orderable Part Number
IN-P55QDTRGBIR	Red	20	400	-	2.0	IN-P55QDTRGBIR
	Green	20	1800	-	3.1	
	Blue	20	400	-	3.1	
	IR	20		12	1.5	

Label Specifications



Inolux P/N:

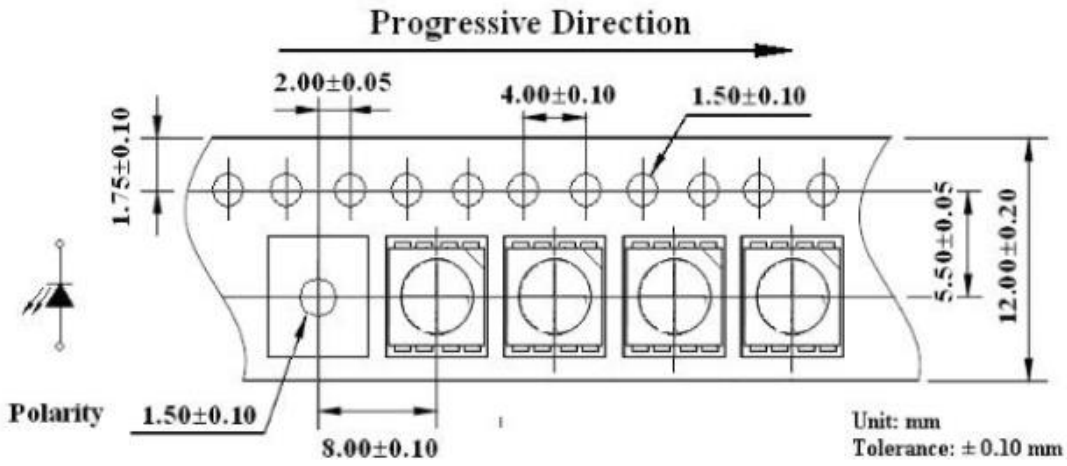
I	N	-	P	5	5	QD	T			R	G	B	IR		-	-	-	-	-
			Material	Package		Variation	Orientation	Current	Lens	Color				Chip Type		Customized Stamp-off			
Inolux SMD			PLCC - P	55QD = 5.5x5.0x1.65mm PLCC8 RGBW			T= Top Mount	(Blank) = 20mA	(Blank) = clear	R=630nm G=525nm B=453nm IR=850nm				(blank) = Standard					

Lot No.:

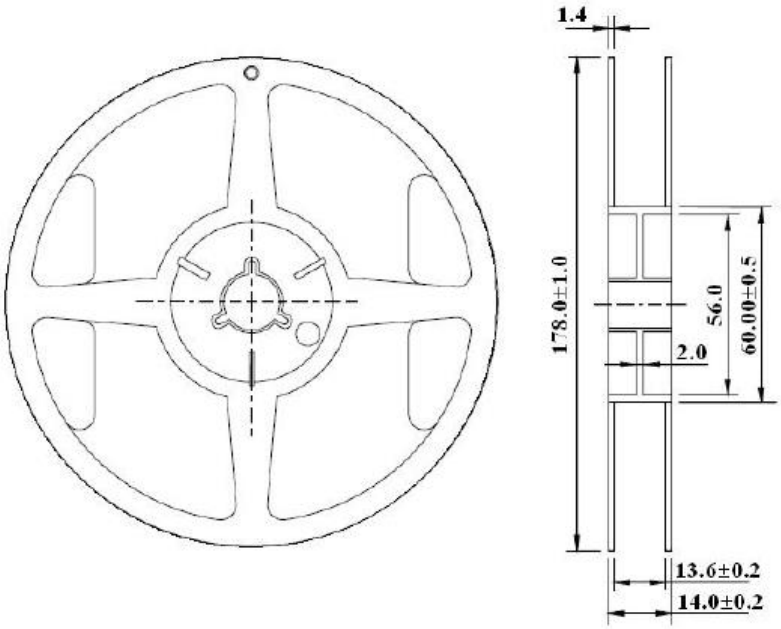
Z	2	0	1	7	01	24	001
Internal Tracker	Year (2017, 2018, ...)				Month	Date	Serial

Packaging Information: 1000pcs Per Reel

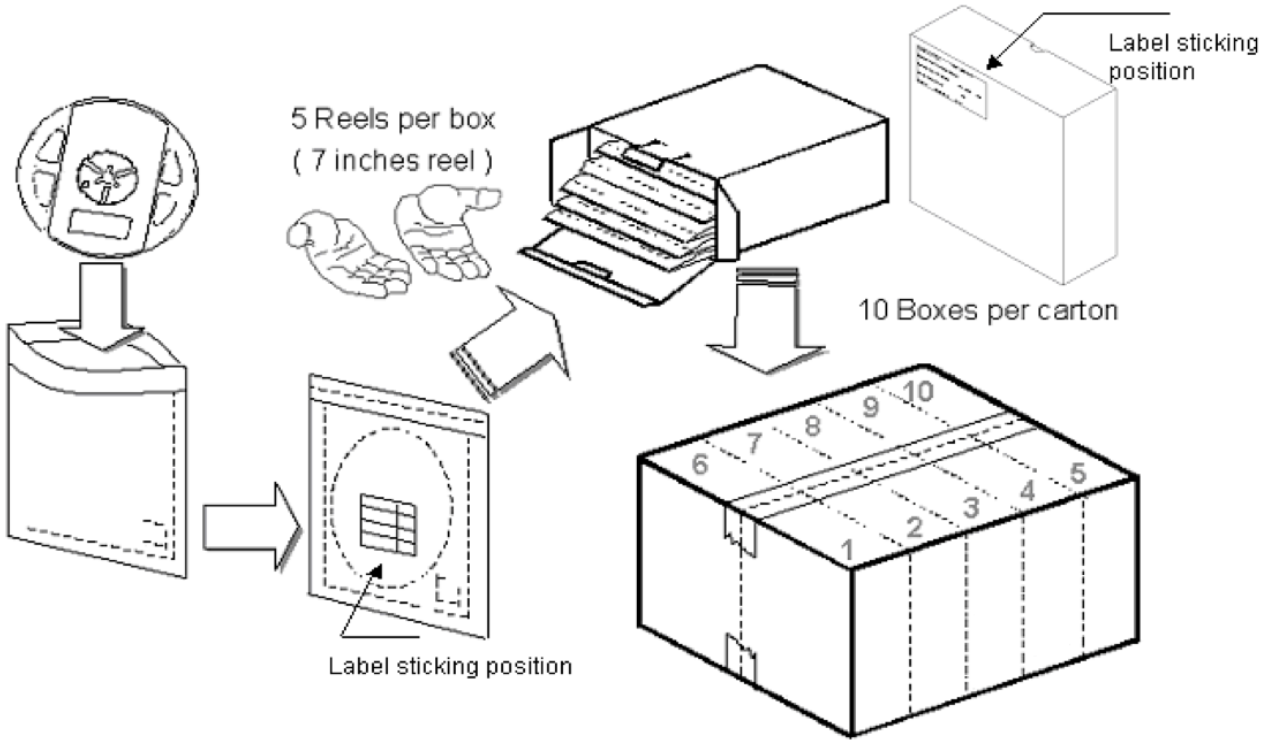
Tape Dimension



Reel Dimensions



Packing Dimension



5 boxes per carton are available depending on shipment quantity.

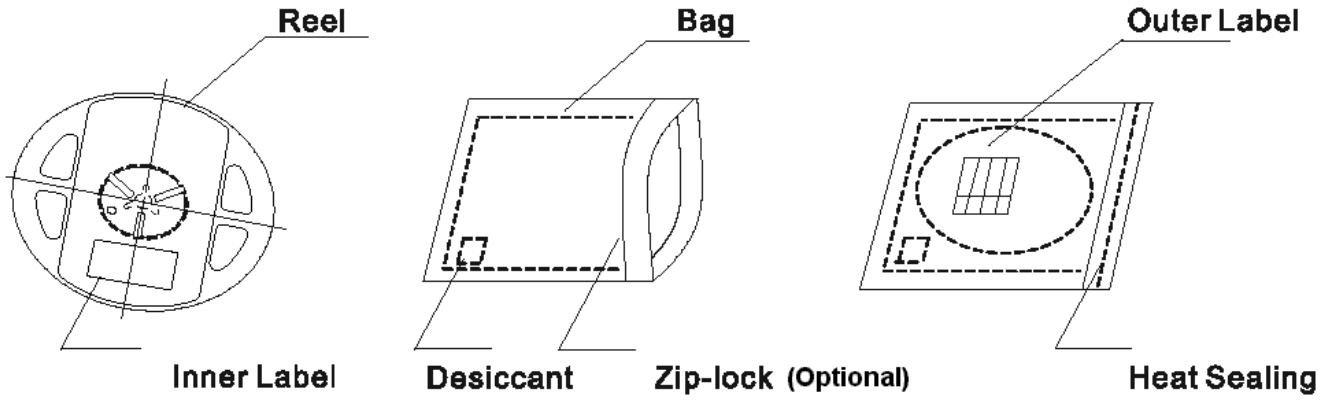
	Specification	Material	Quantity
Carrier tape	Per EIA 481-1A specs	Conductive black tape	1000 pcs
Reel	Per EIA 481-1A specs	Conductive black	
Label	IN standard	Paper	
Packing bag	220x240mm	Aluminum laminated bag/ no-zipper	One reel per bag
Carton	IN standard	Paper	Non-specified
Others: Each immediate box consists of 5 reels. The 5 reels may not necessarily have the same lot number or the same bin combinations of Iv, λ_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.

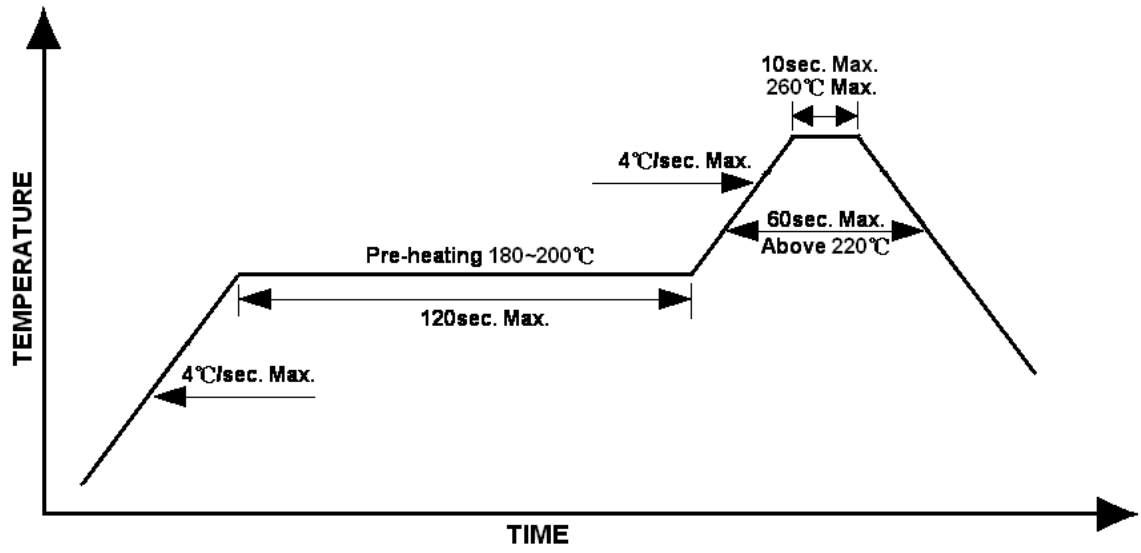
The packaging sequence is as follows:



Reflow Soldering

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

Lead-free Solder Profile



Precautions

- Avoid exposure to moisture at all times during transportation or storage.
- Anti-Static precaution must be taken when handling GaN, InGaN, and AlInGaP 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 ^{O}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^{o}C x 30sec. or <30^{o}C x 3min
- Ultra sonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100 ^{O}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.

Revision History

Changes since last revision	Page	Version No.	Revision Date
Initial Release		V1.0	02-11-2025

DISCLAIMER

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