

Features

- 1204 package (2.0 x 0.6 x 1.1mm) side-mount SMD LED
- High brightness output
- AlInGaP and InGaN chip technology
- Compact package size
- High reliability performance
- Clear lens configuration

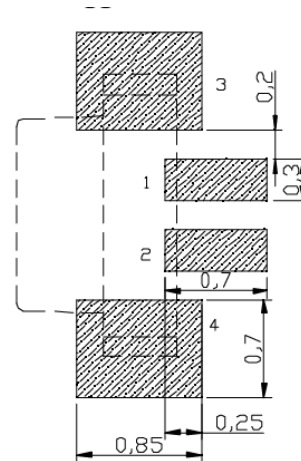
Applications

- Consumer electronics
- Wearables
- Automobile aftermarket
- Industrial equipment

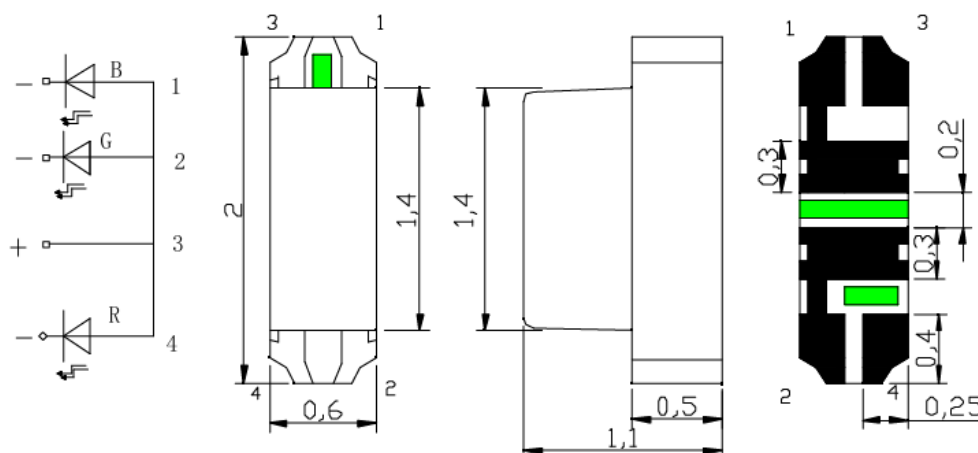
Description

The IN-S85TBS5R5G5B is a tri-color 0805 side view package with versatile design capabilities. It is a PCB type molding style LED which can be used in various applications.

Recommended Solder Pattern



Package Dimensions in mm



Notes.

1. All dimensions are in millimeters.
2. Tolerance is ± 0.10 mm unless otherwise noted

Absolute Maximum Rating $T_A = 25^\circ\text{C}$ (Note)

Product	Emission Color	P_d (mW)	I_F (mA)	I_{FP}^* (mA)	V_R (V)	T_{OP} ($^\circ\text{C}$)	T_{ST} ($^\circ\text{C}$)
IN-S85TBS5R5G5B	Red	65	25	70	5	$-30^\circ\text{C} \sim +85^\circ\text{C}$	$-40^\circ\text{C} \sim +90^\circ\text{C}$
	Green	90		90			
	Blue	90		90			

Note

1. Condition for I_{FP} 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 $T_A = 25^\circ\text{C}$ (Note)

Product	Emission Color	I_F (mA)	V_F (V)		λ (nm)			Viewing Angle ($^\circ$)	IV (mcd)
			typ.	max	λ_D	λ_P	$\Delta\lambda$	2 θ 1/2	typ.
IN-S85TBS5R5G5B	Red	5	2.0	2.2	622	630	20	120	35
	Green	5	2.9	3.1	518	523	30	120	230
	Blue	5	2.9	3.1	467	460	25	120	45

Note

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

Luminous Intensity Bin (mcd) :

Color	Bin Code	Spec. Range
Red	H1	28.5-35.0 mcd
	H2	35.0-45.0 mcd
	G1	45.0-56.0 mcd
Green	M1	180.0-230.0 mcd
	M2	230.0-285.0 mcd
	N1	285.0-350.0 mcd
Blue	H2	35.0-45.0mcd
	G1	45.0-56.0 mcd
	G2	56.0-72.0 mcd

Note: It maintains a tolerance of $\pm 10\%$ on luminous intensity

Wavelength Bin (nm) :

Color	Bin Code	Spec. Range
Red	A	615-620 nm
	B	620-625 nm
	C	625-630 nm
Green	C	518-521 nm
	D	521-524 nm
	E	524-527 nm
	F	527-530 nm
Blue	A	461-464 nm
	B	464-467 nm
	C	467-470 nm

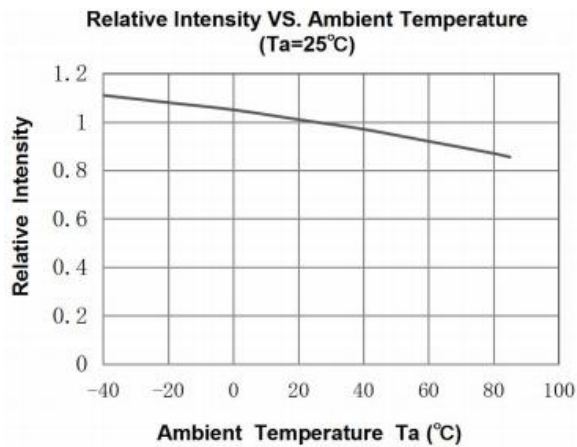
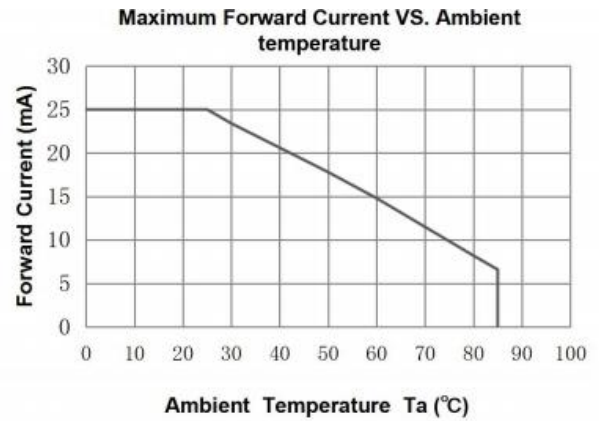
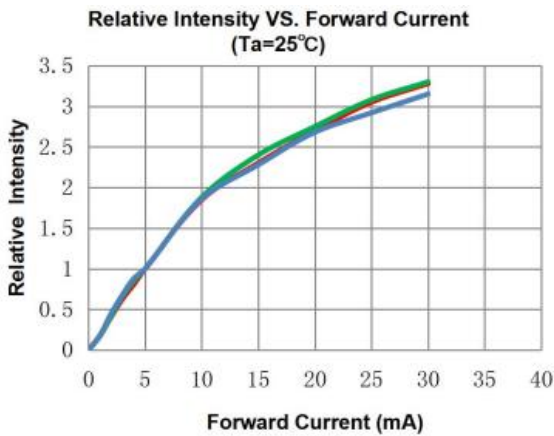
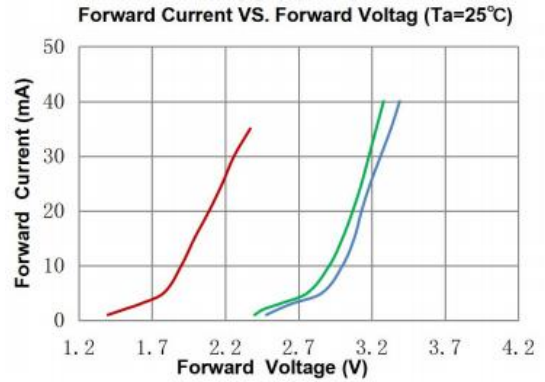
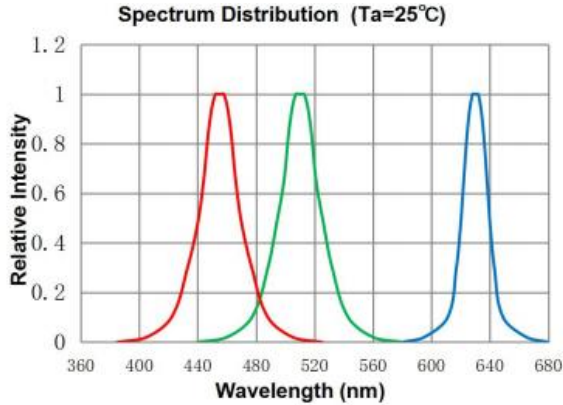
Note: It maintains a tolerance of $\pm 0.5\text{nm}$ on color

Forward Voltage Bin (V) :

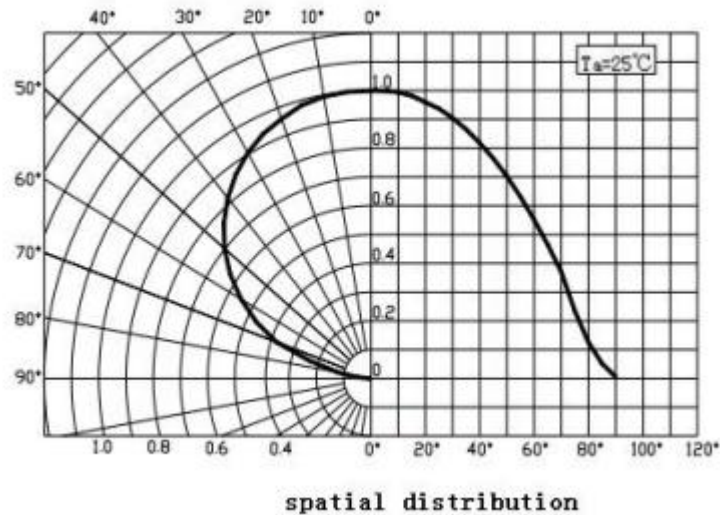
Color	Bin Code	Spec. Range
Red	1	1.8-2.0 V
	2	2.0-2.2 V
Green	4	2.5-2.7 V
	5	2.7-2.9 V
	6	2.9-3.1 V
Blue	4	2.5-2.7 V
	5	2.7-2.9 V
	6	2.9-3.1 V

Note: It maintains a tolerance of $\pm 0.05\text{V}$ on forward voltage measurements

Typical Characteristic Curves – R,G,B



Typical Characteristic Curves – Radiation Pattern



Ordering Information

Orderable Part Number	Emission Color	Test Current I_F (mA)	Luminous Intensity I_V (mcd) (Typ.)	Forward Voltage V_F (V) (Typ.)
IN-S85TBS5R5G5B	Red	5	35	2.0
	Green	5	230	2.9
	Blue	5	45	2.9

Label Specifications

 Inolux			Date: yyyy/mm/dd
CUSTOMER P/N: 			
INOLUX P/N: 		QTY: PCS 	
LOT NO: 		QC	
IV BIN:	COLOR BIN:	VF:	

Inolux P/N:

I	N	-	S	8	5	T	B	S	5	R	5	G	5	B	-	-	-	-	-
Inolux SMD			Material	Package	Variation		Orientation	Current	Color	Current	Color	Current	Color		Customized Stamp-off				
			S = PCB Type	85TB = 2.0 x 0.6 x 1.1mm		S= Side Mount	5 = 5mA	R= 625nm	5 = 5mA	G= 525nm	5 = 5mA	B= 464nm	-						

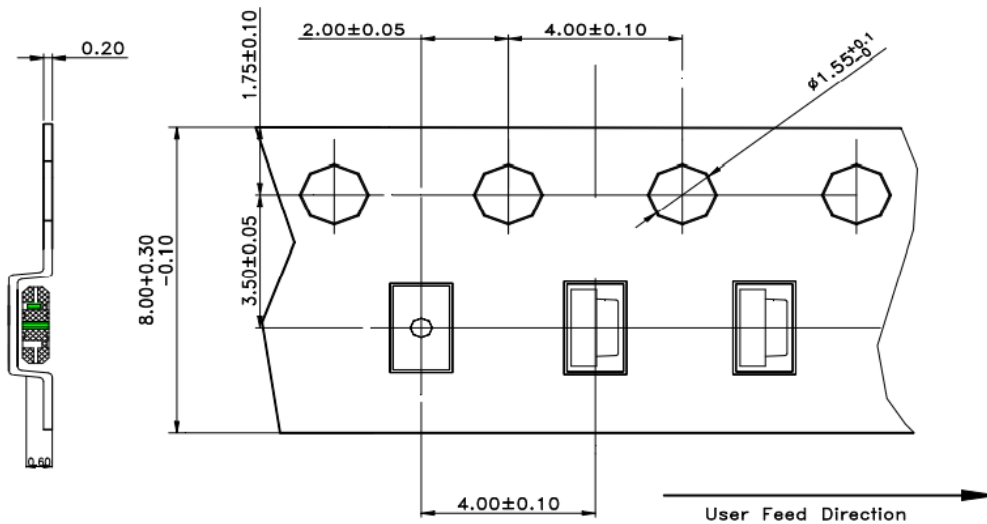
3

Lot No.:

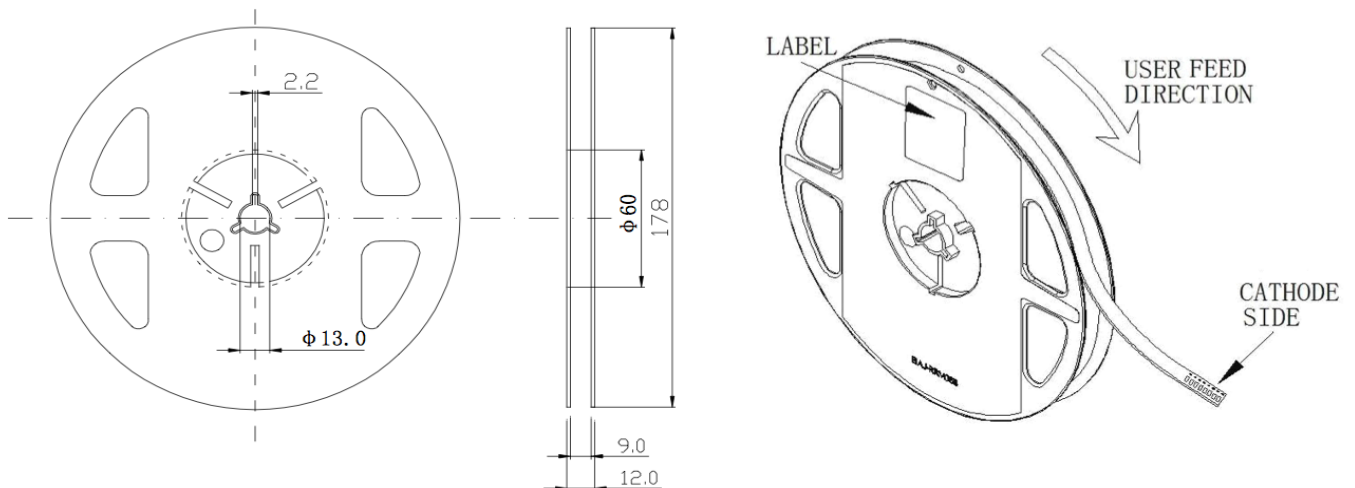
Z	2	0	1	7	01	24	001
Internal Tracker	Year (2017, 2018,)				Month	Date	Serial

Packaging Information: 3000pcs Per Reel

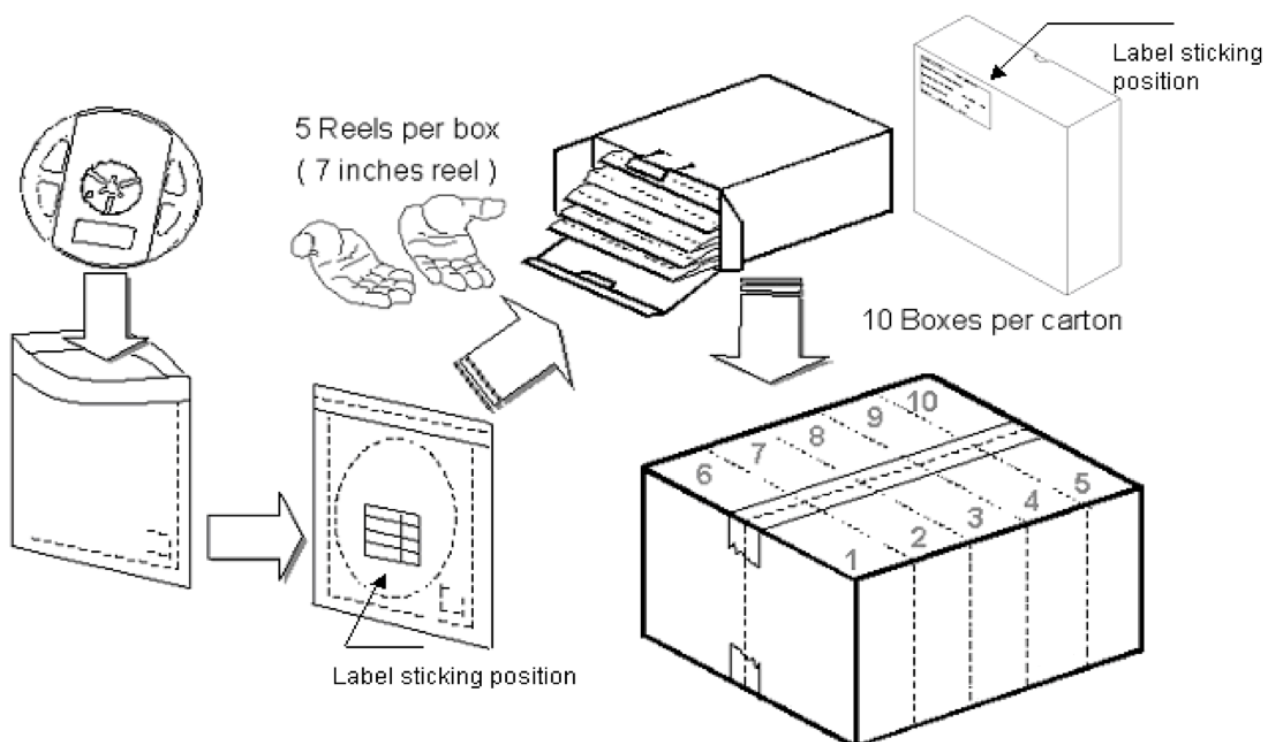
Tape Dimension



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	3000pcs per reel
Reel	Per EIA 481-1A specs	Conductive black	
Label	Standard	Paper	
Packing bag	220x240mm	Aluminum laminated bag/ no-zipper	One reel per bag
Carton	Standard	Paper	Non-specified

Others:

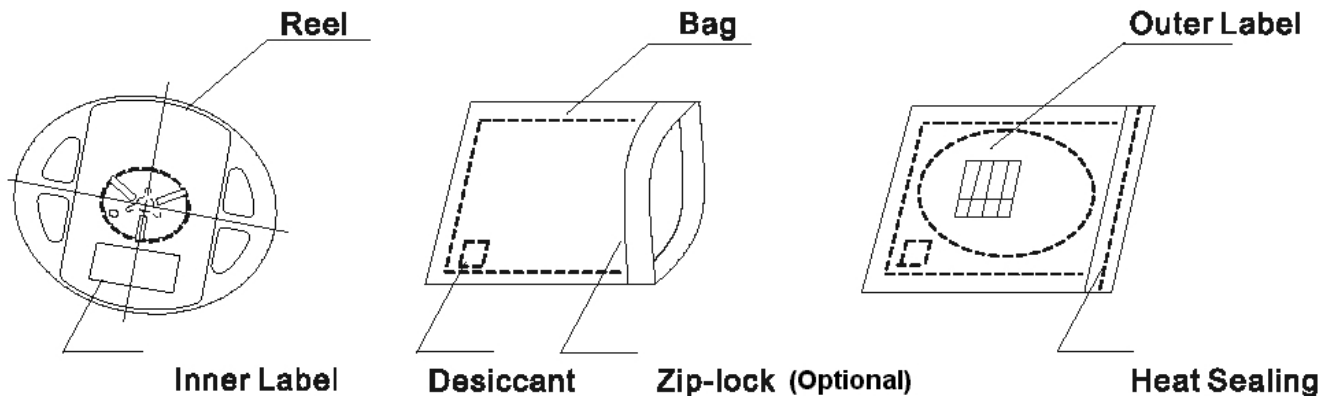
Each immediate box consists of 5 reels. The 5 reels may not necessarily have the same lot number or the same bin combinations of Iv, λ_D and Vf. Each reel has a label identifying its specification; the immediate box consists of a product label as well.

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.

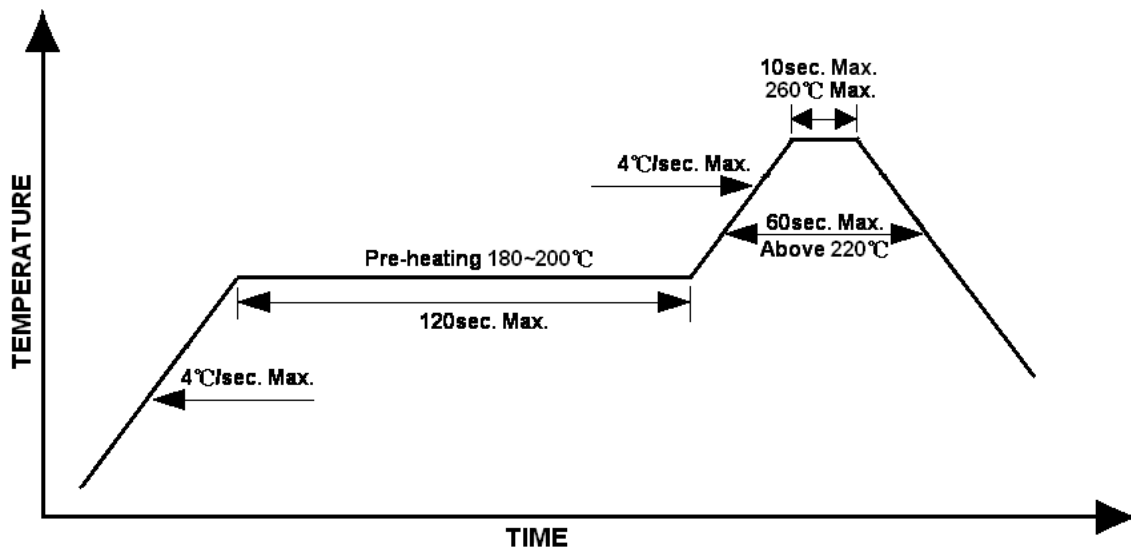
The packaging sequence is as follows:



Reflow Soldering

- Recommended tin glue specifications: melting temperature in the range of 178~192 °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 °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.

Revision History

Changes since last revision	Page	Version No.	Revision Date
Initial Release		V1.0	12-02-2021
Updated (Bin code))	3	V1.1	07-27-2026

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