Harvatek Surface Mount CHIP LEDs Data Sheet
B18W1IRP-A1C0001X4U1930

DISCLAIMER....3
LIFE SUPPORT POLICY....3
PRODUCT SPECIFICATIONS....4
ATTENTION: ELECTROSTATIC DISCHARGE (ESD) PROTECTION....4
LABEL SPECIFICATIONS....5
ELECTRO-OPTICAL CHARACTERISTICS....6
PACKAGE OUTLINE DIMENSION AND RECOMMENDED SOLDERING PATTERN FOR REFLOW SOLDERING....7
CHARACTERISTICS OF B18W1IRP....8
PACKAGING....10
TAPE DIMENSION....10
REEL DIMENSION....11
PACKING....11
DRY PACK....12
BAKING....12
PRECAUTIONS....12
REFLOW SOLDERING....13
REWORKING....13
CLEANING....13
CAUTIONS OF PICK AND PLACE....14
REVISE HISTORY....14

DISCLAIMER

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Life Support Policy

HARVATEK'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 HARVATEK or HARVATEK INTERNATIONAL. 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.

Product Specifications

Item	Specification	Material	Quantity
Peak Wavelength λ_p	Typ: 850nm @100 mA/ T_S = 25℃		
Radiant Intensity Ie	Typ: 23 mW/sr @100 mA/ T_S = 25℃		
Forward Voltage V_F	1.4~2.0 V @100 mA/ T_S = 25℃; Tolerance: ± 0.1V		
Reverse Current I_R	< 10 μA @ V_R = 5V		
Resin	Clean	Epoxy	
Carrier tape	EIA 481-1A specs	Conductive black tape	4000ea/reel
Reel	EIA 481-1A specs	Conductive black	
Label	HT standard	Paper	
Packing bag	220x240mm	Aluminum laminated bag/ no-zipper	One reel per bag
Carton	HT 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, CIE and Vf. Each reel has a label identifying its specification; the immediate box consists of a product label as well.

Note :This is shipped test conditions

※Remarks: This product should be operated in forward bias. If a reverse voltage is continuously applied to the product, such operation can cause migration resulting in LED damage.

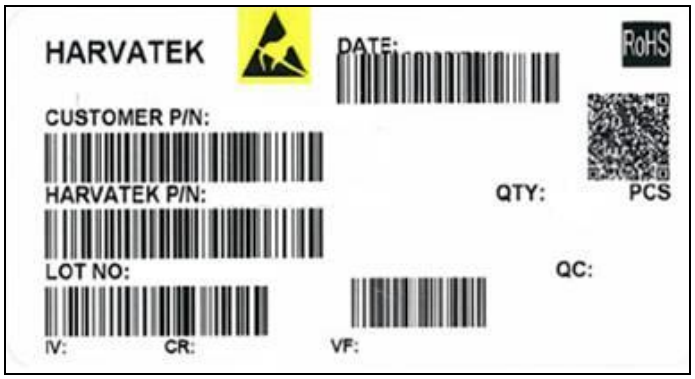
ATTENTION: Electrostatic Discharge (ESD) protection



The symbol to the left 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.

Label Specifications



■Harvatek P/N:

B 18W 1 IRP- A1C 0001 X4 U1930

Product	Dice Q'ty	Current	Taping	Customer Code
PCB	1:Single	100mA	1. Taping style 2. Q'ty	Customer Product Code

Package	Color	Series Number
1.6(L)x0.8(W)x0.95(H) mm	IRP: 850 nm	X001~XZZZ

■ Lot No.:

1	2	3	4	5	6	7	8	9	10
E	1	A	1	A	2	2	L	1	2

Code 1 2	Code 3	Code 4	Code 5	Code 6	Code 7	Code 8	Code 9	Code 10
	Mfg. Year	Mfg. Month	Mfg. Date	Consecutive number		Special code		
Internal Tracing Code	2010-A 2011-B 2012-C ... 2018-I/J 2019-K ... 2022-N 2023-P ...	1:Jan. 2:Feb. ... A:Oct. B:Nov. C:Dec.	1:A 2:B 3:C ... 26:Z 27:7 28:8 29:9 30:3 31:4	01~ZZ		000~ZZZ		

Absolute Maximum Rating at 25℃

Symbol	Parameters	Ratings	Units	Notes
I_F	Forward Current	100	mA	
I_{FP}	Peak Forward Current	1	A	1
V_R	Reverse Voltage	5	V	
T_{opr}	Operating Temperature	-40 ~ +85	℃	
T_{stg}	Storage Temperature	-40 ~ +100	℃	
T_{sol}	Soldering Temperature	260	℃	2
P_d	Total Power Dissipation	130	mW	

Notes:

1. I_{FP} Conditions--Pulse Width≦100μs and Duty≦1%.

2. Soldering time≦5 seconds.

Electro-Optical Characteristics

Symbol	Parameters	Test conditions	Min	Typ	Max	Units	Notes
I_e	Radiant Intensity	I_F=100mA		23		mW/sr	3
λ_P	Peak Wavelength	I_F=100mA	-	850	-	nm	
$\Delta\lambda$	Spectral Bandwidth	I_F=100mA	-	50	-	nm	
V_F	Forward Voltage	I_F=100mA	1.4	-	2.0	V	4
I_R	Reverse Current	V_R=5V	-	-	10	μA	
$2\theta_{1/2}$	Angle of Half Intensity	I_F=100mA	-	80	-	deg	

Notes:

3. Radiant Intensity (I_e) Bin:

Color	Bin Code	Spec. Range
IRP	PL	17.5~20 mw/sr
	PMQ	20.~30 mw/sr
	PRU	30~40 mw/sr

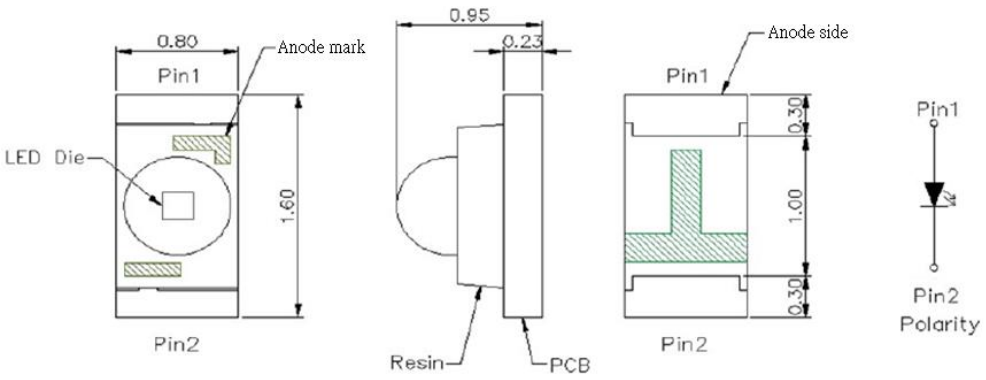
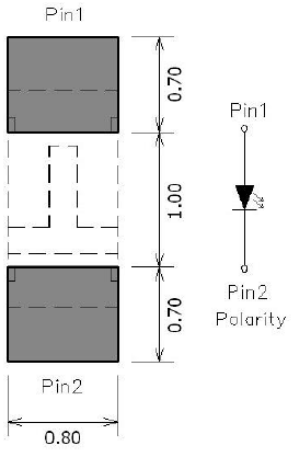
Notes:

4. Forward Voltage (V_F) Bin:

Color	Bin Code	Spec. Range
IRP	D6	1.4-1.6 V
	E5	1.6-1.8 V
	E6	1.8-2.0 V

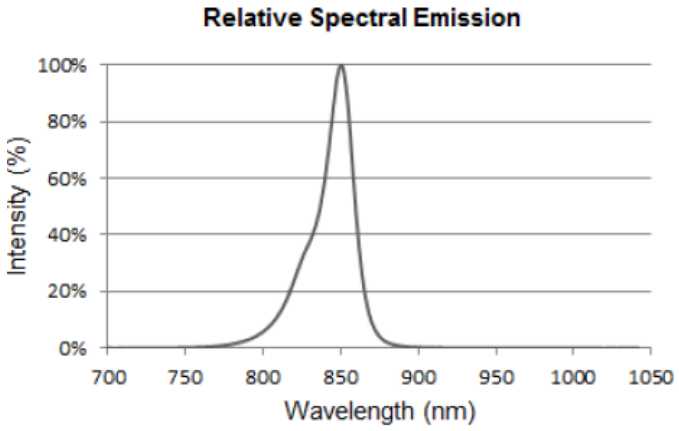
Package Outline Dimension and Recommended Soldering Pattern for Reflow Soldering

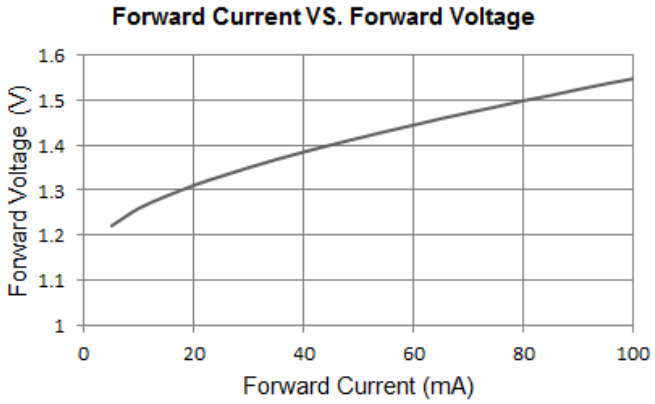
(Unit: mm Tolerance: +/-0.1)

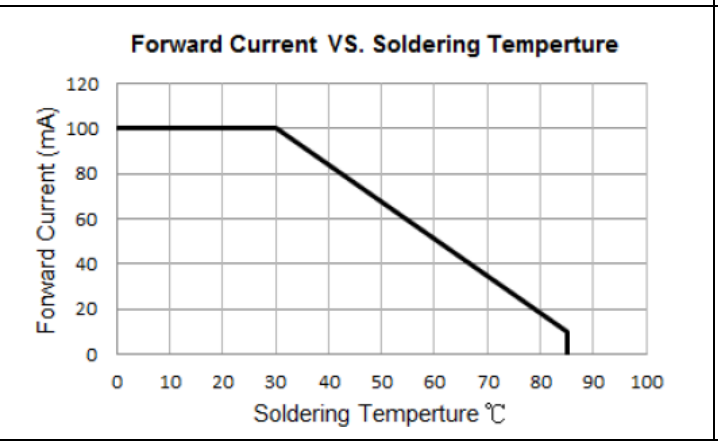
Outline Dim.	Soldering Pattern
	

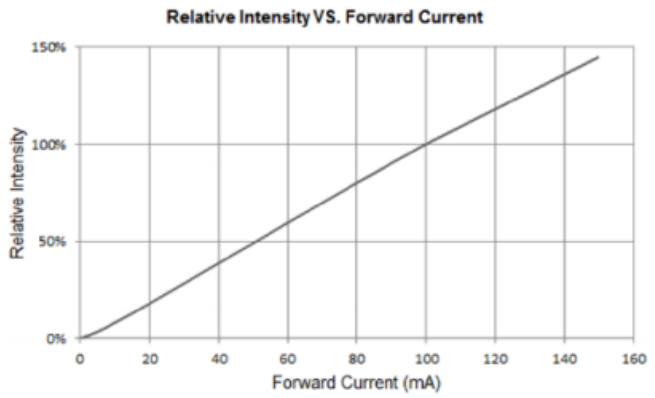
Soldering terminals may shift in the x, y direction.

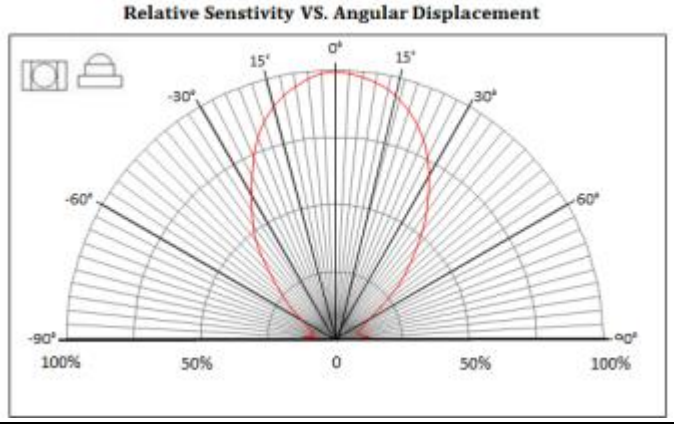
Characteristics of B18W1IRP









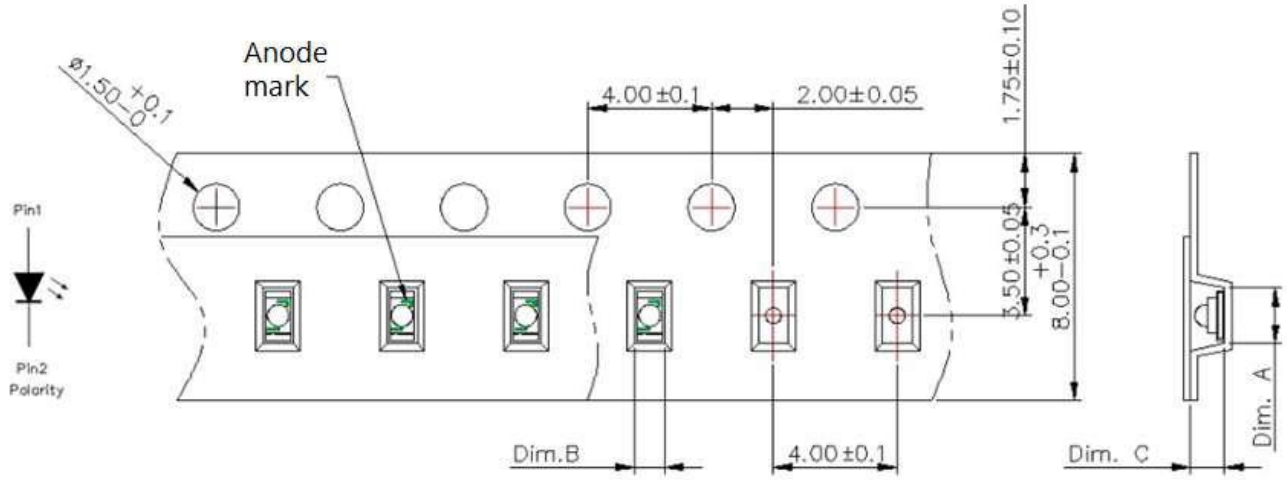


Precaution for Use

1. The chips should not be used directly in any type of fluid such as water, oil, organic solvent, etc.
2. When the LEDs are illuminating, the maximum ambient temperature should be first considered before operation.
3. LEDs must be stored in a clean environment. A sealed container with a nitrogen atmosphere is necessary if the storage period is over 3 months after shipping.
4. The LEDs must be used within 4 weeks after unpacked. Unused products must be repacked in an anti-electrostatic package, folded to close any opening and then stored in a dry and cool space.
5. The appearance and specifications of the products may be modified for improvement without further notice.
6. The LEDs are sensitive to the static electricity and surge. It is strongly recommended to use a grounded wrist band and anti-electrostatic glove when handling the LEDs.If a voltage over the absolute maximum rating is applied to LEDs, it will damage LEDs.Damaged LEDs will show some abnormal characteristics such as remarkable increase of leak current, lower turn-on voltage and getting unlit at low current.

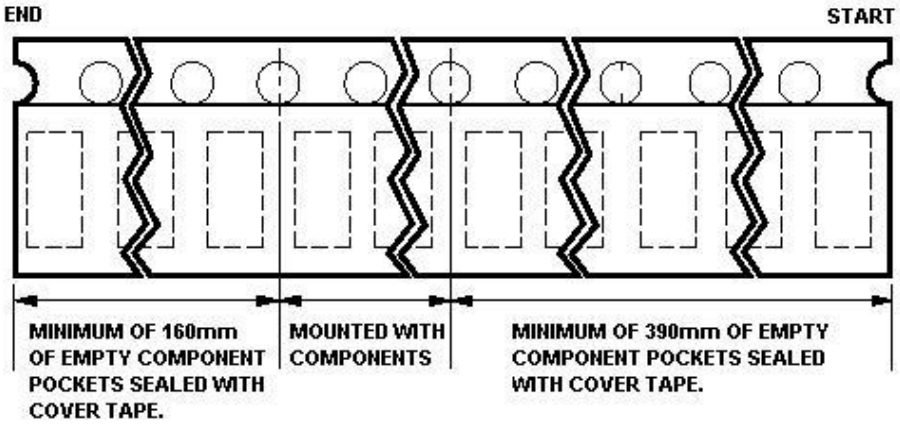
Packaging

Tape Dimension

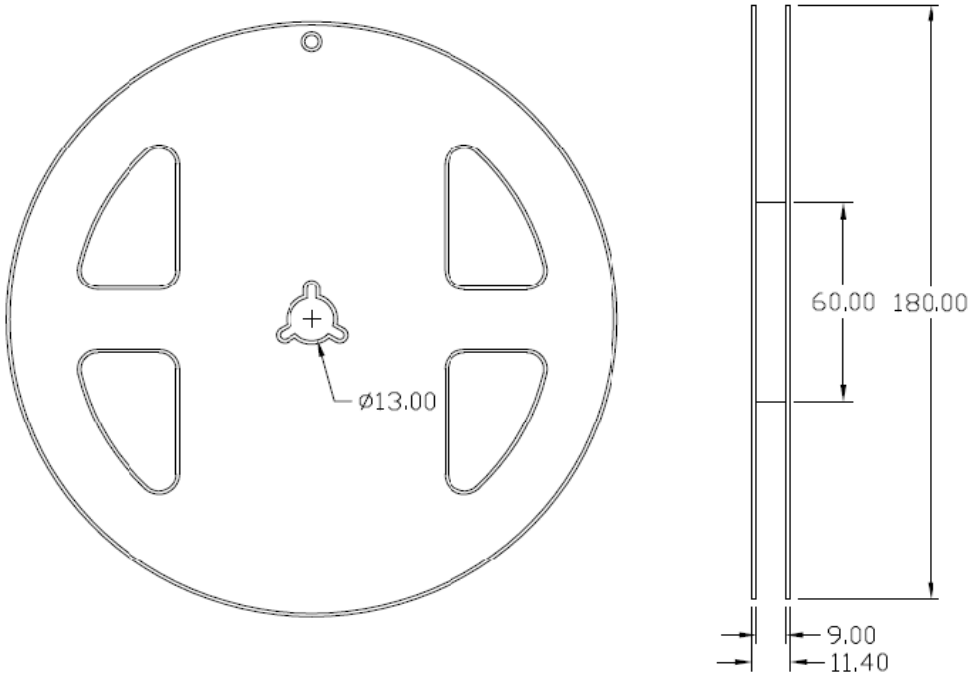


Dim. A	Dim. B	Dim. C	Q'ty/Reel
1.85±0.05	0.88±0.05	0.95±0.05	4K

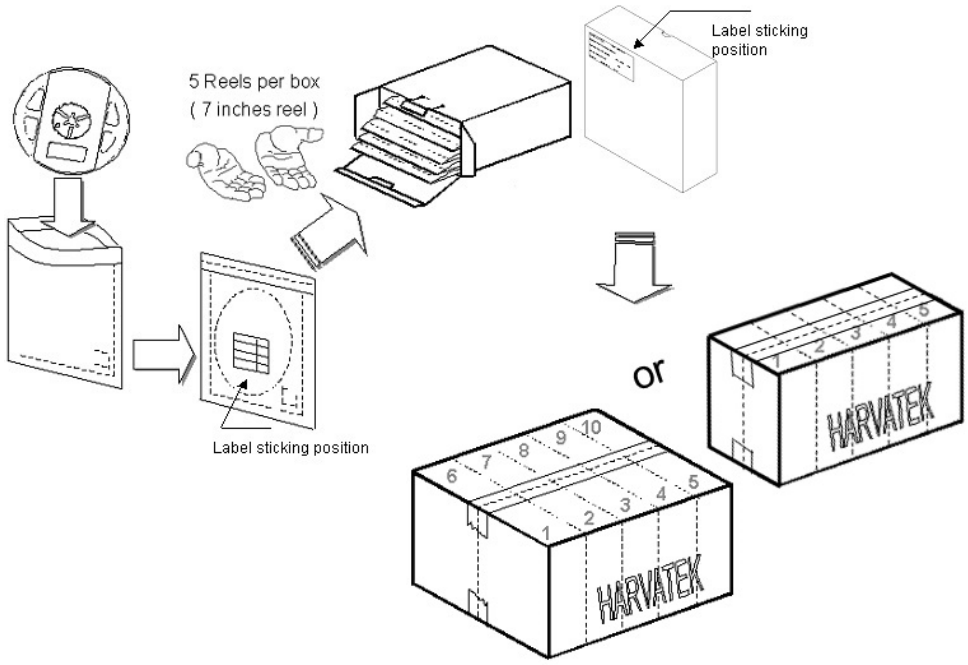
Unit: mm



Reel Dimension



Packing



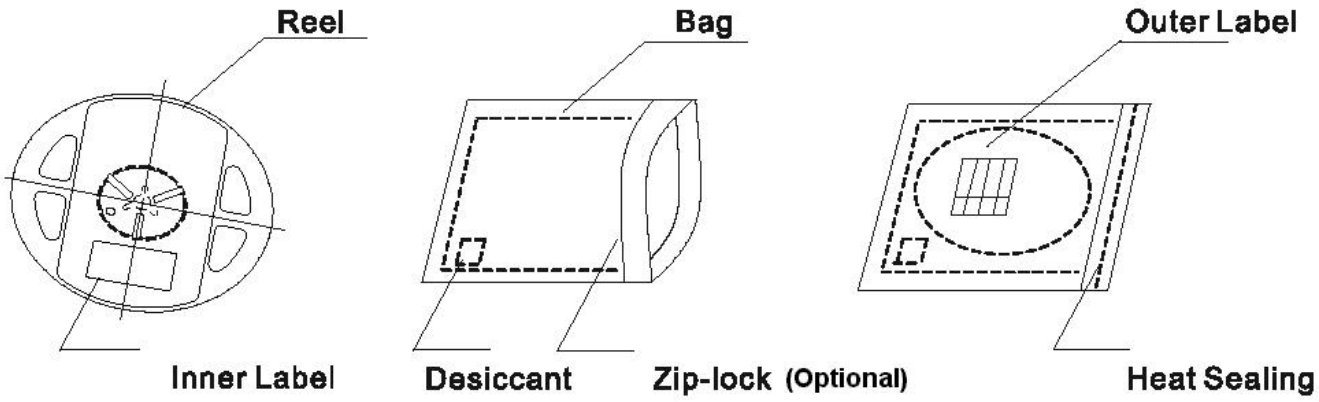
5 or 10 boxes per carton is available depending on shipment quantity.

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.

A humidity indicator will be included in the moisture protected anti-static bag prior to shipment.

The packaging sequence is as follows:



Baking

Baking before soldering is recommended when the package has been unsealed for 4 weeks. The conditions are as followings:

1. 60±3℃×(12~24hrs)and<5%RH, taped reel type.
2. 100±3℃×(45min~1hr), bulk type.
3. 130±3℃×(15min~30min), bulk type.

Precautions

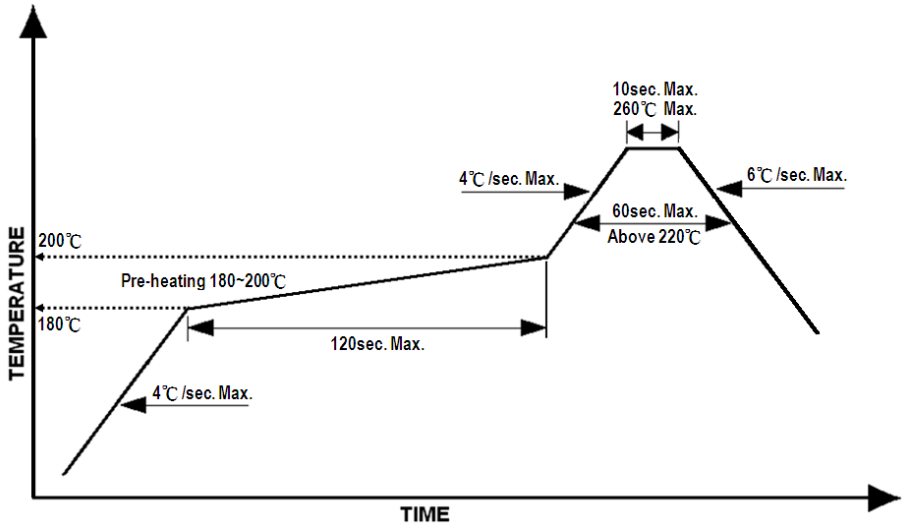
1. Avoid exposure to moisture at all times during transportation or storage.
2. Anti-Static precaution must be taken when handling GaN, InGaN, and AlInGaP products.
3. It is suggested to connect the unit with a current limiting resistor of the proper size. Avoid applying a reverse voltage beyond the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

Reflow Soldering

Recommend soldering paste specifications:

1. Operating temp.: Above 220℃ ,60sec
2. Peak temp.:260℃ Max.,10sec Max.
3. Reflow soldering should not be done more than two times.
4. Never take next process until the component is cooled down to room temperature after reflow.
5. The recommended reflow soldering profile (measuring on the surface of the LED terminal) is following:

Lead-free Solder Profile



Reworking

- Rework should be completed within 5 seconds under 260℃.
- 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℃ x 30sec. or <30℃ x 3min
- Ultra sonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100℃ max, <3min

Cautions of Pick and Place

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

Revise History

Rev.	Descriptions	Date	Page
1.0	-	04/10/2019	-

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

HARVATEK:

F10Q1USD-20C000242U1930 T15B1DND-20P000112U1930 B19Y1NB--20C000113U1930
B2591IR--20C000132U1930 B3803FCH-20C001112U1930 B1811USD-20C000613U1930
T15B1UYG-20C000212U1930 B3C73RBG02D0006H4U1930 B1861TX--05P000334U1930
B2102UDUG20C000133U1930 B2151IR-20C000133U1930 B2972USUG20D000914U1930
T4642PTIRM3B000351U1930 B2102USNG20C000133U1930 B3SK3RGB-F6C0001HOU1930
B4301IR--20C000482U1930 T1691NB--20C000212U1930 V1081NB--20C000342U1930
B1211URO-20C000134U1930 B1591USD-20C001922U1930 B1811TX--05PP05413U1930
B2601UD--20D000123U1930 HV-I8UG60G-MP9AA-U1930 B1591NB--20C000212U1930
B1911UD--20D001014U1930 B2102USNB20C000833U1930 B2G32UDUG20C000113U1930
B2G32USNB20C000513U1930 F1081IR--A1C000242U1930 B2612UYUG20D000212U1930