

**Harvatek Surface Mount CHIP LED Data Sheet
HT-191UD**

Official Product	HT Part No. HT-191UD	Customer Part No.		Data Sheet No.
Tentative Product	*****	*****		
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DISCLAIMER..... 3

PRODUCT SPECIFICATIONS 4

ATTENTION: ELECTROSTATIC DISCHARGE (ESD) PROTECTION4

LABEL SPECIFICATIONS 5

PRODUCT FEATURES 7

ELECTRO-OPTICAL CHARACTERISTICS.....7

PACKAGE OUTLINE DIMENSION AND RECOMMENDED SOLDERING PATTERN FOR REFLOW

SOLDERING.....7

ABSOLUTE MAXIMUM RATINGS7

CHARACTERISTICS OF HT-191 SERIES.....8

PACKAGING 9

TAPE DIMENSION9

REEL DIMENSION.....10

PACKING.....10

DRY PACK.....11

PRECAUTIONS.....11

REFLOW SOLDERING..... 12

REWORKING.....12

CLEANING.....12

REVISE HISTORY.....13

Official Product	HT Part No. HT-191UD	Customer Part No.		Data Sheet No.
Tentative Product	*****	*****		
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0	Page 2/13

DISCLAIMER

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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.

Official Product	HT Part No. HT-191UD	Customer Part No.		Data Sheet No.
Tentative Product	*****	*****		
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0	Page 3/13

Product Specifications

	Specification	Material	Quantity
Iv	45-180mcd @20mA/ Ta= 25 ^o ;Tolerance: ± 10%		
λ _D	600-612nm @20mA/ Ta= 25 ^o C;Tolerance: ± 0.5nm		
Vf	1.6-2.4V @20mA/ Ta= 25 ^o C ;Tolerance: ± 0.05V		
Ir	< 100 μA @ V _R = 5 V		
Resin	Diffused	Epoxy resin	
Carrier tape	EIA 481-1A specs	Conductive black tape	4000pcs per 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, λ_D and Vf. Each reel has a label identifying its specification; the immediate box consists of a product label as well.

ATTENTION: Electrostatic Discharge (ESD) protection

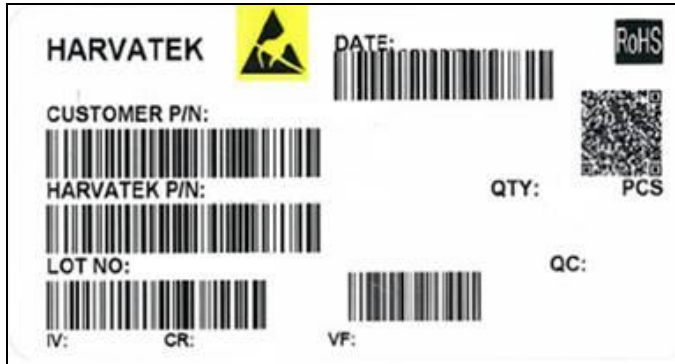


The symbol to the left denotes that ESD precaution is needed. ESD protection for GaP and AlGaAs based chips is necessary even though they are relatively safe in the presence of low static-electric discharge. Parts built with AlInGaP, GaN, or/and InGaN based chips are **STATIC SENSITIVE devices**. ESD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

Official Product	HT Part No. HT-191UD	Customer Part No.		Data Sheet No.
Tentative Product	*****	*****		
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0	Page 4/13

Label Specifications



■ Harvatek P/N:

HT-191 UD

Series Name	Emitting Color
HT-191 1.6(L)x0.8(W)x0.6(H) mm	UD: Ultra Bright Orange @ 20mA

■ 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 2013-D . .	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		

Official Product	HT Part No. HT-191UD	Customer Part No.		Data Sheet No.
Tentative Product	*****	*****		
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0	Page 5/13

■ Luminous Intensity (Iv) Bin:

Color	Bin Code	Spec. Range
Orange	P	45.0-71.5 mcd
	Q	71.5-112.5 mcd
	R	112.5-180 mcd

■ Dominant Wavelength (λ_D) Bin:

Color	Bin Code	Spec. Range
Orange	B	600-603 nm
	C	603-606 nm
	D	606-609 nm
	E	609-612 nm

■ Forward Voltage (Vf) Bin:

Color	Bin Code	Spec. Range
Orange	-	1.6-2.4 V

Official Product	HT Part No. HT-191UD	Customer Part No.	Data Sheet No.
Tentative Product	*****	*****	
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0
			Page 6/13

Product Features

Electro-Optical Characteristics

(I_F @ 20mA, T_a 25°C)

Code for parts	Lighting Color		V_F (V)		λ (nm)			I_V (mcd)
			typ	max	λ_D	λ_P	$\Delta\lambda$	Typical
HT-191UD	Ultra Bright Orange	AllnGaP	1.9	2.4	605	611	17	112.5

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.	

Absolute Maximum Ratings

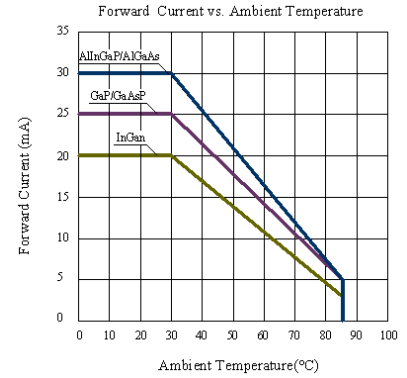
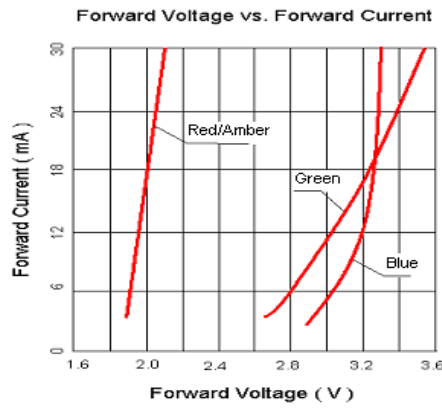
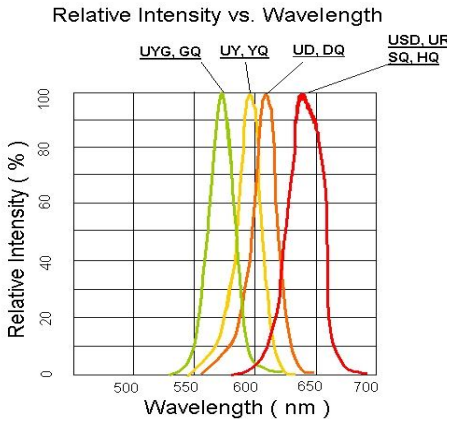
(T_a 25°C)

Series	P_d (mW)	I_F (mA)	I_{FP} (mA)	V_R (V)	I_R (uA)	T_{OP} (°C)	T_{ST} (°C)
191UD	72	30	100	5	<100@ $V_R = 5$	-30~+80	-40~+85

** Condition for I_{FP} is pulse of 1/10 duty and 0.1msec width

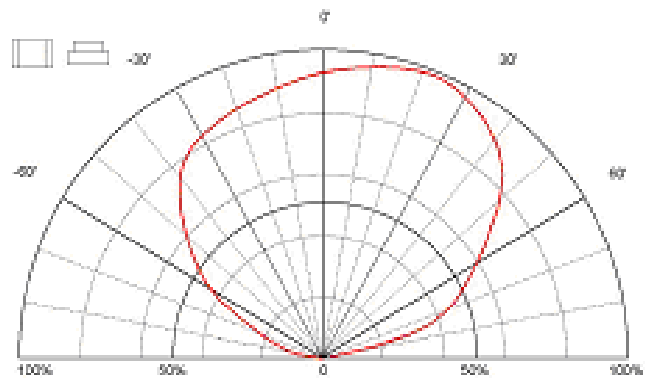
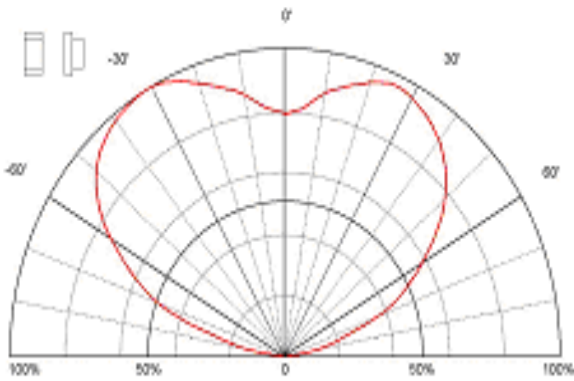
Official Product	HT Part No. HT-191UD	Customer Part No.		Data Sheet No.
Tentative Product	*****	*****		
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0	Page 7/13

Characteristics of HT-191 Series



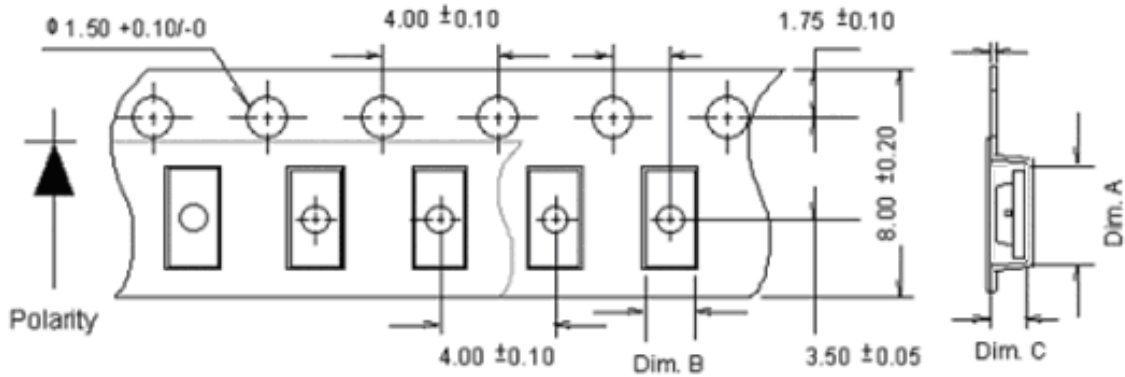
Directive Characteristics

Directive Characteristics



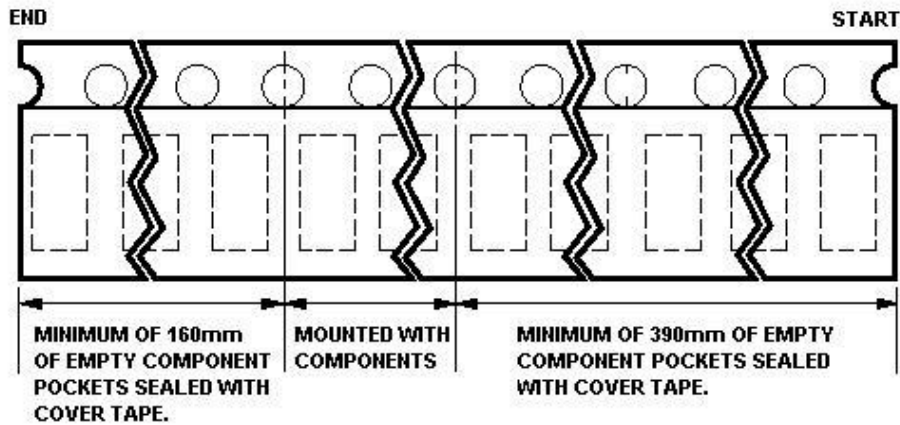
Official Product	HT Part No. HT-191UD	Customer Part No.	Data Sheet No.
Tentative Product	*****	*****	
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0
			Page 8/13

Packaging
Tape Dimension



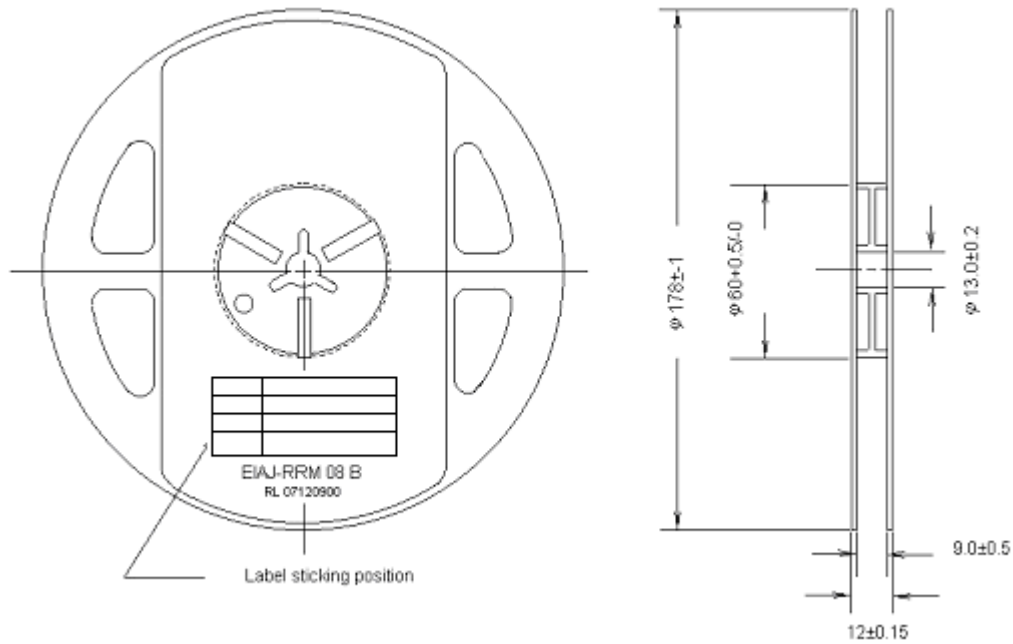
Part No.	Dim. A	Dim. B	Dim. C	Q'ty/Reel
HT-191	1.86±0.10	0.89±0.10	0.87±0.10	4K

Unit: mm

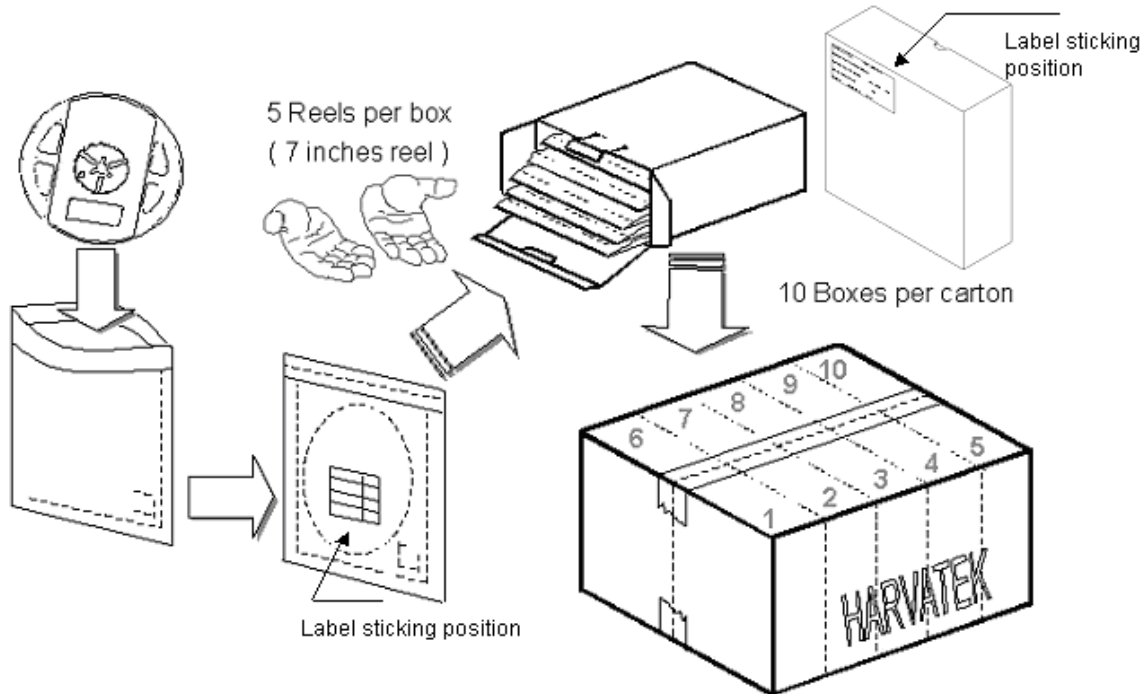


Official Product	HT Part No. HT-191UD	Customer Part No.	Data Sheet No.
Tentative Product	*****	*****	
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0
			Page 9/13

Reel Dimension



Packing



5 boxes per carton is available depending on shipment quantity.

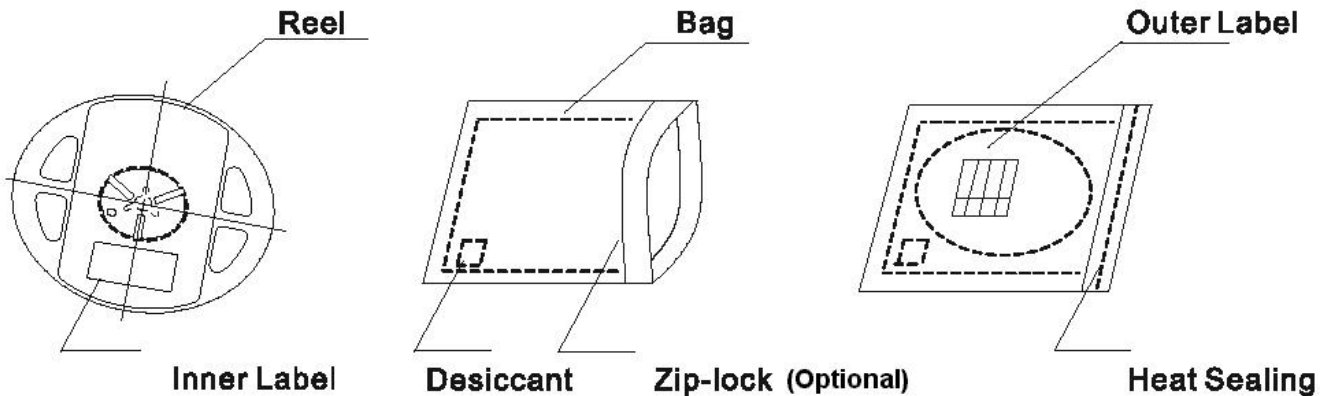
Official Product	HT Part No. HT-191UD	Customer Part No.	Data Sheet No.
Tentative Product	*****	*****	
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0
			Page 10/13

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:



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.

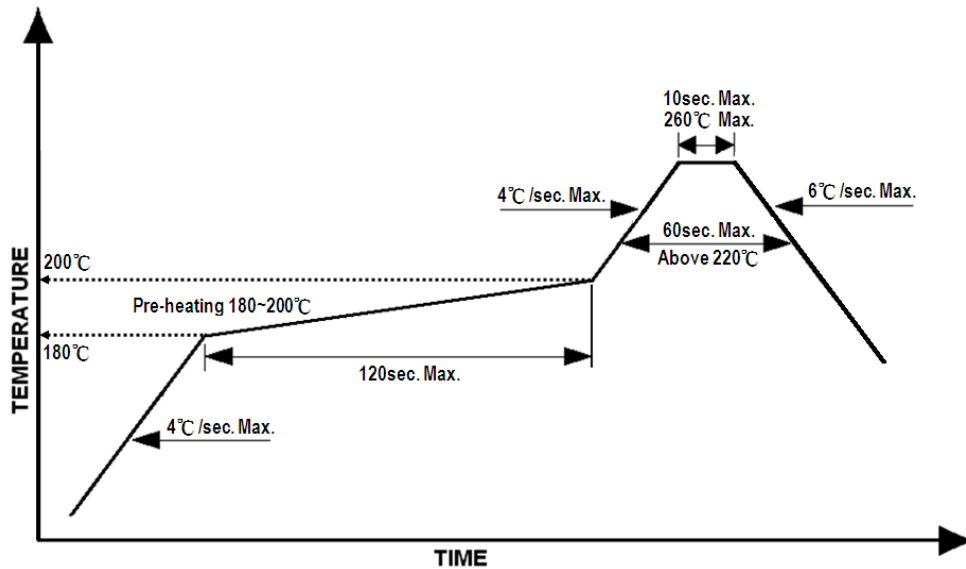
Official Product	HT Part No. HT-191UD	Customer Part No.		Data Sheet No.
Tentative Product	*****	*****		
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0	Page 11/13

Reflow Soldering

Recommend soldering paste specifications:

1. Operating temp.: Above 220 °C ,60 sec.
2. Peak temp.:260 °CMax.,10sec Max.
3. Never attempt next process until the component is cooled down to room temperature after reflow.
4. The recommended reflow soldering profile (measured on the surface of the LED terminal) is as following:

Lead-free Solder Profile



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
- Ultrasonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100 °C max, <3min

Cautions of Pick and Place

Official Product	HT Part No. HT-191UD	Customer Part No.	Data Sheet No.
Tentative Product	*****	*****	
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0 Page 12/13

- 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	-	07/14/2011	-

Official Product	HT Part No. HT-191UD	Customer Part No.		Data Sheet No.
Tentative Product	*****	*****		
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		07/14/2011	Version 1.0	Page 13/13