

T E N T A T I V E

TLBD1050(T20),TLEGD1050(T20)

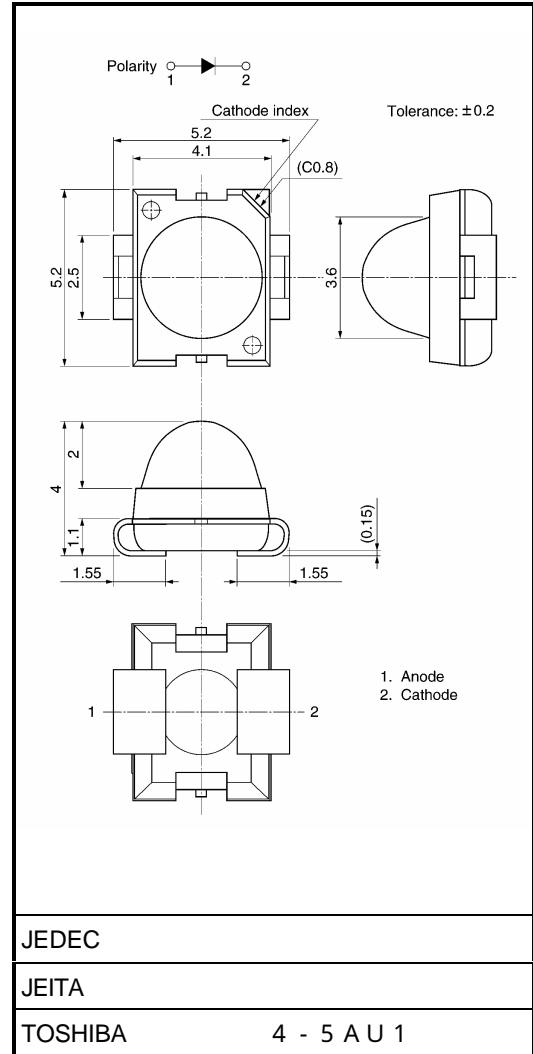
Panel Circuit Indicator

- 5.2 (L) × 5.2 (W) × 4.0 (H) mm size
- 3.6mm transparent lens top type
- Colors : Blue d = 470 nm (typ.)
: Green d = 528 nm (typ.)
- Clear luminescence is obtained.
- High Operating Temperature
: Topr = - 40~100°C(85)
: Tstg= - 40~110
- Can be mounted using surface mounter.
- Reflow Soldering is possible.
- Standard Embossed Taping
8 mm pitch : T20(400pcs/Reel)
- Applications : message signboards, backlighting, amusement, etc

Color and Material

Product Name	Color	Material
TLBD1050	Blue	InGaN
TLEGD1050	Green	InGaN

unit mm



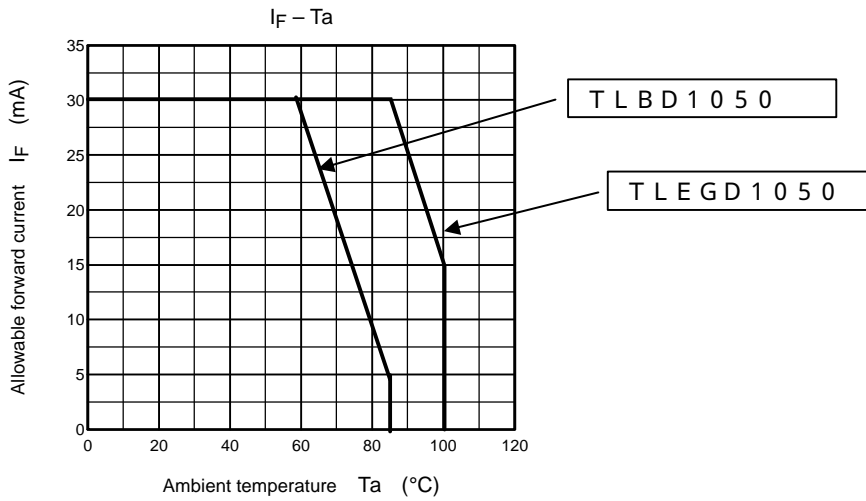
Weight: 0 . 0 8 5 g



For part availability and ordering information please call Toll Free: 800.984.5337
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Maximum Ratings (Ta = 25°C)

Product Name	Forward Current I _F (mA)	Reverse Voltage V _R (V)	Power Dissipation P _D (mW)	Operating Temperature T _{opr} ()	Storage Temperature T _{stg} ()
TLBD1050	30	4	120	-40~85	-40~110
TLEGD1050	30	4	120	-40~100	-40~110



Electrical Characteristics (Ta = 25°C)

Product Name	Forward Voltage V _F			Reverse Current I _R		
	Min.	Typ.	Max	I _F	V _R	
TLBD1050	2.7	3.3	4.0	20	10	
TLEGD1050	2.7	3.3	4.0			
Unit	V			mA	μA	V

Optical Characteristics-1 (Ta = 25°C)

Product Name	Luminous Intensity I _v			I _F	Corresponding brightness rank sign (Note 1)
	Min	Typ	Max		
TLBD1050	153	400		20	-
TLEGD1050	476	1300		20	-
Unit	mcd	mcd	mcd	mA	

Note 1: The brightness rank classification executes based on the following rank table, and is classified by the reel.
However, the delivery ratio of each classification is not defined.

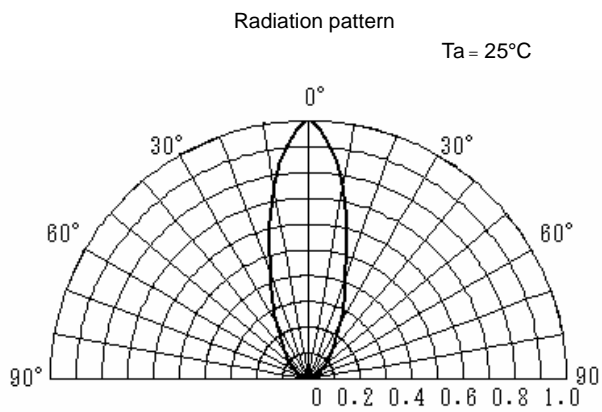
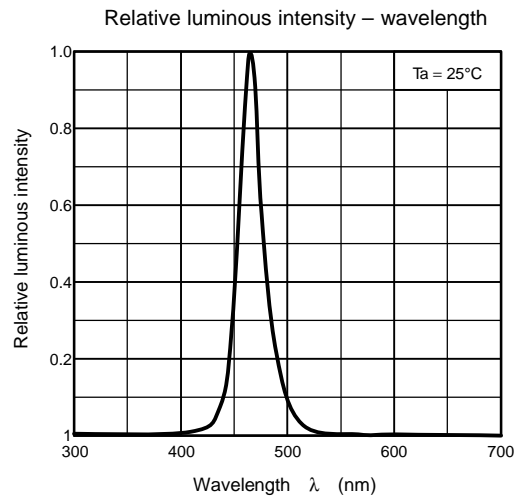
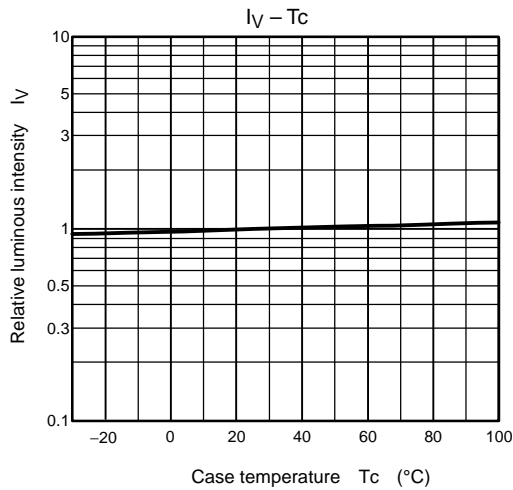
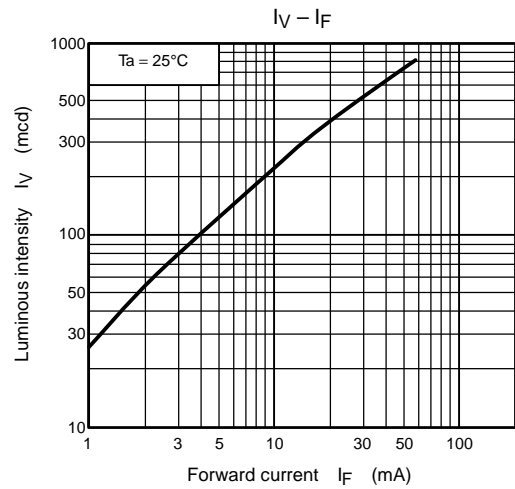
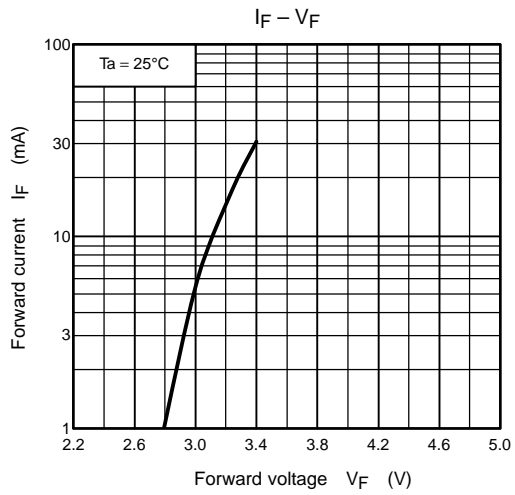
Optical Characteristics-2 (Ta = 25°C)

Product Name	Emission Spectrum							
	Peak Emission Wavelength λ _p			Δλ Typ	Dominant Wavelength λ _d			I _F
	Min	Typ	Max		Min	Typ	Max	
TLBD1050	—	468	—	25	463	470	479	20
TLEGD1050	—	518	—	35	518	528	540	
Unit	nm			nm	nm			mA

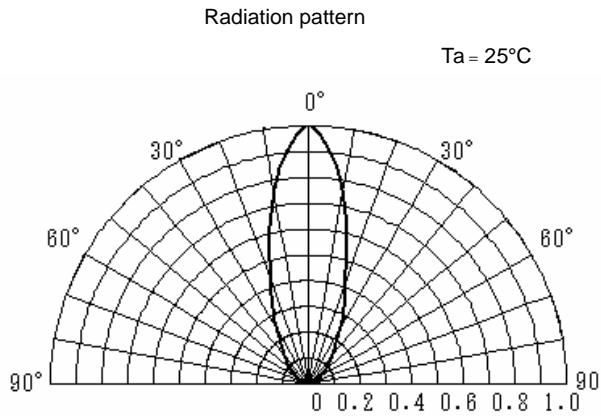
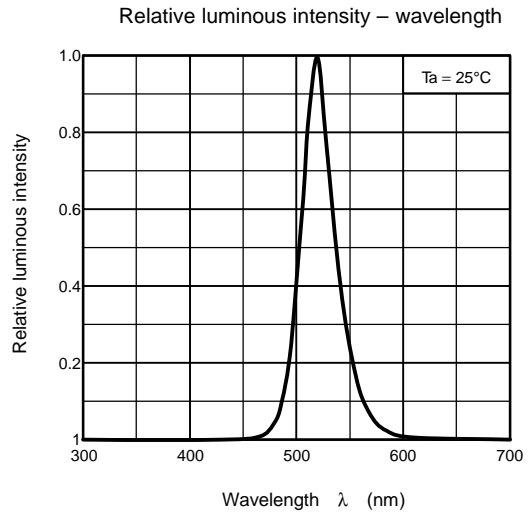
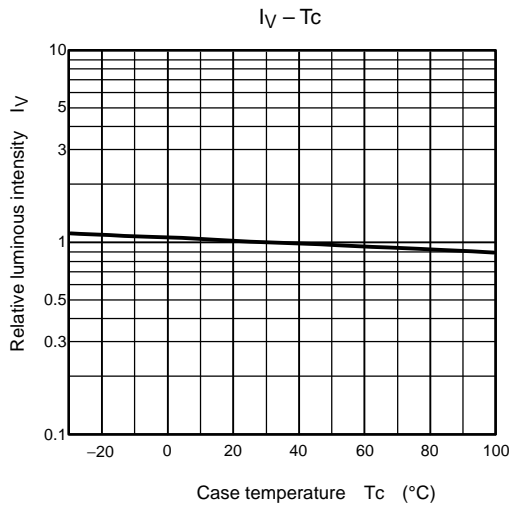
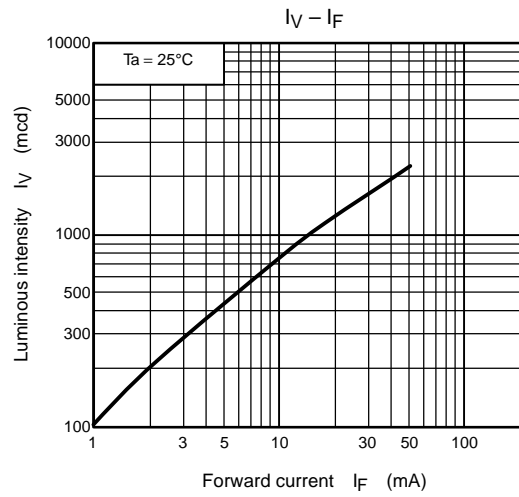
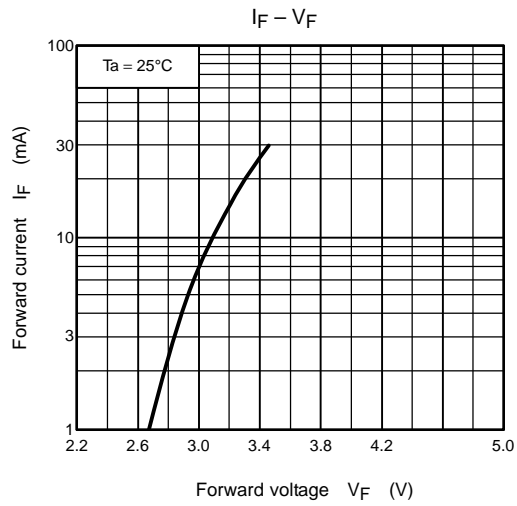
Note 2: Caution

- ESD withstand voltage according to MIL STD 883D, Method 3015.7 : =1000V
- When handling this LED, take the following measures to prevent the LED from being damaged or otherwise adversely affected.
 - 1) Use a conductive tablemat and conductive floor mat, and ground the workbench and floor.
 - 2) Operators handling laser diodes must be grounded via a high resistance (about 1MO). A conductive strap is good for this purpose.
 - 3) Ground all tools including soldering irons.
- This product is designed as general display light source usage, and it has applied the measurement standard that matched with the sensitivity of human's eyes. Therefore, it is not intended for usage of functional application (ex. Light source for sensor , optical communication and etc) .

TLBD1050



TLEGD1050



Packaging

These LED devices are packed in an aluminum envelope with silica gel and a moisture indicator to prevent moisture absorption. The optical characteristics of the devices may be affected by exposure to moisture in the air before soldering and they should therefore be stored under the following conditions:

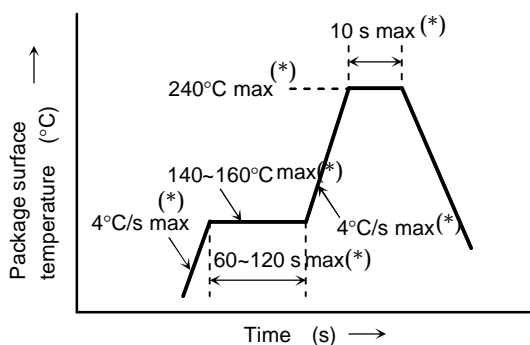
1. This moisture-proof bag may be stored unopened for up to 12 months under the following conditions.
 Temperature: 5°C~30°C
 Humidity: 90% (max)
2. After the moisture-proof bag has been opened, the devices should be assembled within 72 hours in an environment of 5°C to 30°C/70% RH or below.
3. If, upon opening, the moisture indicator card shows humidity of 30% or above (when the indication color changes to pink) or the expiration date has passed, the devices should be baked while packed in the tape reel. After baking, use the baked devices within 72 hours, but perform baking only once.
 Baking conditions: 60 ±5°C, for 12 to 24 hours.
 Expiration date: 12 months from the sealing date, which is imprinted on the same side as this label.
4. Repeated baking may cause the peeling strength of the tape to change, leading to trouble in mounting. Also, be sure to prevent damage to the device from static electricity during the baking process.
5. Any breakage in the laminate packing material will cause the hermeticity of the product to deteriorate. Do not toss or drop the packed devices.

Mounting Method

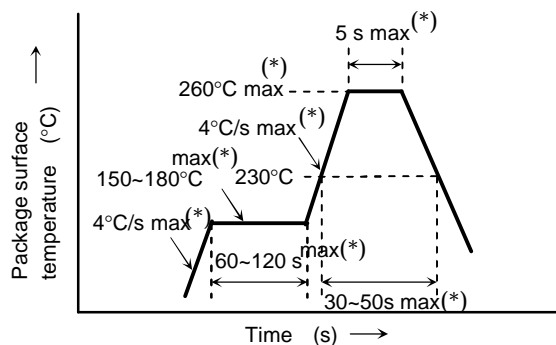
Soldering

- Reflow soldering (example)

Temperature profile for Pb soldering (example)

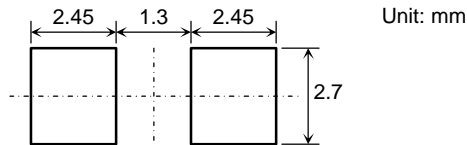


Temperature profile for Pb-free soldering (example)



- The product is evaluated using above reflow soldering conditions. No additional test is performed exceed the condition (i.e. the condition more than (*)MAX values) as a evaluation. Please perform reflow soldering under the above conditions.
- Perform the first reflow soldering in accordance with the above temperature profile and within 72 hours of opening the package.
- Second time reflow
 In case of second reflow soldering should be performed within 72 hours of the first reflow under the above conditions.
 Storage conditions before the second reflow soldering: 5 ~ 30°C, 70% RH max
- Do not perform flow soldering.
- Make any necessary soldering corrections manually.
 (only once at each soldering point)
 Soldering iron: Less than 25 W
 Temperature : Less than 350°C or less
 Time : within 3 s (Up to 1time per place)

Recommended soldering pattern



Cleaning

When cleaning is required after soldering, Toshiba recommends the following cleaning solvents. Our dipping tests (carried out under the recommended conditions) confirm that these solvents have no effect on semiconductor devices. In selecting the cleaning solvent you will actually use, be sure to take into account the cleaning conditions and usage conditions.

Cleaning Solvent

ASAHI CLEAN AK-225AES
 KAO CLEANTHROUGH 750H
 PINE ALPHA ST-100S
 TOSHIBA TECHNOCARE
 (FRW-17, FRW-1, FRV-100)

Manufacturer

ASAHI GLASS
 KAO
 ARAKAWA CHEMICAL
 GE TOSHIBA SILICONES

Precautions When Mounting

Do not apply force to plastic parts of the LED under high-temperature conditions.

The LED plastic is easily scratched. Avoid friction between plastic parts and hard objects or materials.

When installing the PCB in a product, ensure that the device does not come into contact with other components.

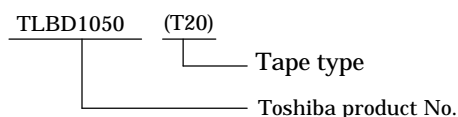
Tape Specifications

This specification lays out the 8 mm pitch embossed-tape packing requirements for 5.2 mm (L) × 5.2 mm (W) × 4.0 mm (H) size surface-mount LED lamp.

1. Product number format

The type of package used for shipment is denoted by a symbol suffix after the product number. The method of classification is as below. (This method, however, does not apply to products whose electrical characteristics differ from standard Toshiba specifications.)

- (1) Tape Type: T20 (8-mm pitch)
- (2) Example



2. Related Matters

- (1) Electro-optical Characteristics

Please refer to the each technical datasheet for electro-optical characteristics of tape packed products.

- (2) Handling Precautions

Tape material protected against static electricity. However, static electricity may occur depending on quantity of charged static electricity and a device may attach to a tape, or a device may be unstable when peeling a tape cover.

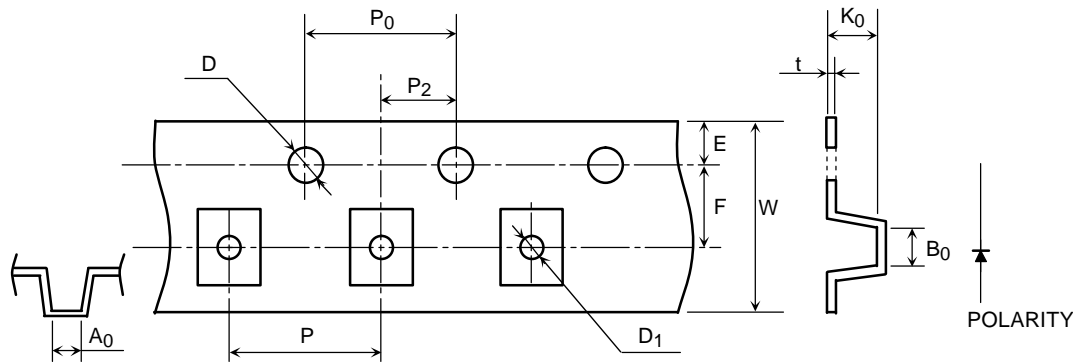
- (a) In process, taping materials may sustain an electrostatic charge, use an ionizer to neutralize the ions.
- (b) For transport and temporary storage of devices, use containers (boxes, jigs, bags) that are made of anti-static materials or of materials that dissipate electrostatic electricity.

3. Tape Dimensions

Unit in mm

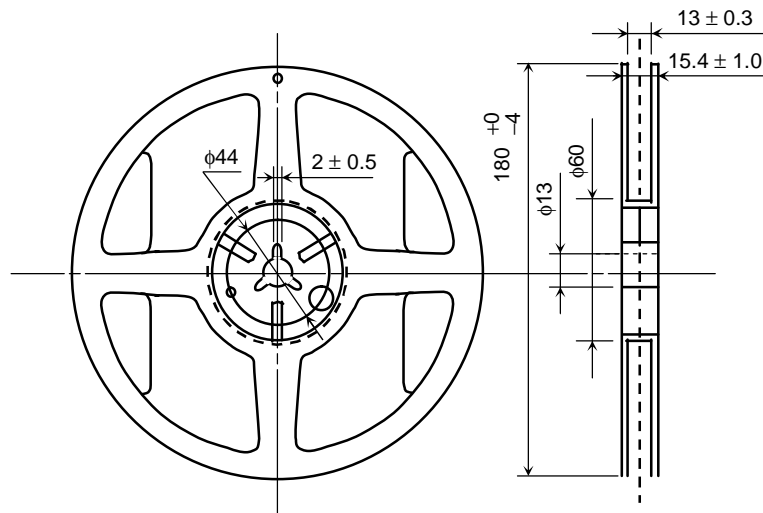
Symbol	Dimension	Tolerance
D	1.5	+0.1/-0
E	1.75	±0.1
P ₀	4.0	±0.1
t	0.4	±0.05
F	5.5	±0.05
D ₁	1.6	±0.1

Symbol	Dimension	Tolerance
P ₂	2.0	±0.05
W	12.0	±0.2
P	8.0	±0.1
A ₀	5.5	±0.1
B ₀	5.5	±0.1
K ₀	4.4	±0.1

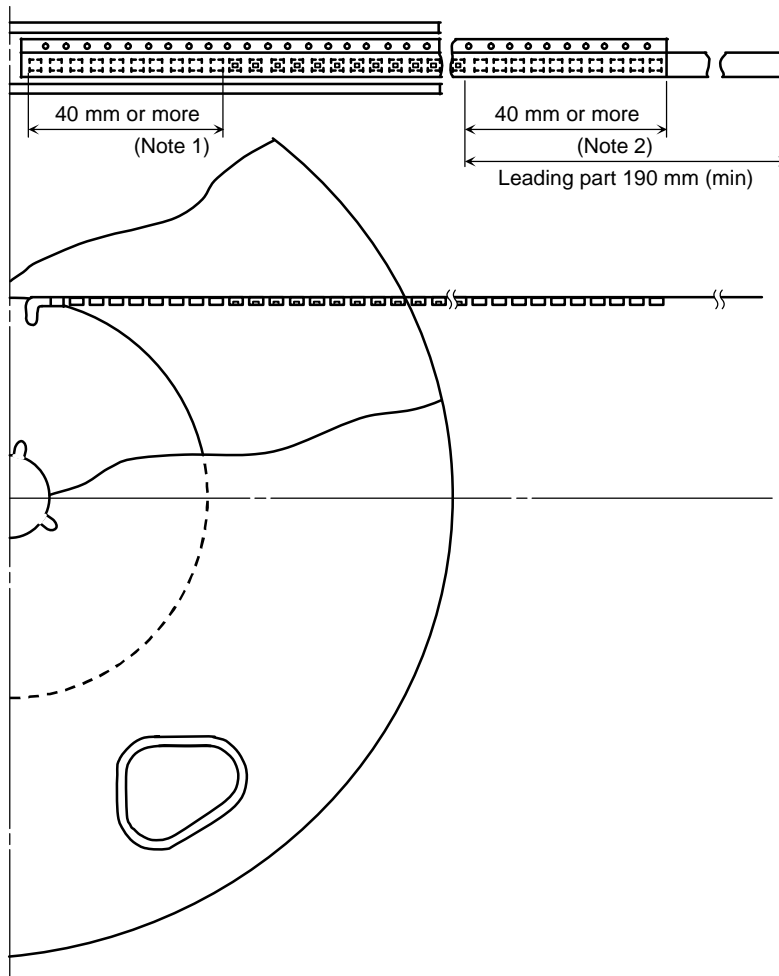


4. Reel Dimensions

Unit in mm



5. Leader and Trailer



Note1: Empty trailer section

Note2: Empty leader section

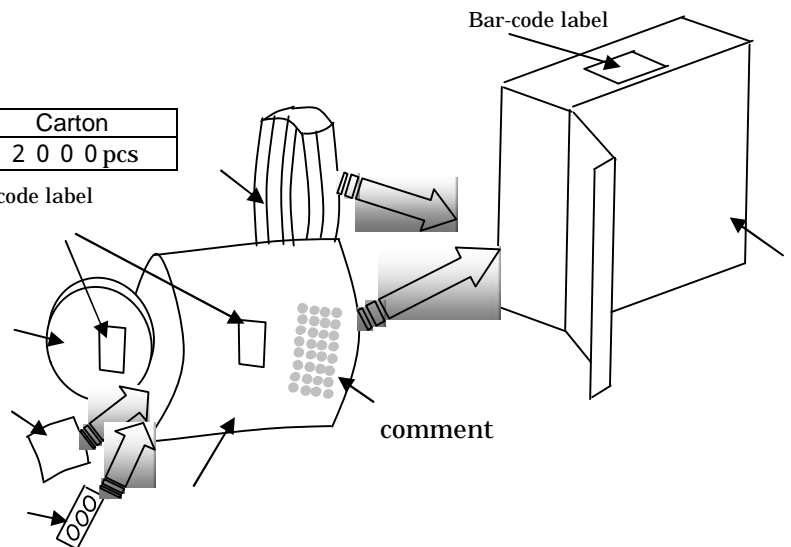
6 . Packing display

(1) Packing quantity

Tape type	Reel	Carton
T 2 0	4 0 0 pcs	2 0 0 0 pcs

No.	Item
	Reel
	Silica gel
	Indicator
	Aluminum pack
	Cushion
	Carton

Bar-code label



(2) Packing form: Each reel is sealed in an aluminum pack with silica gel.

7 . Label format

(1) Example : T L B D 1 0 5 0 (T 2 0)

* See below for how to decipher the Lot Number.

P/N :

TYPE	TLBD1050		
ADDC	(T20)	Q ' TY	400pcs

Lot. Number & Symbol for control
(Rank symbol)

Use under 5-30degC/70%RH within 72h

[[G]] / RoHS COMPATIBLE

*(Y)380

400 Symbol for control

TOSHIBA



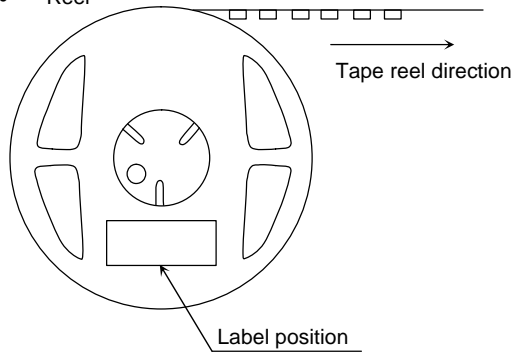
SEALED May,17,2007

DIFFUSED IN USA

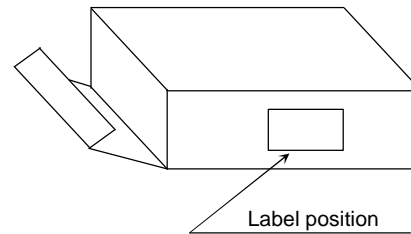
ASSEMBLED IN JAPAN

(2) Label location

- Reel



- Carton



- The aluminum package in which the reel is supplied also has a copy of the label attached to the center of one side.

*The Lot Number includes the following information.

Example: 270 7 E 2 G → "Packaged May 17, 2007"

a b c d e

a: Domestic ID

b: Last digit of the year (CE): "0" (Y2000), "1" (Y2001), "2" (Y2002) ~ "9" (Y2009)

Repeated for each decade

c: Month: "A" (Jan), "B" (Feb), "C" (Mar) ~ "L" (Dec)

d: Decade of the month: "1" (First), "2" (Middle), "3" (Last)

e: Day in *d* above: "A" (1st), "B" (2nd), "C" (3rd) ~ "J" (9th), "K" (10th)

"L" denotes the 31st of the month

"I" is not used to denote a day in this date system

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030619EAC

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