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SHARP CORPORATION

TECHNICAL LITERATURE
FOR
GaP and GaAsP/GaP
Yellow-green and Red
Dichromatic chip LED Device

MODEL NO. LT1ED92A

DOC. NO. DG-94X108

DATE Oct. 31.1994

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2. Please obey the instructions mentioned below for actual use of this device. SHARP takes no responsibility for damage caused by improper use on the devices.
 - (1) This device is designed for general electronic equipment.
Main uses of this device are as follows:
 - Computer •OA equipment •Telecommunication equipment (Terminal)
 - Measuring equipment •Tooling machine •AV equipment
 - [•Home appliance, etc.
 - (2) Please take proper steps in order to maintain reliability and safety, in case this device is used for the uses mentioned below which require high reliability.
 - Unit concerning control and safety of a vehicle (air Diene. train. automobile etc.) •Gas leak detection breaker •Traffic signal
 - [•Fire box and burglar alarm box •Other safety equipment, etc.
 - (3) Please don't use for the uses mentioned below which require extremely high reliability
 - Space equipment • Telecommunication equipment (Trunk)
 - [•Nuclear control equipment •Medical equipment etc.

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SHARPLT1ED92A

This data sheet is to introduce the light emitting diode device
Model No. LT1ED92A, delivered to

1. Structure and characteristics

Structure : GaP yellow-green and GaAsP/GaP red chip LED device

Outline dimensions and pin connections : See page 2

Taping specification : See page 3 4 5 6

Soldering method : See page 7

2. Absolute maximum ratings

(Ta = 25 °C)

Parameter	Symbol	Value		Unit
		Yellow-green	Red	
Power dissipation(Note 1)	P	84	84	mW
Continuous forward current	I _F	30	30	mA
Peak forward current(Note 2)	I _{FM}	50	50	mA
Derating factor	DC	0.40	0.40	mA/°C
	Pulse	0.67	0.67	mA/°C
Reverse voltage	V _R	5	5	V
Operating temperature	T _{opr}	-25 ~ +85		°C
Storage temperature	T _{stg}	-25 ~ +100		°C

(Note 1) Each dissipation value of diode(Yellow-green, Red) is their own ratings at generating independently and the dissipation at the time when both diodes simultaneously generating should be within the half.

(Note 2) Duty ratio = 1/10 , Pulse width = 0,1 ms

3. Electro optical characteristics

(Ta = 25 °C)

Parameter	Symbol	Conditions	Yellow-green		Red		Unit		
			Min.	Typ.	Max.	Min.		Typ.	Max.
Forward voltage	V _F	I _F = 20 mA	-	2.2	2.8	-	2.0	2.8	V
Luminous intensity (Note 3)	I _v	(Yellow-green)	12.0	32.0	-	6.0	16.0	-	mcd
Peak emission wavelength	λ _p	I _F = 20 mA (Red)	-	565	-	-	635	-	nm
Spectrum radiation bandwidth	Δλ			30	-	-	35	-	nm
Reverse current	I _R	V _R = 4 V	-	-	10	-	-	10	μA
Terminal capacitance	C _t	V = 0V, f = 1MHz	-	8	-	-	20	-	pF

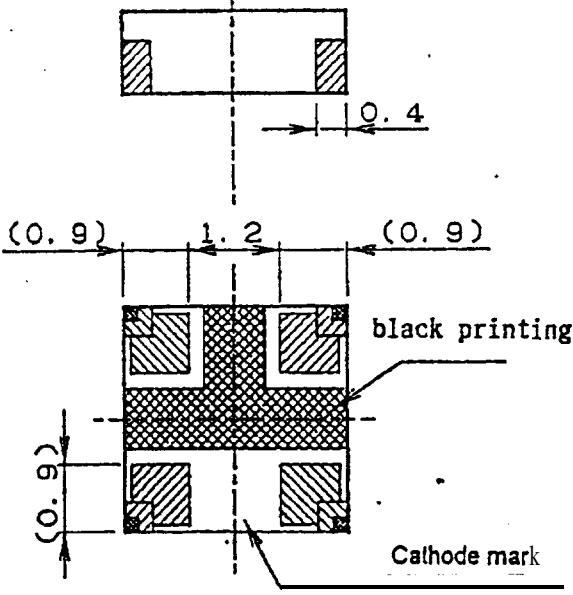
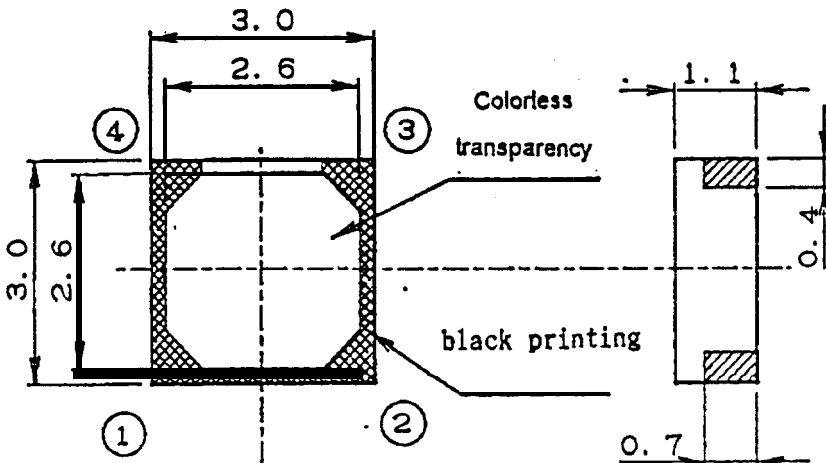
(Note 3) Tolerance: ±15%

4. The technical literature is subject to change without notice.

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- 1. Plated area
- 2. Pin connections
- ④ Cathode
- ③ Cathode
- EG HD
- ① Anode
- ② Anode

Unspecified tol. to be ± 0.2

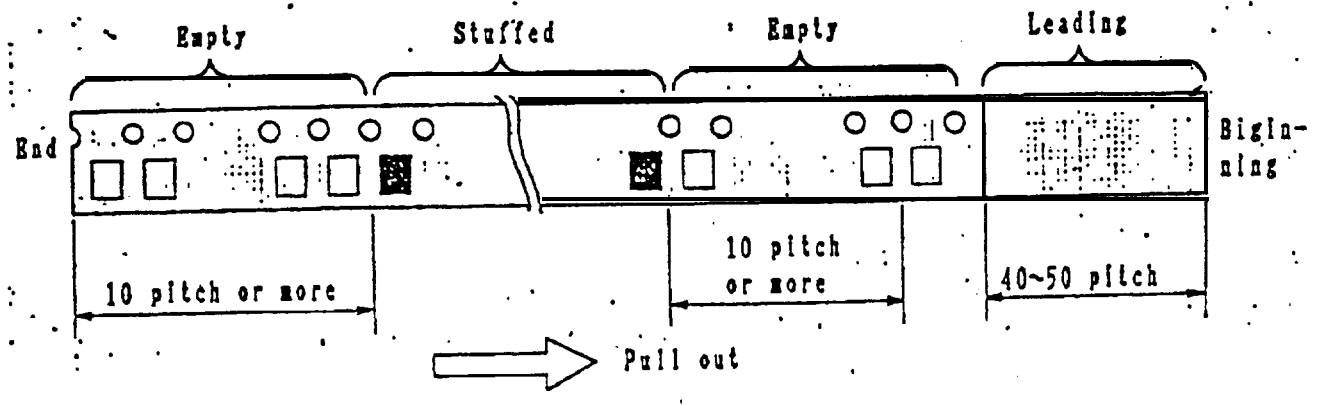
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DRAWING No.	50604032-2

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Taping Specification

- This data sheet is to introduce the taping specification of LED device, model No. " "
- Taping specification " "
- Taping specification



2.2 Shipment table

SHIPMENT TABLE	
PART. NO.	(k)
QUANTITY	
LOT NO.	
SHARP MADE IN JAPAN	

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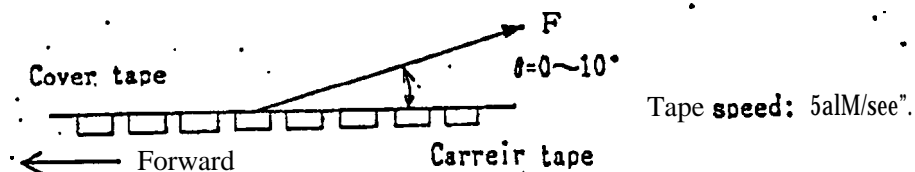
4

SHARP**2.3 Related matters****2.3.1. Packing**

There should not be missing above cent nous three products.

2.3.2. Tape strength

1) Cover tape strength against peeling: $F = 10 - 80 \text{ gr} (\theta = 10^\circ \text{ or less})$

*** 2) Tape strength against bending**

The radius of bending circle should be 30mm or more.

If it is less than 30mm, the cover tape may peel.

2.3.3. Taking out of products

1) Products should be easily taken out.

2) Products should not be attached to the cover tape at peeling.

2.3.4. Jointing of tape

There should not be joint of cover tape or carrier tape.

2.3.5. Storage condition : lower than 60°C and 90%RH

{the term of validity: 1 year}

3. Quantity per reel

Average: 3,000 PCS. per reel.

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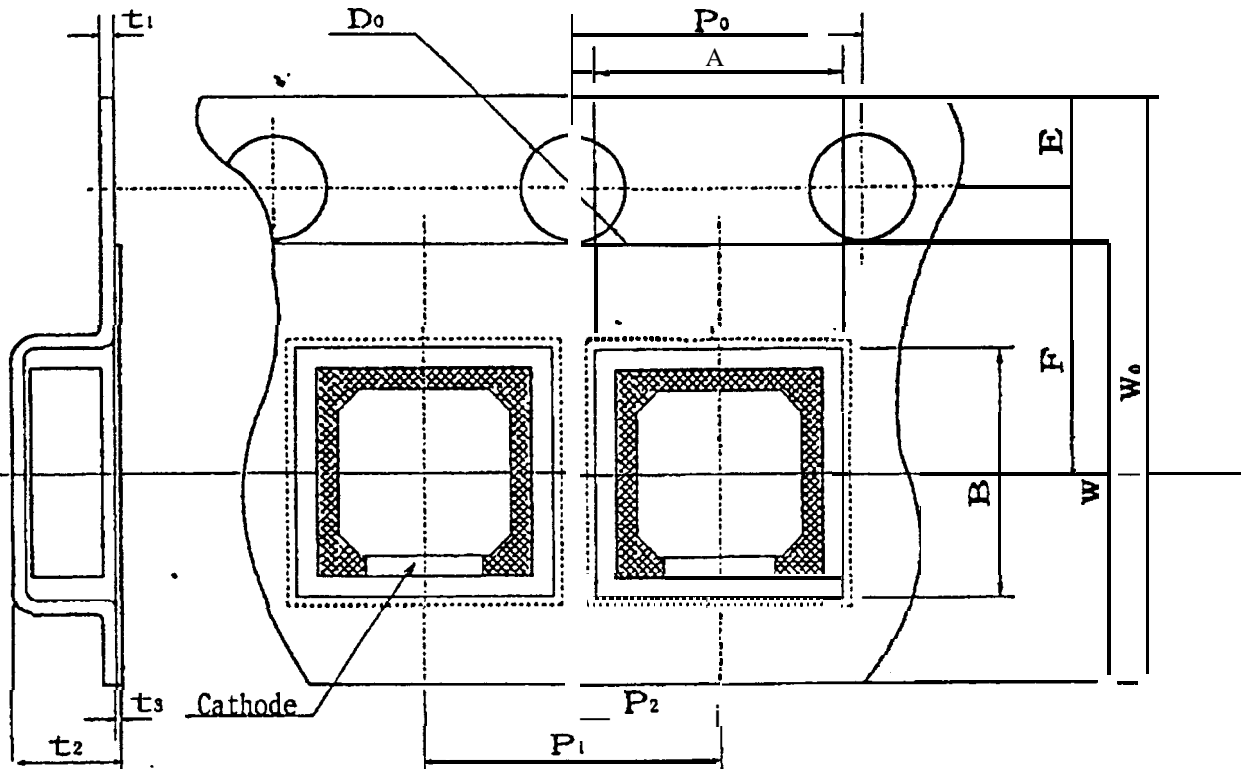
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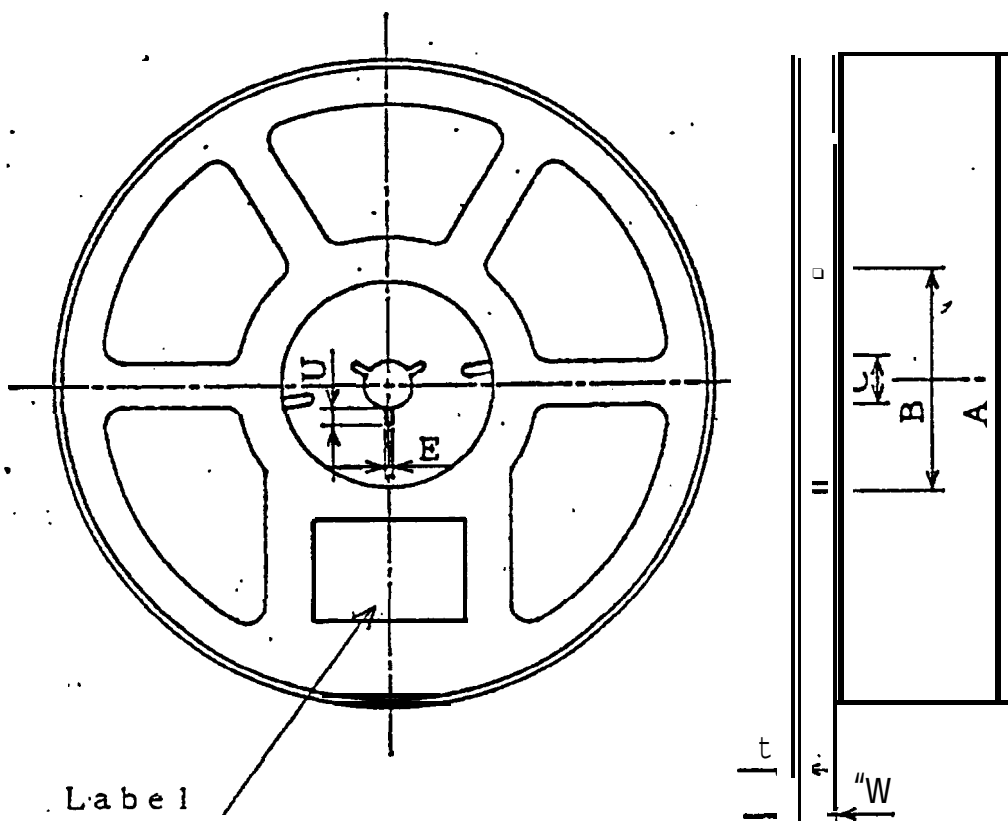
Item	Symbol	Dimension	Remarks
Concave square hole for part insertion	Vertical	A	(3.3)
	Horizontal	B	(3.4)
	Pitch	P ₁	4.0*0.1
Round sprocket hole	Diameter	D ₀	1.5 ± 0.1
	Pitch	P ₀	4.0 ± 0.1
	Position	E	1.75 ± 0.1
Center-to-cent. dimension	Vert. dire.	P ₂	2.0 ± 0.1
	Hori. dire.	F	3.5*0.1
Cover tape	Width	W ₁	5.5 ± 0.2
	Thickness	t ₃	0.1 MAX
Carrier tape	Width	W ₀	8.0 ± 0.3
	Thickness	t ₁	(0.25)
Thickness of the entire unit	t ₂	1.9MAX	With cover tape and carrier tape combined

尺度 SCALE	材質 MATERIAL	仕上 FINISH	名称 NAME	Tape structure and dimension :
	Carrier tape:PET		NAME	
単位 UNIT			<input type="checkbox"/> a	50410001-2
1 = 1/1 mm	Cover tape:PET etc		DRAWING No.	

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Item	Symbol	Dimension angle	Remarks
Flange	Diameter	A	$\phi 178 \pm 2.0$
	Thickness	t	1.5 ± 1.0
Inner space direction		w'	$10.0 * 1.5$ Dimension of shaft core
Hub	External diameter	B	($\phi 60$)
	Spindol hole diameter	c	$1413 * 0.5$
	Key slit	Width	E
Depth		u	$4.5 * 0.7$
Notation for part name etc.		Labeling on one side of flange (part name, quantity, lot No.)	

尺 度 SCALE	材 質 MATERIAL	仕 上 FINISH	名 称 NAME	Reel structure and dimensio
	Reel:PS,			
单 位 UNIT			图 番	50502639
1 = 1/1 mm			DRAWING No.	

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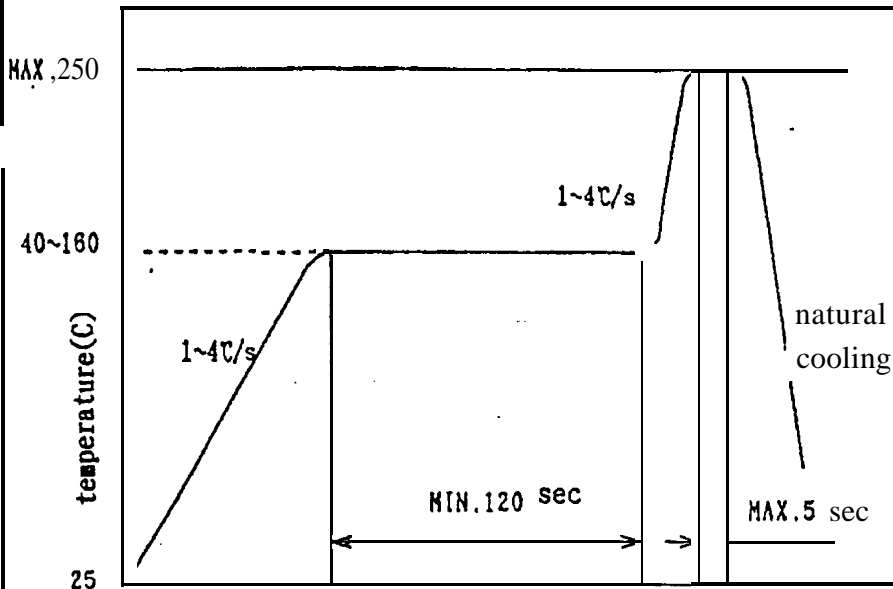
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SHARPSoldering method

I. Reflow soldering

To be done under the following condition.

Recommendable thermal model

second

Precautions: It may be possible that the local temperature inside the resin will be ascending excessively in case of using infrared lamps for heating.

Please keep the condition of package temperature mentioned above.

Due to the structure of plated wiring into resin package, please pay attention not to allow undue stress or heat on package in order to avoid damaging.

Since the wire breaking in the package maybe caused by mechanical stress like bend of PCB, please check the soldering equipments on your side carefully.

2. Soldering iron method

At 260C within 3 seconds

When using a soldering iron, care must be taken not to damage the package. (Pay attention not to allow any undue stress or heat on package.)