THE DATASHEET OF

GM5BW05340AC

PRODUCT DOCUMENTATION

SHARP

Sharp Optoelectronic Components

GM5BW05340AC

Light Emitting Diode

Issue Date: Jan. 27, 2005

SHARP

SPEC. No.

ISSUE Jan-27-05

ELECTRONIC COMPONENTS GROUP

SHARP CORPORATION

SPECIFICATION

DEVICE SPECIFICATION FOR

LIGHT EMITTING DIODE

MODEL No.

GM5BW05340AC

The appearance and specifications of the product may be modified for improvement without notice.

Reference

LED Business Development Center
Electronic Components Group
SHARP CORPORATION

SHARP

No.

Reference

PRODUCT NAME Light Emitting Diode

MODEL No. GM5BW05340AC

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2. When using this product, please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets, as well as the precautions mentioned below. Sharp assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets, and the precautions mentioned below.

(Precautions)

(1) This products is designed for use in the following application areas;

[* OA equipment * Audio visual equipment * Home appliance
* Telecommunication equipment (Terminal) * Measuring equipment
* Tooling machines * Computers]

If the use of the product in the above application areas is for equipment listed in paragraphs (2) or (3), please be sure to observe the precautions given in those respective paragraphs.

(2) Appropriate measures, such as fail-safe design and redundant design considering the safety design of the overall system and equipment, should be taken to ensure reliability and safety when this product is used for equipment which demands high reliability and safety in function and precision, such as ;

[* Transportation control and safety equipment (aircraft, train, automobile etc.)
* Traffic signals * Gas leakage sensor breakers * Rescue and security equipment
* Other safety equipment]

(3) Please do not use this product for equipment which require extremely high reliability and safety in function and precision, such as ;

[* Space equipment * Telecommunication equipment (for trunk lines)
* Nuclear power control equipment * Medical equipment]

(4) Please contact and consult with a Sharp sales representative if there are any questions regarding interpretation of the above three paragraphs.

3. Please contact and consult with a Sharp sales representative for any questions about this product.

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Reference

GM5BW05340AC This technical literature

1. Application

This technical literature applies to the light emitting diode device Model No.GM5BW05340AC
[White (from InGaN Blue LED chip + Yellow Phosphor) LED device]

2. Outline dimensions and terminal connections ---------- Refer to the attached sheet Page 3.

3. Ratings and characteristics ---------- Refer to the attached sheet Page 4 ~ 6.

3-1. Absolute maximum ratings
3-2. Electro-optical characteristics
3-3. Derating Curve
3-4. Characteristics Diagram

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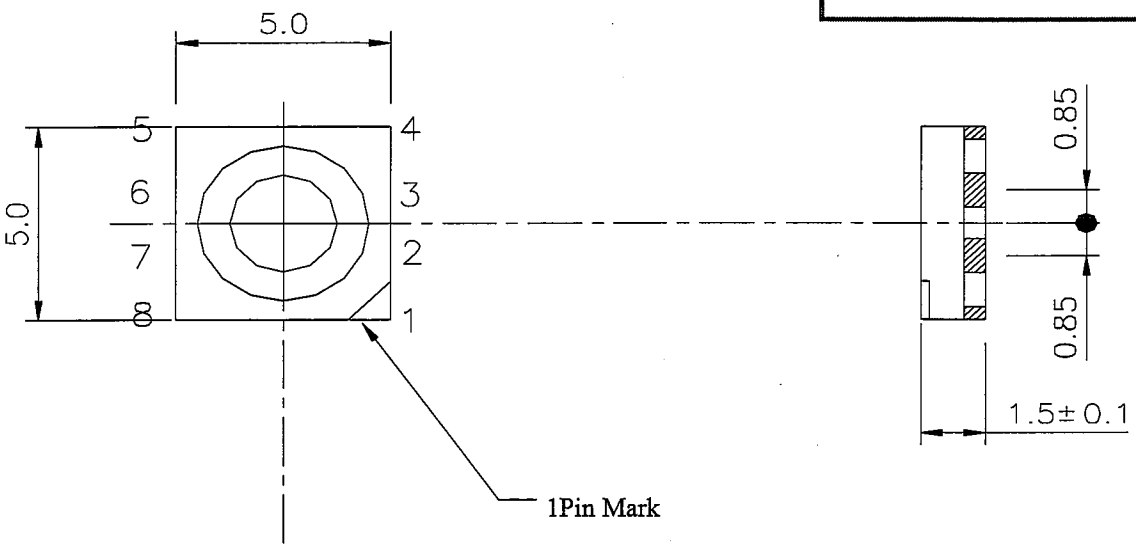
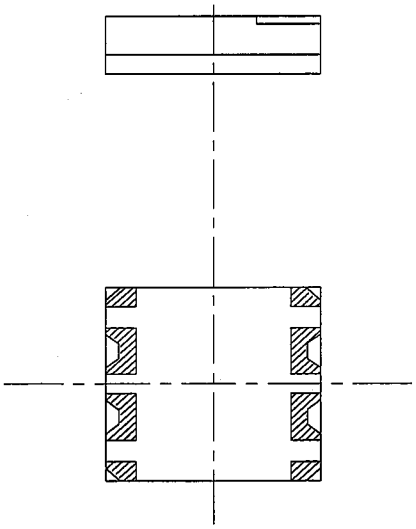
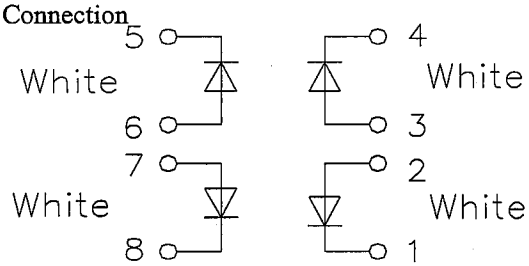
Reference

2. Outline dimensions and terminal connections





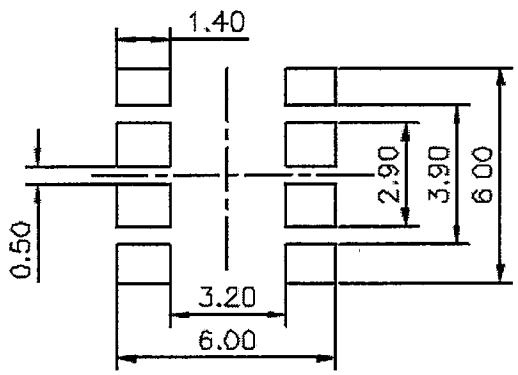
1.Pin Connection



1 4 5 8: Cathode
2 3 6 7: Anode

2.Unspecified tolerance to be ±0.3

3.Recommended soldering pattern



unit	Material	Finish	Drawing No.
mm	Substrate:Glass epoxy Package: Nylon + Silicone	Ag plate	

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Reference

3.Ratings and characteristics

3-1. Absolute maximum ratings

(Ta=25 ℃)

Parameter	Symbol	Rating	Unit
Power dissipation	P	140	mW
Continuous forward current (*1)	I_F	35	mA
Peak forward current(*2)	I_{FM}	(150)	mA
Derating factor	DC	0.58	mA/℃
	Pulse	1.88	mA/℃
Reverse voltage	V_R	5	V
Operating temperature	T_a	-30 to +85	°C
Storage temperature	T_{stg}	-40 to +100	°C
Soldering temperature (*3)	T_{sol}	290	°C

(*1) Rating of each chip. Using plural chips, within power dissipation.
(*2) Duty ratio = 1/10,Pulse width = 400ms
(*3)Manual soldering Max. 3 seconds.Refer to the 12 page of the reflow soldering profile.

3-2. Electro-optical characteristics

(Ta=25 ℃)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Forward Voltage(*4)	V_F	I_F=20 mA	—	3.4	4.0	V
Luminous intensity(*6) (4 chips light on)	I_V		8	10	—	cd
chromaticity(*4)	x		—	0.31	—	—
	y		—	0.31	—	
Reverse Current	I_R	V_R=4V	—	—	100	μA
Radiation pattern	$2\theta_{1/2}$	I_F=20 mA	-	35	—	deg

(*4)Rating of each chip.
(*5 Measured by EG&G MODEL550(Radiometer/Photometersystem) after 20ms drive
(Tolerance : ±15%)
(*6) Measured by Ohtsuka electronics MODEL MCPD-2000 after 20ms drive
(Tolerance : x,y:±0.02)

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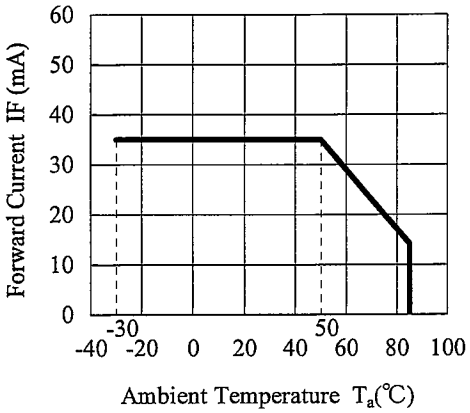
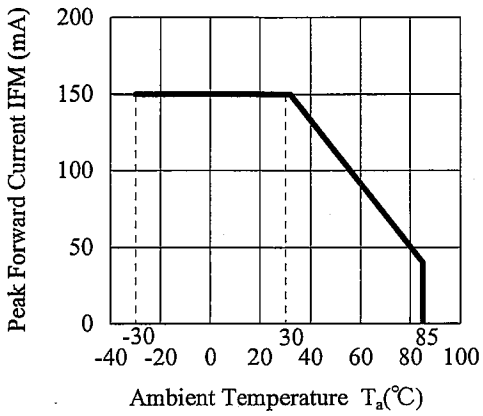
3-3. Derating Curve

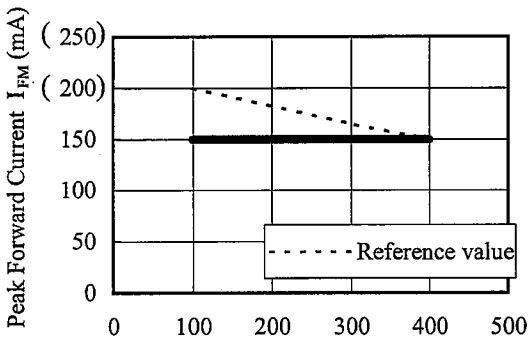
Reference



Forward Current Derating Curve
(4 chips light



Peak Forward Current Derating Curve
(4 chips light



Pulse Width [msec]

Peak Forward Current vs. Pulse Width (T_a=25 ℃)
(4 chips light
on)

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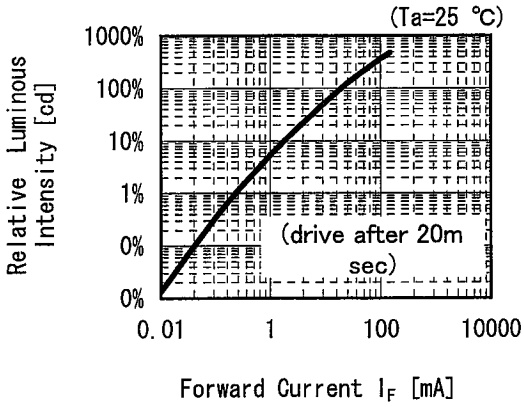
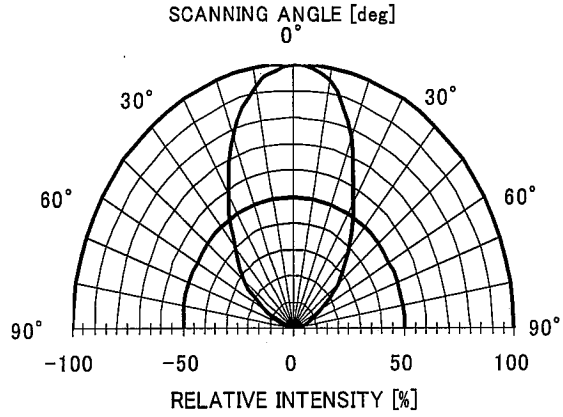
Reference

3-4. Characteristic chart (Note)

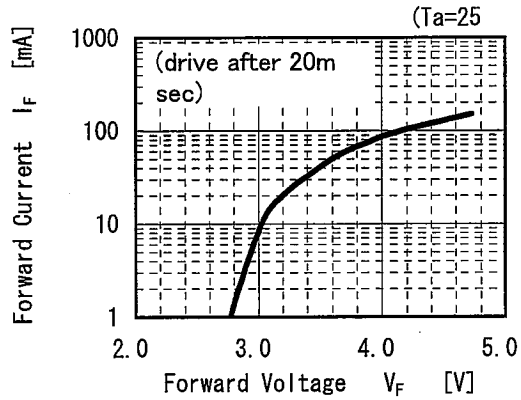
Relative Luminous Intensity vs. Forward Current



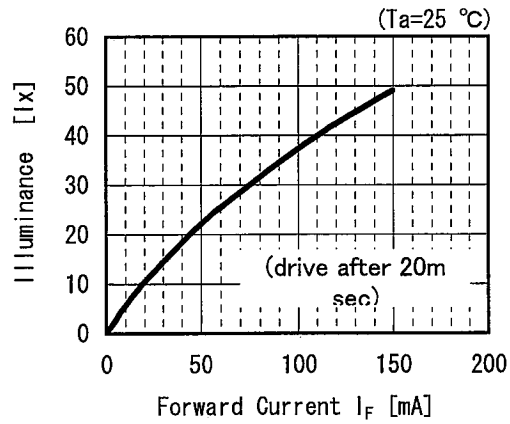
IF=20mA
(4 chips light on)



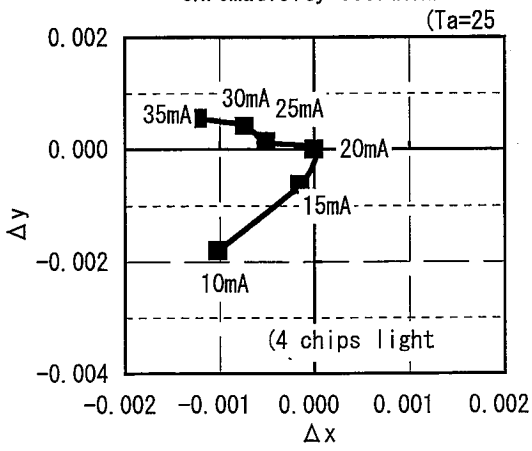
Forward Current vs. Forward Voltage



Illuminance vs. Forward Current



Forward Current vs. Chromaticity Coordinate



(Note) Above characteristic data are measurement data.

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