

# GM5BW05340AC

## Light Emitting Diode

Issue Date: Jan. 27, 2005

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# 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**

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LED Business Development Center  
Electronic Components Group  
SHARP CORPORATION

## Reference

PRODUCT NAME Light Emitting Diode  
MODEL No. GM5BW05340AC

1. These specification sheets include materials protected under the copyright of Sharp Corporation ("Sharp"). Please do not reproduce or cause anyone to reproduce them without Sharp's consent.
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.

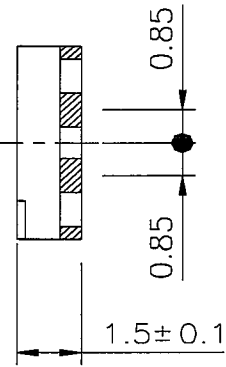
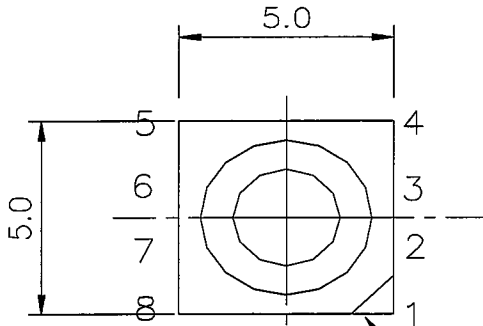
3. Ratings and characteristics ----- Refer to the attached sheet Page 4 ~ 6.

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

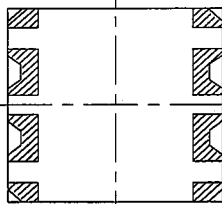
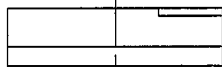
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2. Outline dimensions and terminal connections

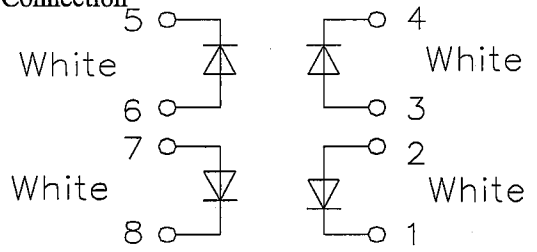
**Reference**



1Pin Mark



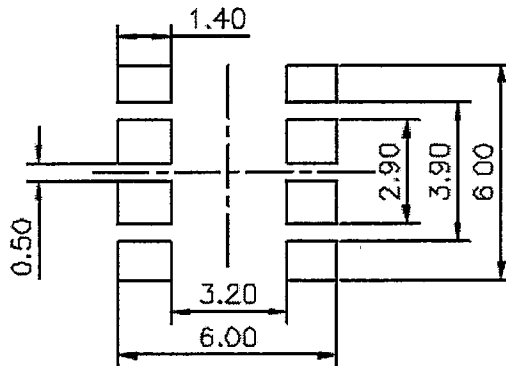
1.Pin Connection



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

2.Unspecified tolerance to be  $\pm 0.3$

3.Recommended soldering pattern



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

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## 3. Ratings and characteristics

## 3-1. Absolute maximum ratings

(Ta=25 °C)

Parameter	Symbol	Rating	Unit
Power dissipation	P	140	mW
Continuous forward current (*1)	I <sub>F</sub>	35	mA
Peak forward current(*2)	I <sub>FM</sub>	(150)	mA
Derating factor	DC	0.58	mA/°C
	Pulse	1.88	mA/°C
Reverse voltage	V <sub>R</sub>	5	V
Operating temperature	T <sub>a</sub>	-30 to +85	°C
Storage temperature	T <sub>stg</sub>	-40 to +100	°C
Soldering temperature (*3)	T <sub>sol</sub>	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 °C)

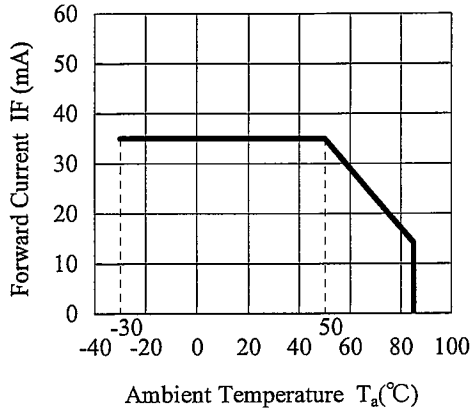
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Forward Voltage(*4)	V <sub>F</sub>	I <sub>F</sub> =20 mA	—	3.4	4.0	V
Luminous intensity(*6) (4 chips light on)	I <sub>V</sub>		8	10	—	cd
chromaticity(*4)	x		—	0.31	—	—
	y	—	0.31	—	—	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =4V	—	—	100	μA
Radiation pattern	2θ <sub>1/2</sub>	I <sub>F</sub> =20 mA	—	35	—	deg

(\*4) Rating of each chip.

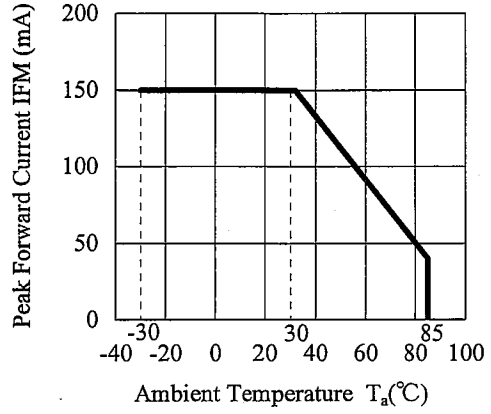
(\*5) Measured by EG&G MODEL550(Radiometer/Photometersystem) after 20ms drive  
(Tolerance : ±15%)(\*6) Measured by Ohtsuka electronics MODEL MCPD-2000 after 20ms drive  
(Tolerance : x,y:±0.02)

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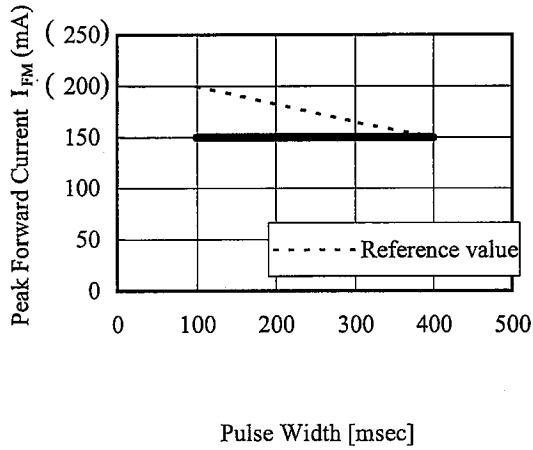
3-3. Derating Curve



Forward Current Derating Curve  
(4 chips light)



Peak Forward Current Derating Curve  
(4 chips light)



Peak Forward Current vs. Pulse Width ( $T_a=25^\circ\text{C}$ )  
(4 chips light)

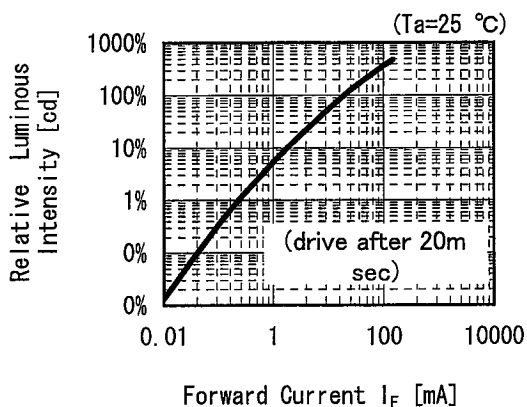
**Reference**

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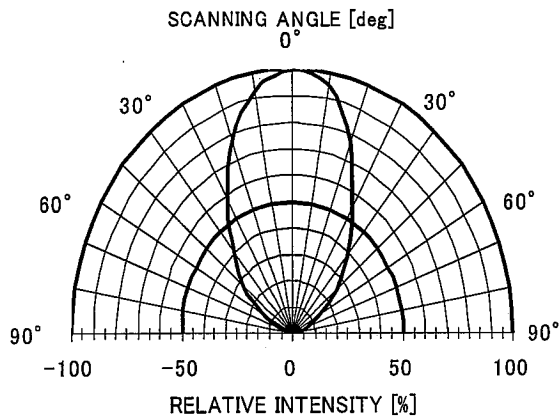
Reference

3-4. Characteristic chart (Note)

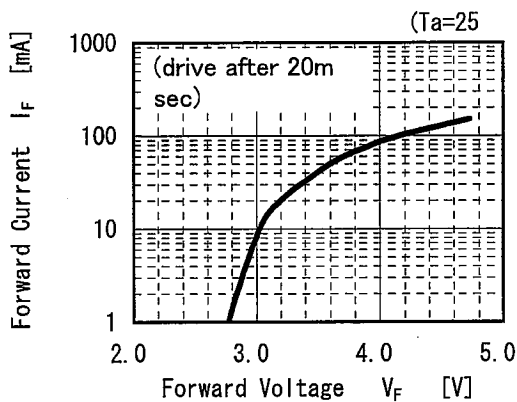
Relative Luminous Intensity vs. Forward Current



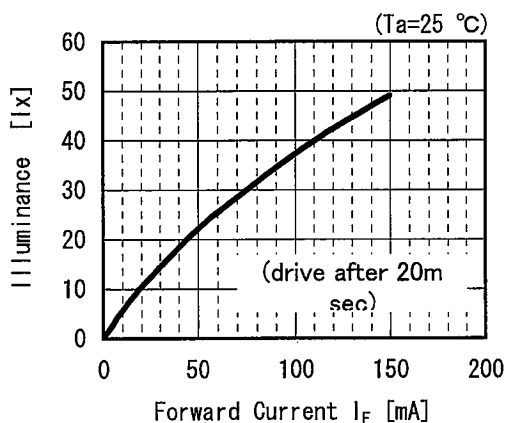
$I_F=20\text{mA}$   
(4 chips light on)



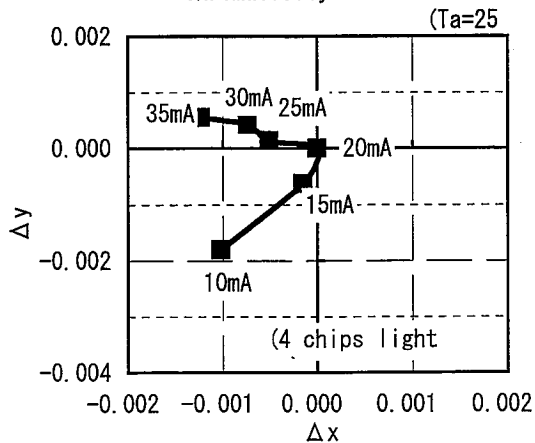
Forward Current vs. Forward Voltage



Illuminance vs. Forward Current



Forward Current vs. Chromaticity Coordinate



(Note) Above characteristic data are measurement data.



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# SHARP®

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## NORTH AMERICA

SHARP Microelectronics of the Americas  
5700 NW Pacific Rim Blvd.  
Camas, WA 98607, U.S.A.  
Phone: (1) 360-834-2500  
Fax: (1) 360-834-8903  
Fast Info: (1) 800-833-9437  
www.sharpsma.com

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## EUROPE

SHARP Microelectronics Europe  
Division of Sharp Electronics (Europe) GmbH  
Sonninstrasse 3  
20097 Hamburg, Germany  
Phone: (49) 40-2376-2286  
Fax: (49) 40-2376-2232  
www.sharpsme.com

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## JAPAN

SHARP Corporation  
Electronic Components & Devices  
22-22 Nagaike-cho, Abeno-Ku  
Osaka 545-8522, Japan  
Phone: (81) 6-6621-1221  
Fax: (81) 6117-725300/6117-725301  
www.sharp-world.com

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## TAIWAN

SHARP Electronic Components  
(Taiwan) Corporation  
8F-A, No. 16, Sec. 4, Nanking E. Rd.  
Taipei, Taiwan, Republic of China  
Phone: (886) 2-2577-7341  
Fax: (886) 2-2577-7326/2-2577-7328

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## SINGAPORE

SHARP Electronics (Singapore) PTE., Ltd.  
438A, Alexandra Road, #05-01/02  
Alexandra Technopark,  
Singapore 119967  
Phone: (65) 271-3566  
Fax: (65) 271-3855

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## KOREA

SHARP Electronic Components  
(Korea) Corporation  
RM 501 Geosung B/D, 541  
Dohwa-dong, Mapo-ku  
Seoul 121-701, Korea  
Phone: (82) 2-711-5813 ~ 8  
Fax: (82) 2-711-5819

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## CHINA

SHARP Microelectronics of China  
(Shanghai) Co., Ltd.  
28 Xin Jin Qiao Road King Tower 16F  
Pudong Shanghai, 201206 P.R. China  
Phone: (86) 21-5854-7710/21-5834-6056  
Fax: (86) 21-5854-4340/21-5834-6057

**Head Office:**

No. 360, Bashen Road,  
Xin Development Bldg. 22  
Waigaoqiao Free Trade Zone Shanghai  
200131 P.R. China  
Email: smc@china.global.sharp.co.jp

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## HONG KONG

SHARP-ROXY (Hong Kong) Ltd.  
3rd Business Division,  
17/F, Admiralty Centre, Tower 1  
18 Harcourt Road, Hong Kong  
Phone: (852) 28229311  
Fax: (852) 28660779  
www.sharp.com.hk

**Shenzhen Representative Office:**

Room 13B1, Tower C,  
Electronics Science & Technology Building  
Shen Nan Zhong Road  
Shenzhen, P.R. China  
Phone: (86) 755-3273731  
Fax: (86) 755-3273735