

Approved	Checked	Designed	DEVELOPMENT SPECIFICATION	TEMPORARY		
	<i>M. Hiji</i>	<i>T. Tabata</i>				

T Y P E	White Light Emitting Diode					
A P P L I C A T I O N	Indicators					
M A T E R I A L	GaN					
O U T L I N E	Attached					
A B S O L U T E M A X I M U M R A T I N G S	P	$I_{FDC}$	*1 $I_{FP}$	$V_R$	Topr	Tstg
	27	7	40	5	-30~+85	-40~+100
	mW	mA	mA	V	°C	°C
C O N D I T I O N	$T_a = 25 \pm 3$ °C					

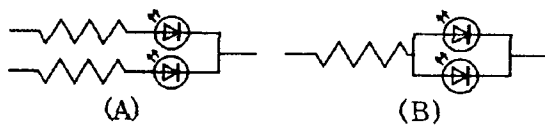
Optical Electrical Specification

Item	Symbol	Condition	Typ.	Limit		Unit
				Min.	Max.	
Forward Voltage	$V_F$	$I_F = 5 \text{ mA} \cdot \text{DC}$	3.1		3.7	V
Reverse Leakage Current	$I_R$	$V_R = 5 \text{ V}$			10	$\mu\text{A}$
Luminous Intensity *2	$I_O$	$I_F = 5 \text{ mA}$	25	13		med
Chromatic coordinates *3	x	$I_F = 5 \text{ mA} \cdot \text{DC}$	-	0.24	0.328	-
	y	$I_F = 5 \text{ mA} \cdot \text{DC}$	-	0.226	0.376	-

- \*1 - The Condition of  $I_{FP}$  is duty 10 %, Pulse width 10 ms.
- Please contact the Panasonic local office if you design at low current (below 1 mA DC) or pulse current operation and have any questions.
- \*2 - Tolerance of luminous intensity is  $\pm 20$  %.
- \*3 - Tolerance of chromatic coordinates is  $\pm 0.02$ .

NOTE

1. Soldering conditions. Refer to Handling note.
2. Care should be taken that soldering is done within 7-days after opening the dry package and reel.
3. Beware of destruction by static electricity in handling the LED.
4. Circuit model



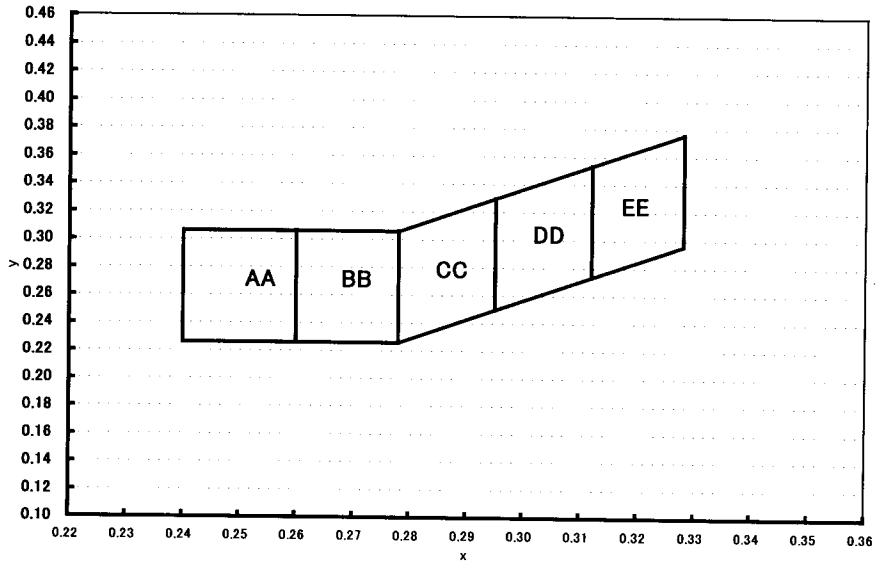
- (A) Recommended circuit.
- (B) The difference of brightness between the LED could be found due to the  $V_F$  characteristics of each LED.

Feb. 21. 2003			

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6. Chromatic coordinates will change by the level of operating current.  
It had better be fully considered during the design.

### Chromaticity diagram



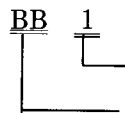
(I<sub>F</sub>=5 mA)

AA	x	0.24	0.24	0.26	0.26
	y	0.226	0.306	0.226	0.306
BB	x	0.26	0.26	0.278	0.278
	y	0.226	0.306	0.226	0.306
CC	x	0.278	0.278	0.295	0.295
	y	0.226	0.306	0.2498	0.3298
DD	x	0.295	0.295	0.312	0.312
	y	0.2498	0.3298	0.2736	0.3536
EE	x	0.312	0.312	0.328	0.328
	y	0.2736	0.3536	0.296	0.376

• Measurement error ±0.02.

#### Display decipher

Example



Luminous intensity rank 1

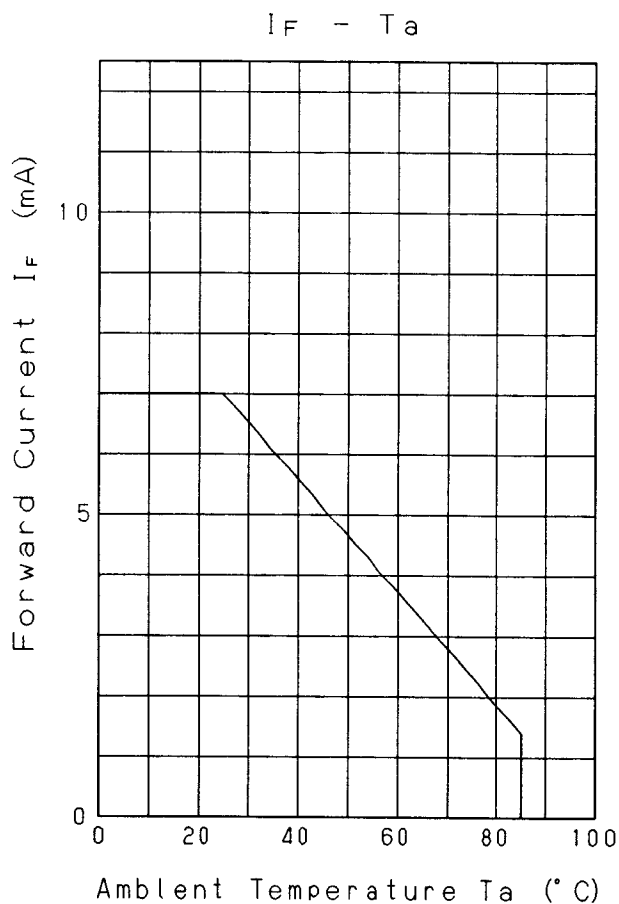
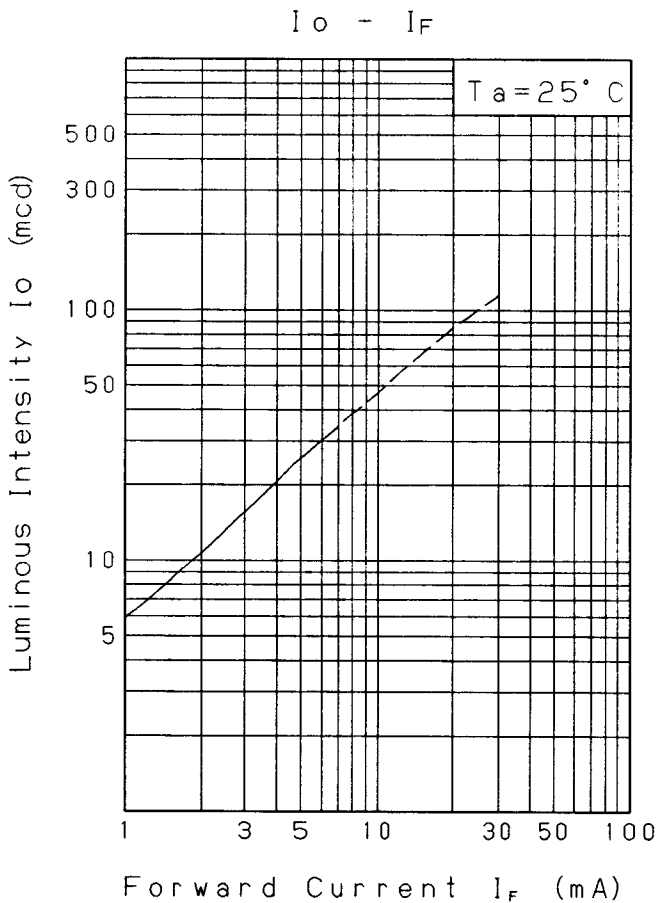
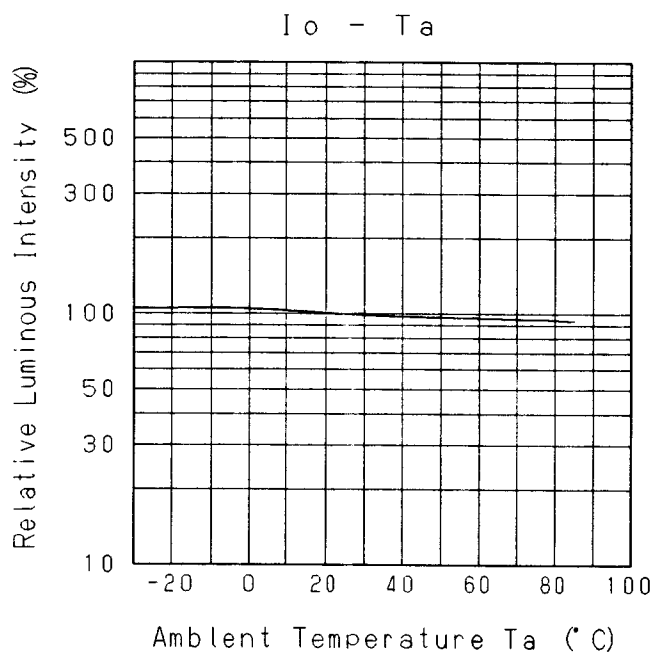
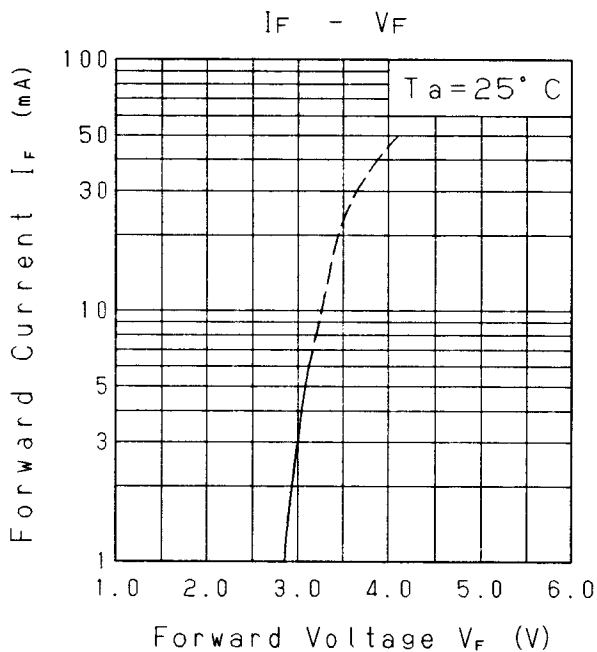
Chromatic coordinates rank BB

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	<i>M. H.</i>	<i>T. Takata</i>

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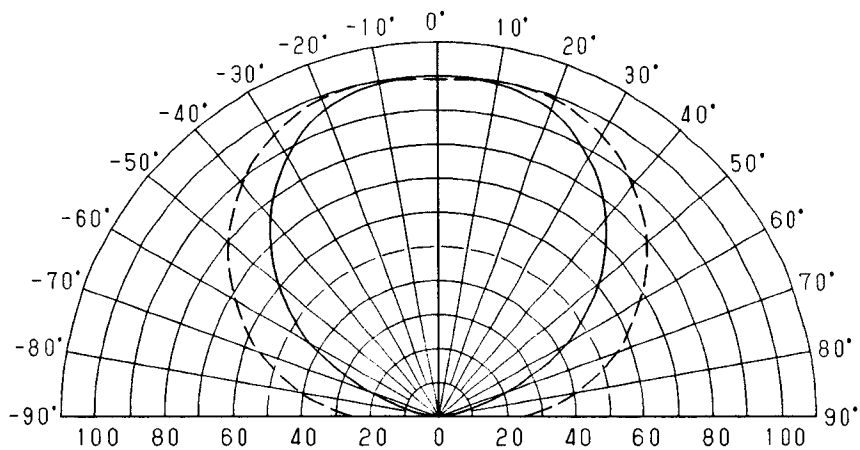
*M. Hei*

*T. Tabata*

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Directive Characteristics



Relative Luminous Intensity (%)

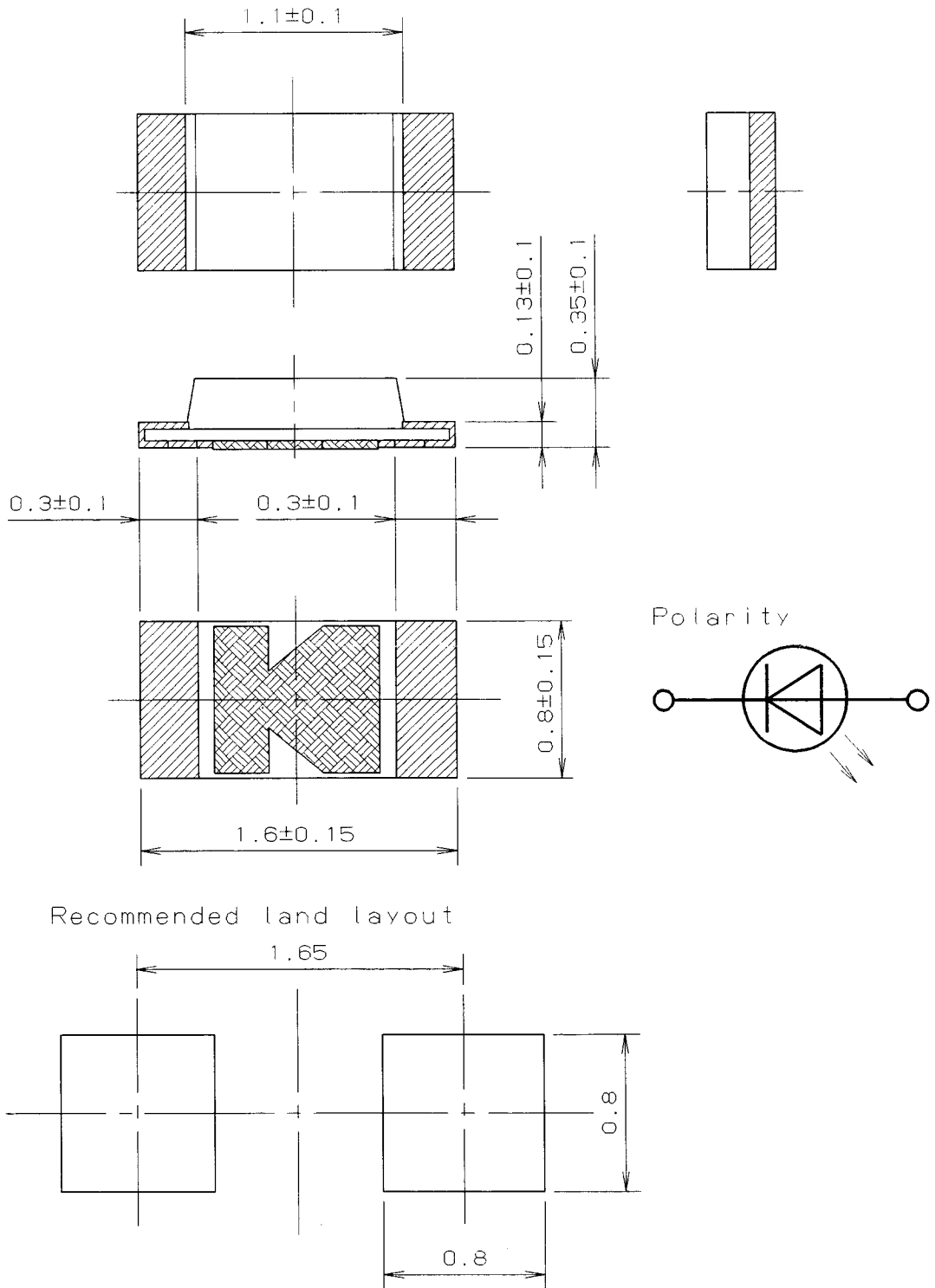
Feb.21.2003

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DEVELOPMENT SPECIFICATION

(OUTLINE)

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(NOTE)

1. Measurement of the package doesn't include electrode projection.
2. Unit:mm

Oct. 16. 2002