

Approved	Checked	Designed	DEVELOPMENT SPECIFICATION	TEMPORARY
	<i>M. H.</i>	<i>M. Nozoe</i>		

T Y P E	Red Light Emitting Diode					
A P P L I C A T I O N	Indicators					
M A T E R I A L	GaAlAs					
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	*1 $I_{FP}$	$I_{FDC}$	$V_R$	$T_{opr}$	$T_{stg}$
	40	50	15	3	-30~+85	-40~+100
	mW	mA	mA	V	°C	°C
C O N D I T I O N	$T_a = 25 \pm 3^\circ\text{C}$					

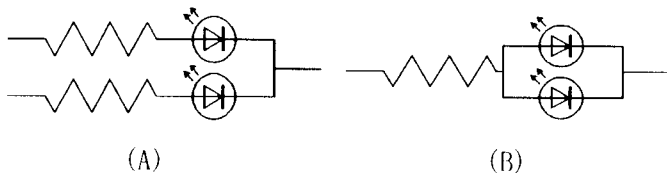
### Test Specification

I t e m	Symbol	C o n d i t i o n	Typ	Limit		Unit
				Min	Max	
Forward Voltage	$V_F$	$I_F = 10 \text{ mA}$	1.72		2.5	V
Reverse Leakage Current	$I_R$	$V_R = 3 \text{ V}$			100	$\mu\text{A}$
Luminous Intensity *2	$I_O$	$I_F = 10 \text{ mA DC}$	4.2	2.2		mcd
Peak Emission Wavelength	$\lambda_p$	$I_F = 10 \text{ mA DC}$	655			nm
Spectral Line Half Width	$\Delta\lambda$	$I_F = 10 \text{ mA DC}$	20			nm

- \*1 · The Condition of  $I_{FP}$  is duty 10 % , Pulse width 1 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 Measurement Tolerance is  $\pm 20\%$ .

#### NOTE

- ★1. Terminal:Plated with gold on copper base.
- ★2. Soldering conditions.  
Refer to Handling note.
- ★3. Care should be taken that soldering is done within 3-days after opening the dry package and reel.
- ★4. Circuit to operate LED.



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

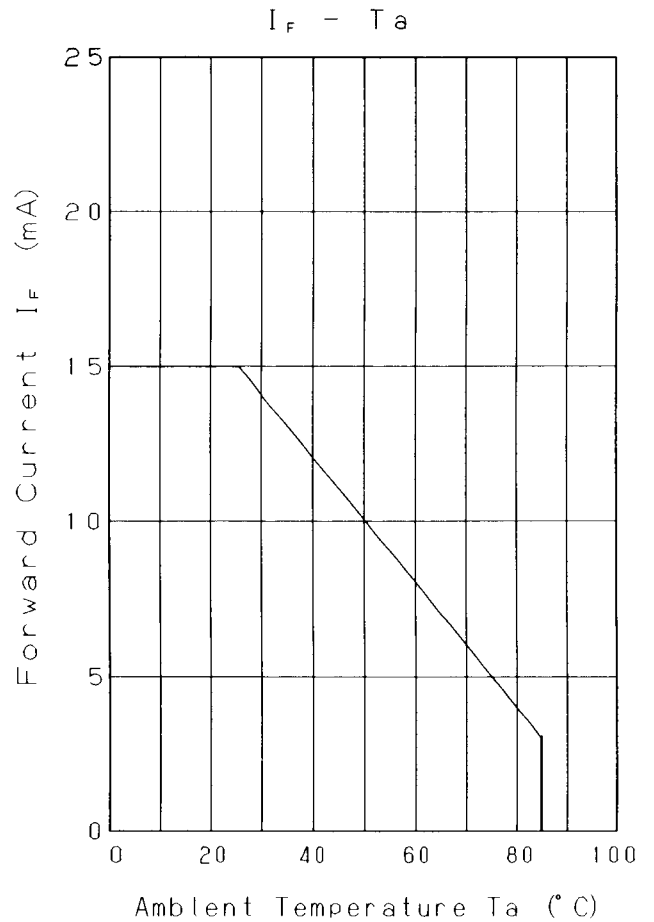
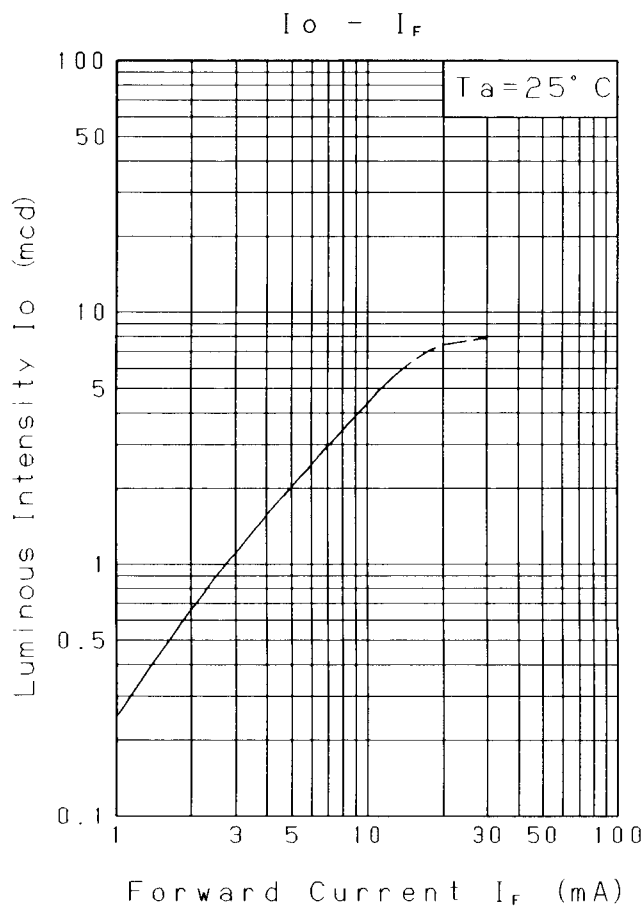
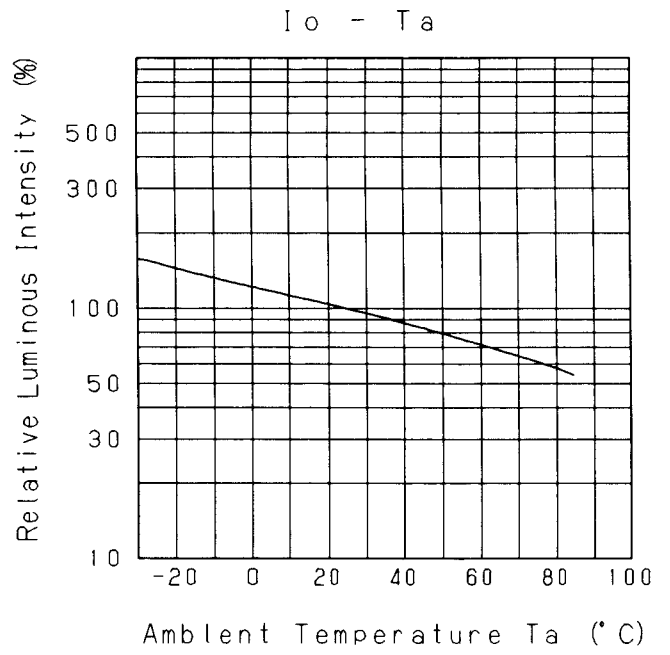
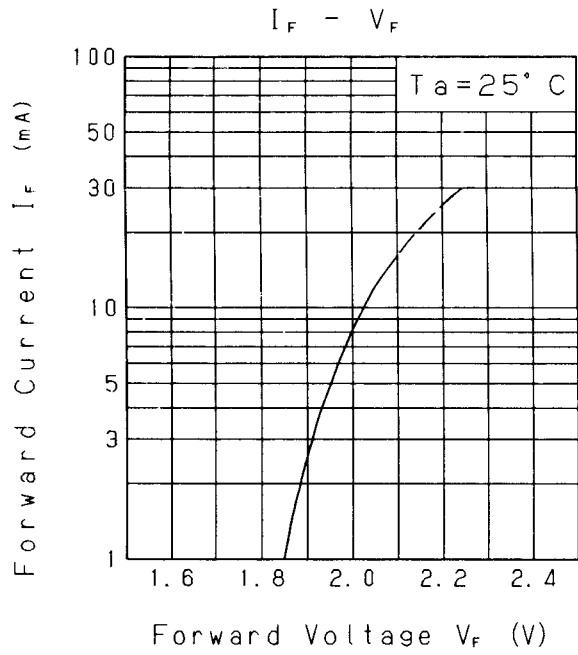
Mar. 13, 2001			

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	<i>H. Ho</i>	<i>M. Nagase</i>

# DEVELOPMENT SPECIFICATION

Tentative: LNJ219R9ARA

TEMPORARY



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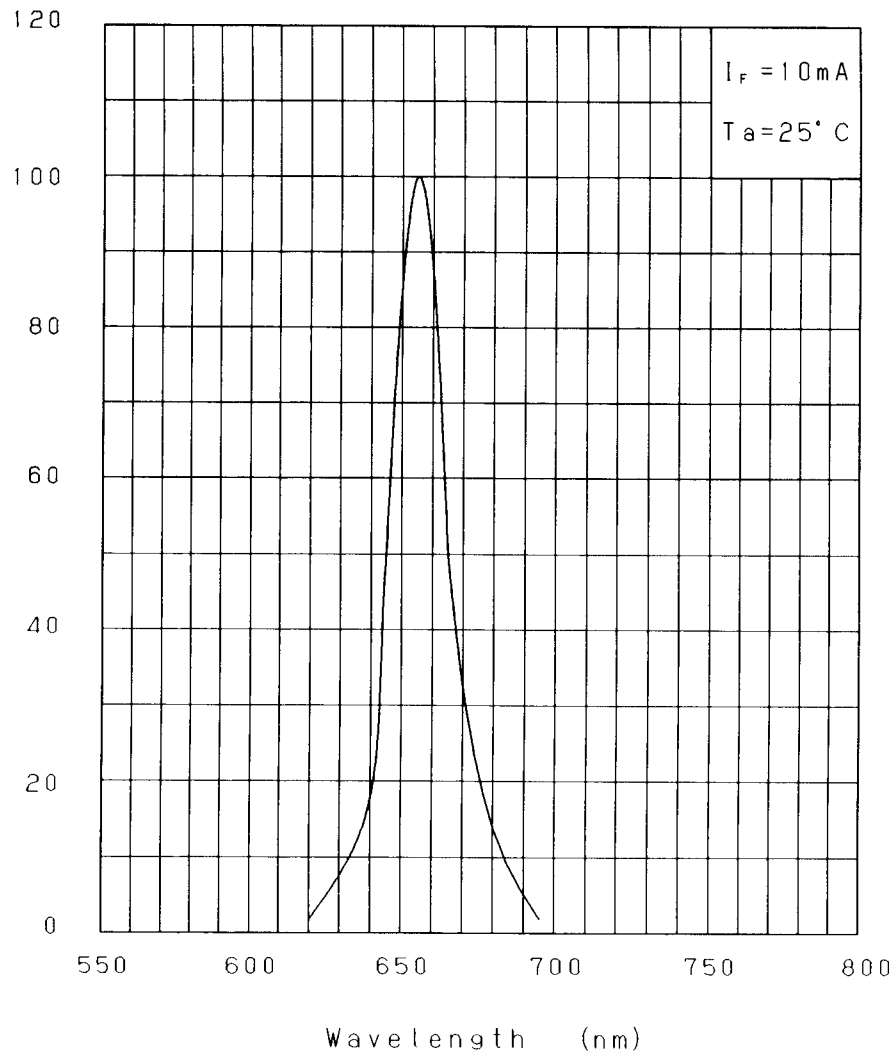
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	<i>M. W.</i>	<i>M. Meyer</i>

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TEMPORARY

Relative Luminous Intensity  
Wavelength Characteristics



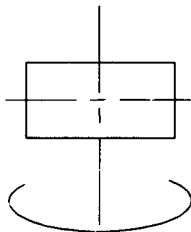
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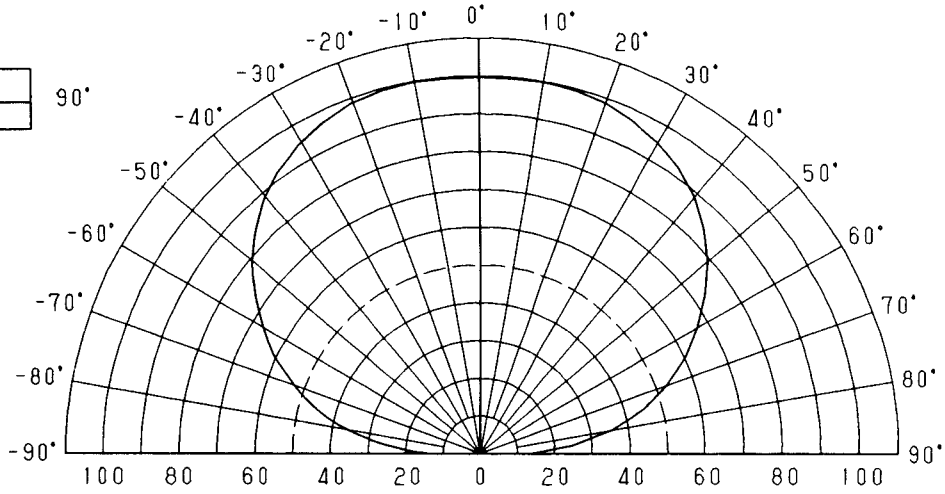
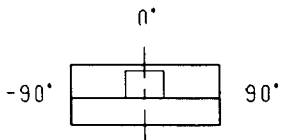
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Tentative: LNJ219R9ARA

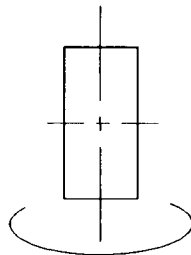
TEMPORARY



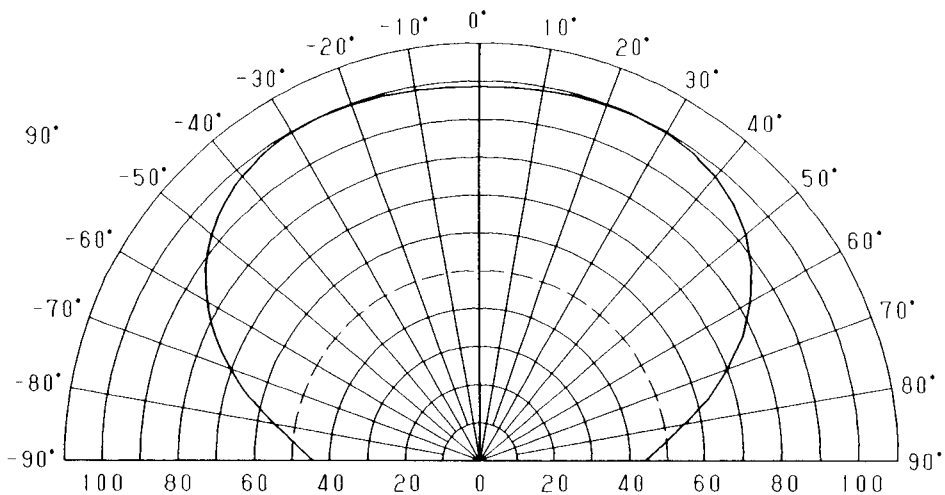
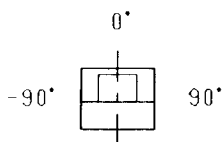
Directive Characteristics



Relative Luminous Intensity (%)



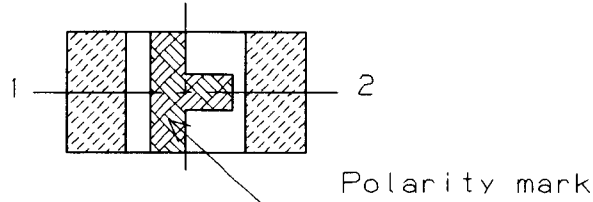
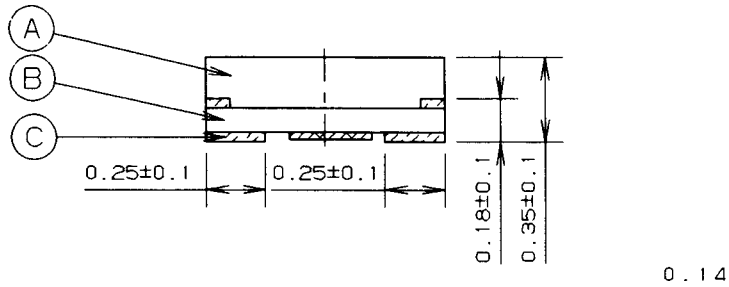
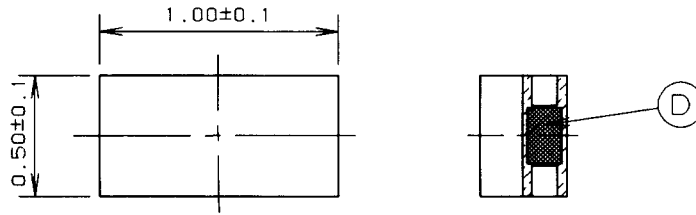
Directive Characteristics



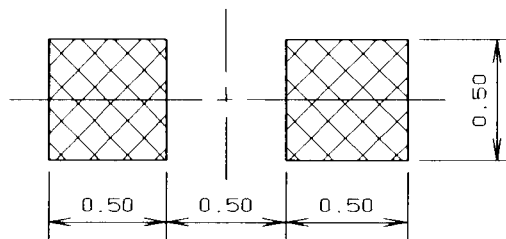
Relative Luminous Intensity (%)

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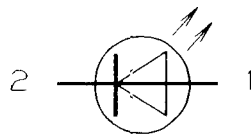
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	<i>h.wei</i>	<i>mm. Nagel</i>			



Recommended Land Layout



Polarity



1: Anode  
2: Cathode

NOTE)

1. Measurement of the package doesn't include electrode projection.
2. Unit: mm
3. Materials; (A) Epoxy resin  
(B) Substructure  
(C) Terminal (Cu/Ni/Au plating)  
(D) Potting resin

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