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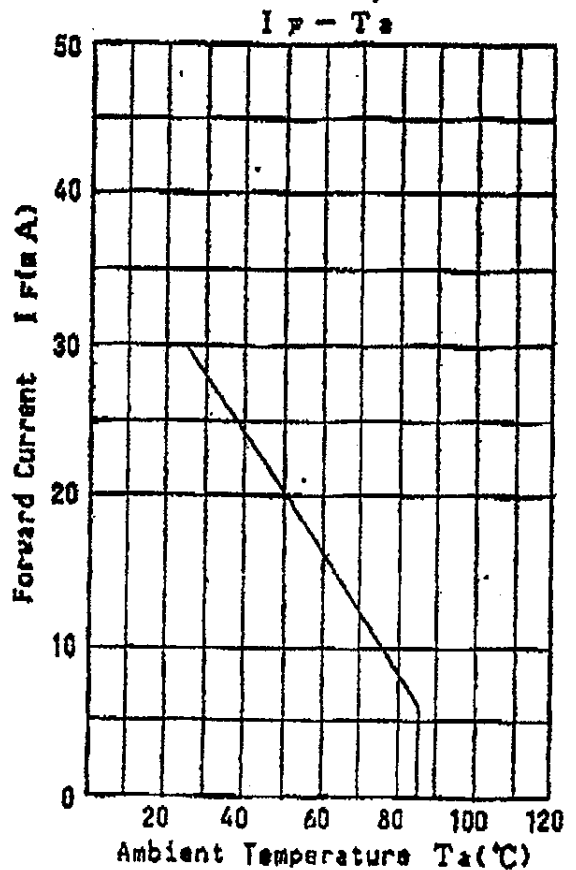
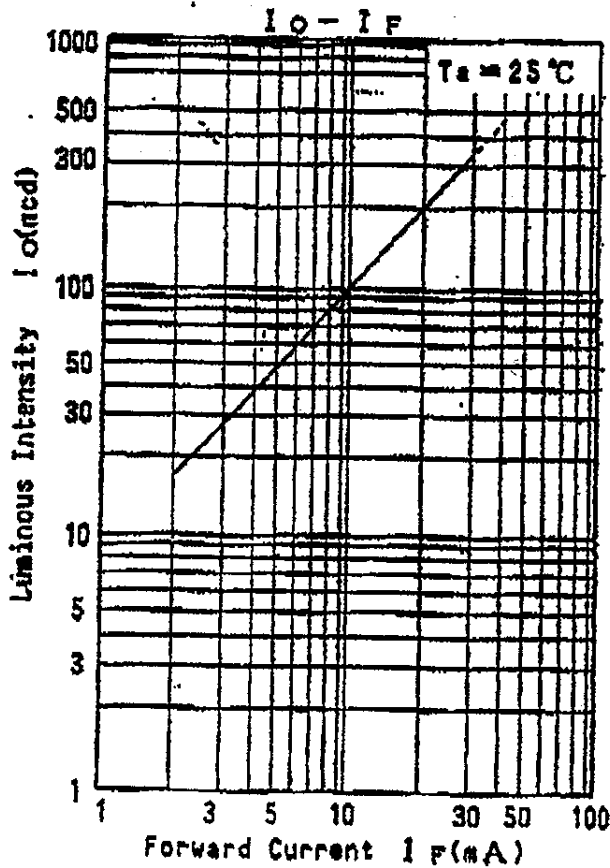
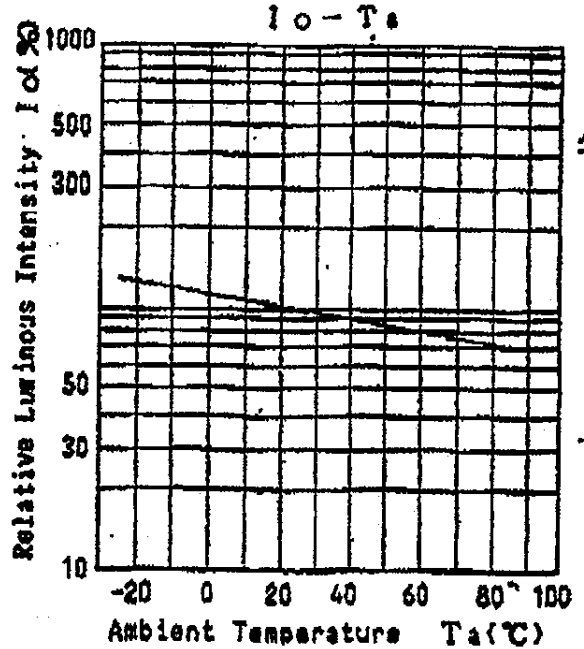
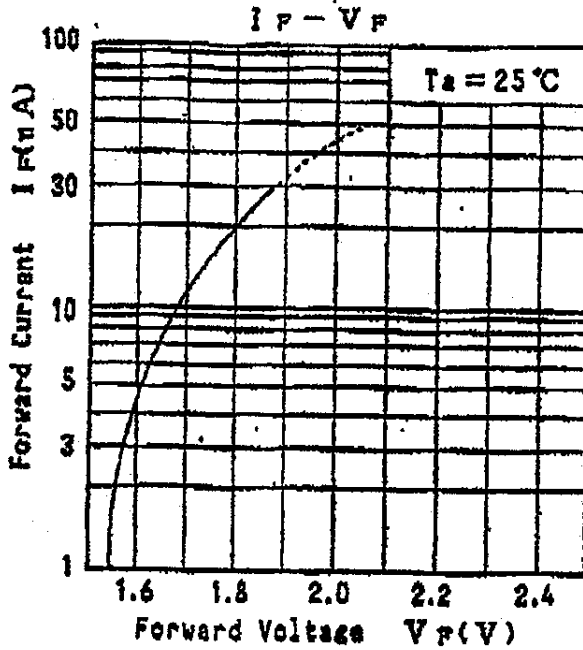
[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

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SEMICONDUCTOR PRODUCT						
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TYPE	Red Light Emitting Diode					
MATERIAL	GaAlAs					
APPLICATION	Indicators					
OUTLINE						
CONNECTION						
ABSOLUTE MAXIMUM RATINGS	$P_D$	$I_{FP}$	$I_{FDC}$	$V_R$	$T_{opr}$	$T_{stg}$
	70	150	30	3	-25~+85	-30~+100
	mW	mA	mA	V	°C	°C
$T_a = 25 \pm 3^\circ C$						
Test Specification						
	Condition	Typ	Limit		Unit	
			Min	Max		
V <sub>F</sub>	I <sub>F</sub> = 20mA	1.8		2.6	V	
I <sub>R</sub>	V <sub>R</sub> = 3V			100	μA	
I <sub>o</sub>	I <sub>F</sub> = 20mA DC	200	120		mc	
λ <sub>p</sub>	I <sub>F</sub> = 20mA DC	660			nm	
Δλ	I <sub>F</sub> = 20mA DC	20			nm	
<p>*1 The condition of I<sub>FP</sub> is duty 10%, Pulse width 1msec.</p> <p>*2 Lead material and surface treatment : Fe type + solder dipping</p>						

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6-VL04

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LN21RUQ RELIABILITY TEST DATA

TEST CONDITION AND RESULT

TEST ITEM	TEST CONDITION	RESULTS
Consecutive operating life test	IF DC max, Ta=25°C, t=1,000h	0/100
High temperature storage life test	Tatg max, t=1,000h	0/100
Low temperature storage life test	Tatg min, t=1,000h	0/100
Tropical life test	Ta=60°C, RH≥90%, t=1,000h	0/100
Soldering test	Ta=230±5°C, t=5sec, 1cycle, flux	0/50
Soldering heat test	Ta=280±5°C, t=10sec, 1cycle	0/100
Temperature cycle test (gaseous phase)	Tatg min ~ 25°C ~ Tatg max ~ 25°C (30min 5min 30min 5min) × 10 cycles	0/100
Thermal shock test (liquid phase)	Tatg max ~ 0°C (5min 5min) × 10 cycles	0/100
Fall test	Maple Wood h=75cm, 3 cycles	0/50
Terminal strength test	W=1Kg, t=30sec	0/50
Lead Bending	W=0.5Kg, 2 cycles	0/50

ITEM	SYMBOL	CONDITIONS	LIMIT	UNIT
Forward Voltage	VF	Same as the specification	Upper×1.2	V
Reverse Leakage Current	IR	Same as the specification	Upper×2.0	μA
Luminous Intensity	Io	Same as the specification	Min × 70	%

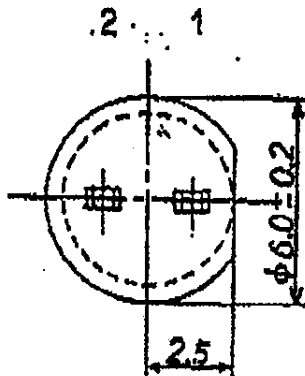
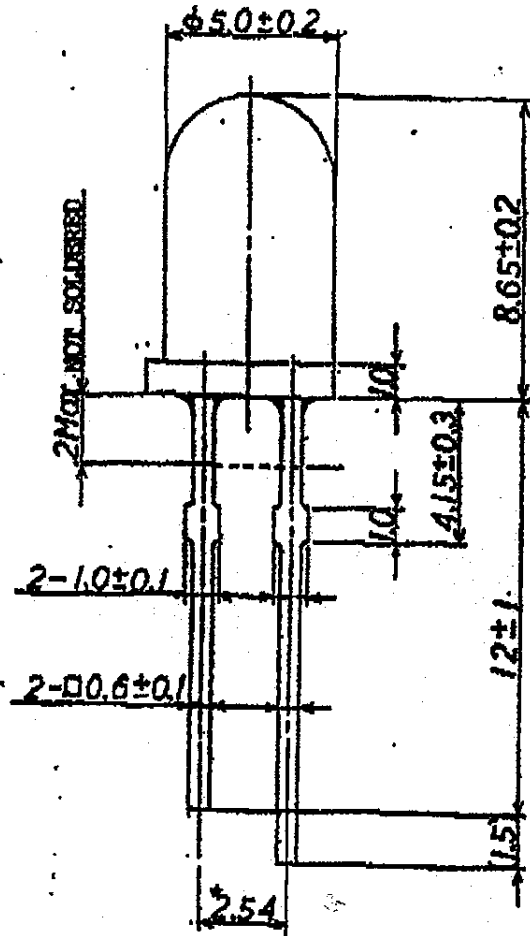
\* note : Operating Life Stability ≥ 50%

\* Assurance for LED

Assurance for LED within each condition is mentioned above.

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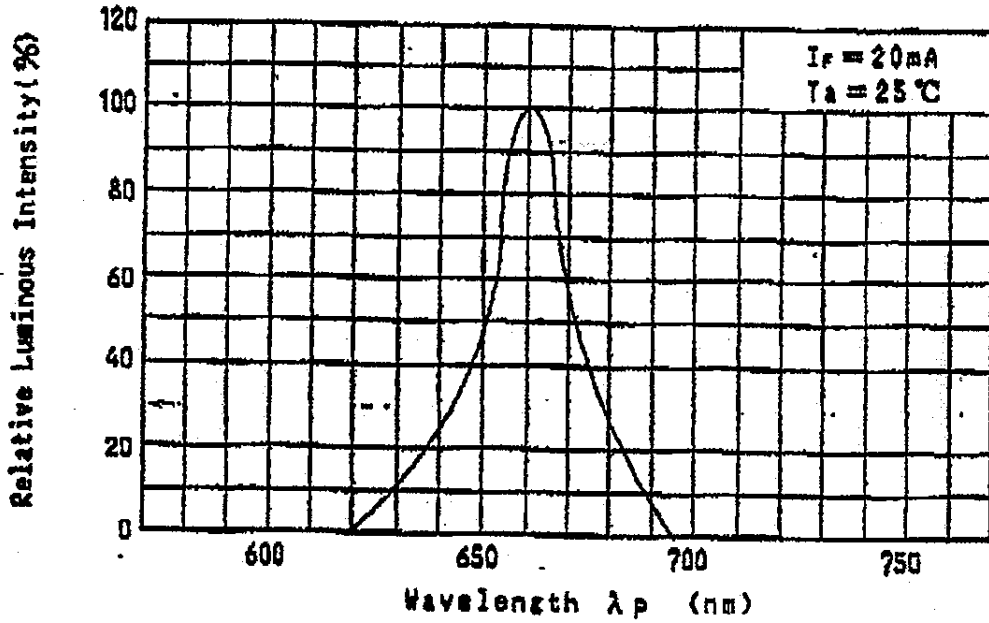
1: Anode  
 2: Cathode

\* Lead wire dimension.  
 (The bottom of lead)

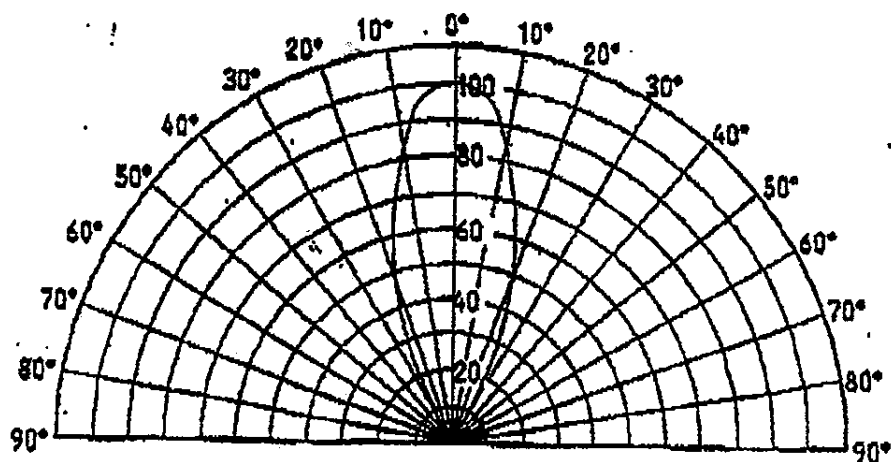
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Relative Luminous Intensity  
 Wavelength Characteristics



Directive Characteristics



3. Electro-optical characteristics (Note 2)

Parameter		Symbol		Condition	Min	Typ	Max	U
Threshold current		$I_{th}$		CH	20	40	65	
Operating current		$I_{op}$		$P_o=3mW$	30	50	75	
Operating voltage		$V_{op}$		$P_o=3mW$	-	1.75	2.5	
Wavelength		$\lambda_L$	(Note 3)	$P_o=3mW$	775	790	810	
Radiation angle	Parallel	$\theta_{  }$	(Note 4)	$P_o=3mW$	8	11	16	
	Perpendicular	$\theta_{\perp}$	(Note 4)	$P_o=3mW$	20	33	45	
Differential efficiency		$\eta$	(Note 3)	$2mW/(I(3mW)-I(1mW))$	0.1	0.4	0.7	$\mu$
PIN dark current		$I_d$		$V_r(PIN)=30V$	-	-	0.1	
PIN photo-current		$I_p$		$P_o=3mW$ $V_r(PIN)=5V$	0.2	0.6	1.0	
Emission point angle accuracy	X direction	$\theta_x$		$P_o=3mW$	-	-	$\pm 2$	
	Y direction	$\theta_y$		$P_o=3mW$	-	-	$\pm 3$	
Oscillation mode		Single transverse mode						

- (Note 2) Initial value
- (Note 3) Sampling inspection by lot
- (Note 4) Angle of 50% peak intensity (FWHM)