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SEMICONDUCTOR PRODUCT

LN21RUQ

TYPE	Red Light Emitting Diode
MATERIAL	GaAlAs
APPLICATION	Indicators
OUTLINE	
CONNECTION	

ABSOLUTE MAXIMUM RATINGS	P_D	*IFP	IFDC	VR	Topr	Tstg
	70	150	30	3	-25～+85	-30～+100
	mW	mA	mA	V	℃	℃
	Ta=25±3℃					

Test Specification

	Condition	Typ	Limit		Unit
			Min	Max	
VF	IF=20mA	1.8		2.6	V
IR	VR=3V			100	μA
Io	IF=20mA DC	200	120		mcd
λp	IF=20mA DC	660			nm
Δλ	IF=20mA DC	20			nm

*1 The condition of IFP is duty 10%,Pulse width 1msec.
*2 Lead material and surface treatment : Fe type + solder dipping

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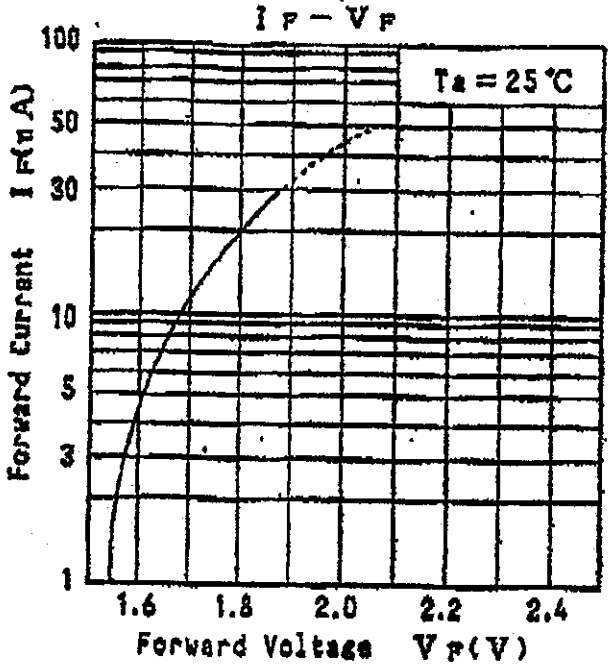

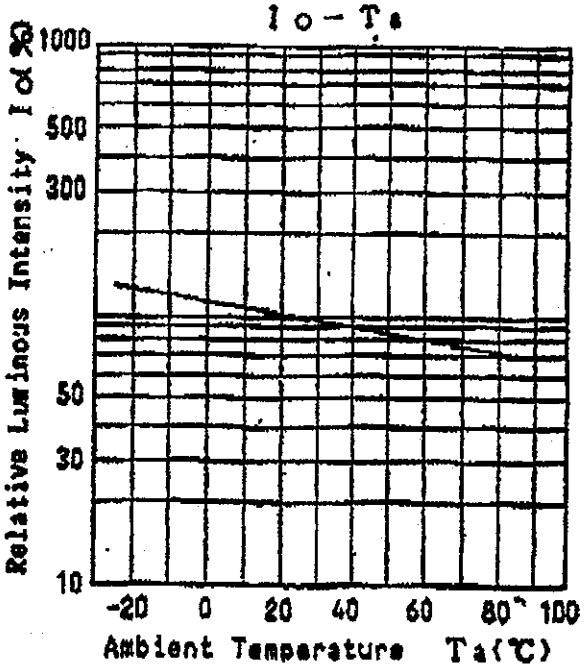

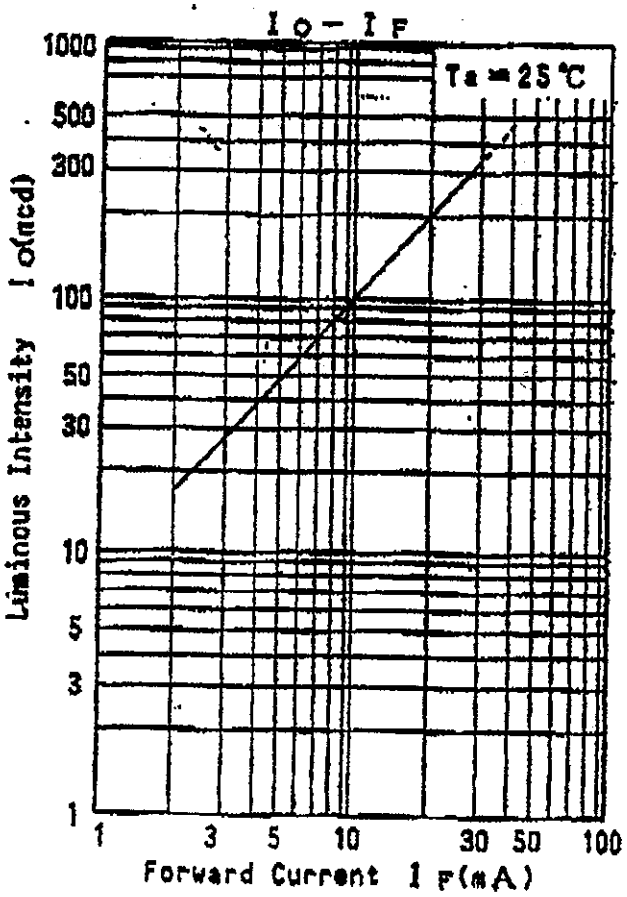

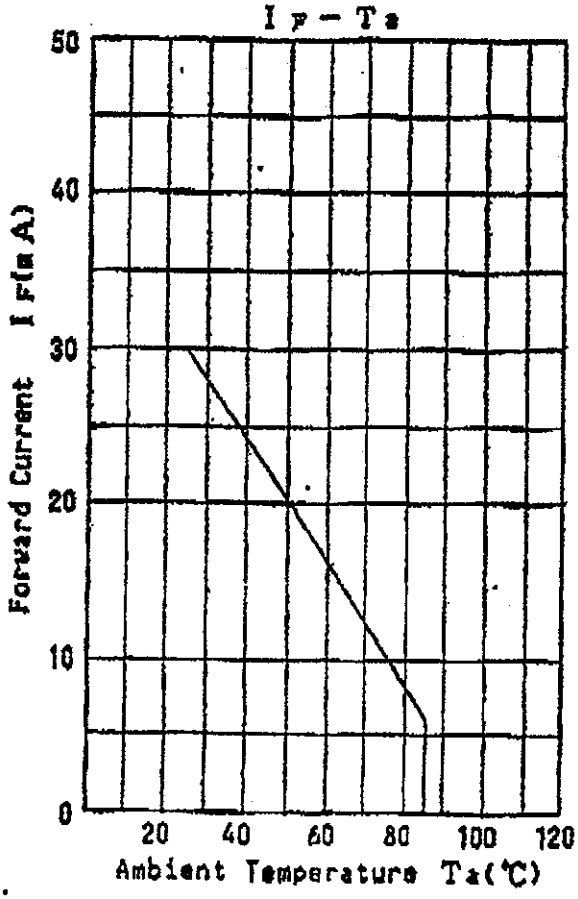

LN21RUQ RELIABILITY TEST DATA

TEST CONDITION AND RESULT

TEST ITEM	TEST CONDITION	RESULTS
Consecutive operating life test	IF DC max, Ta=25℃, t=1,000h	0/100
High temperature storage life test	Tstg max, t=1,000h	0/100
Low temperature storage life test	Tstg min, t=1,000h	0/100
Tropical life test	Ta=60℃, RH≧90%, t=1,000h	0/100
Soldering test	Ta=230±5℃, t=5sec, 1cycle, flux	0/50
Soldering heat test	Ta=280±5℃, t=10sec, 1cycle	0/100
Temperature cycle test (gaseous phase)	Tstg min ~ 25℃ ~ Tstg max ~ 25℃ (30min 5min 30min 5min) × 10 cycles	0/100
Thermal shock test (liquid phase)	Tstg max ~ 0℃ (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 wihtin each condition is mentioned above.

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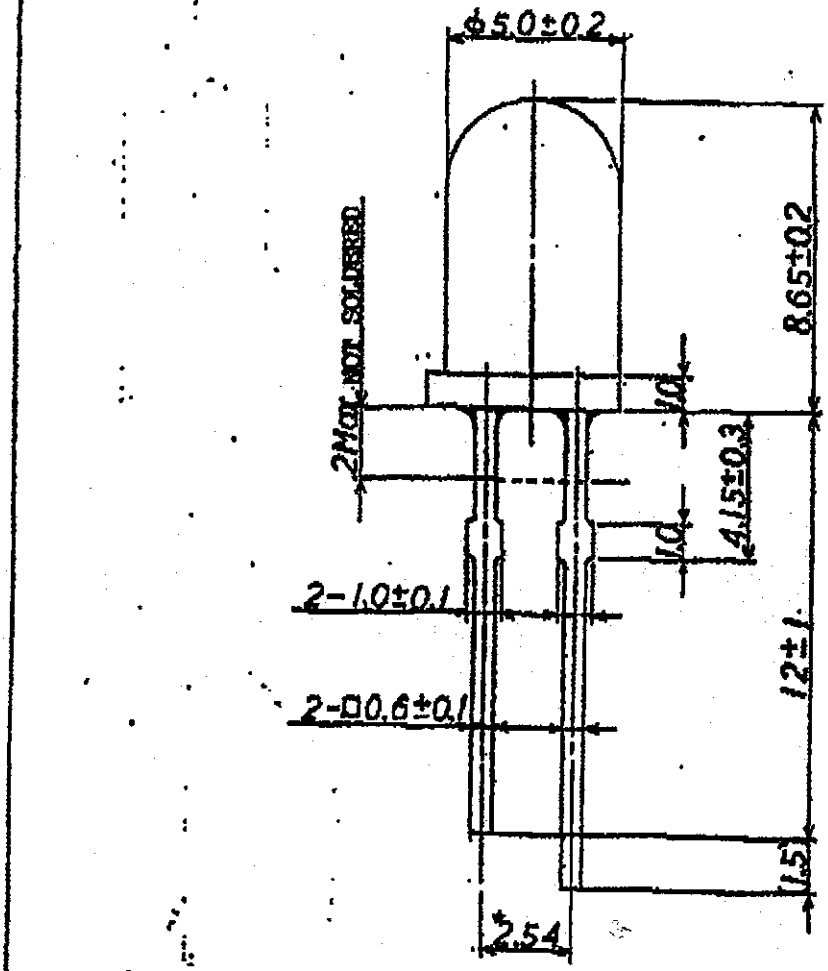

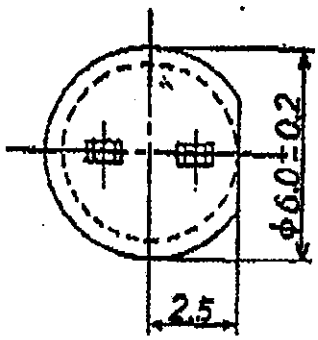

1 : Anode

2 : Cathode

* Lead wire dimension.
(The bottom of lead)

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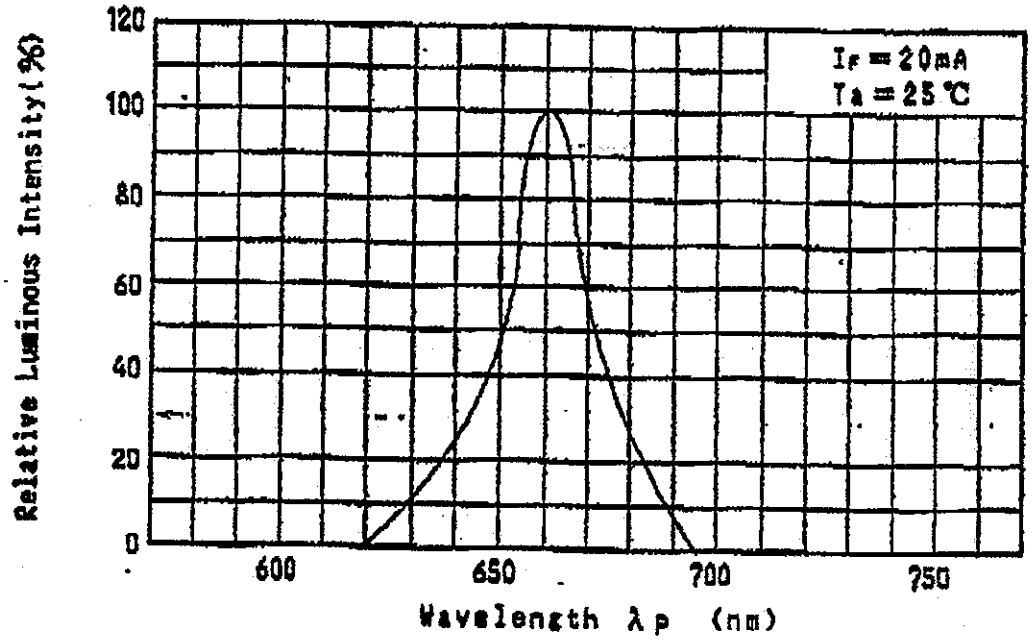
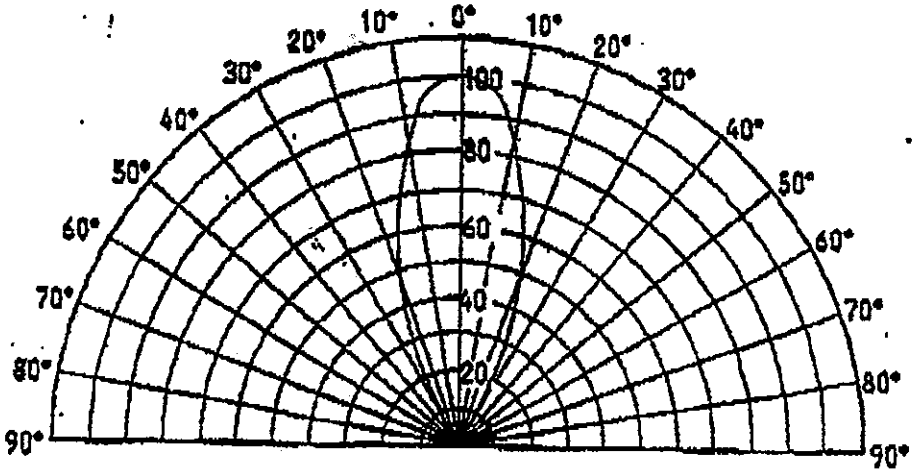
Relative Luminous Intensity
Wavelength Characteristics



Directive Characteristics



3. Electro-optical characteristics (Note 2)

Parameter		Symbol		Condition	Min	Typ	Max	U
Threshold current		Ith		CW	20	40	65	
Operating current		Iop		Po=3mw	30	50	75	
Operating voltage		Vop		Po=3mW	—	1.75	2.5	
Wavelength		λ_L	(Note 3)	Po=3mW	775	790	810	
Radiation angle	Parallel	$\theta_{//}$	(Note 4)	Po=3mW	8	11	16	
	Perpendicular	$\theta_{\perp}$	(Note 4)	Po=3mW	20	33	45	
Differential efficiency		η	(Note 3)	2mW/(I(3mw)-I(1mw))	0.1	0.4	0.7	m
PIN dark current		Id		Vr(PIN)=30V	—	—	0.1	
PIN photo-current		Ip		Po=3mW Vr(PIN)=5V	0.2	0.6	1.0	
Emission point angle accuracy	X direction	θx		Po=3mW	—	—	±2	
	Y direction	θy		Po=3mW	—	—	±3	
Oscillation mode		Single transverse mode						

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