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ROUND TYPE LED LAMPS



Lead-Free Parts

**LY2040-PF**

DATA SHEET

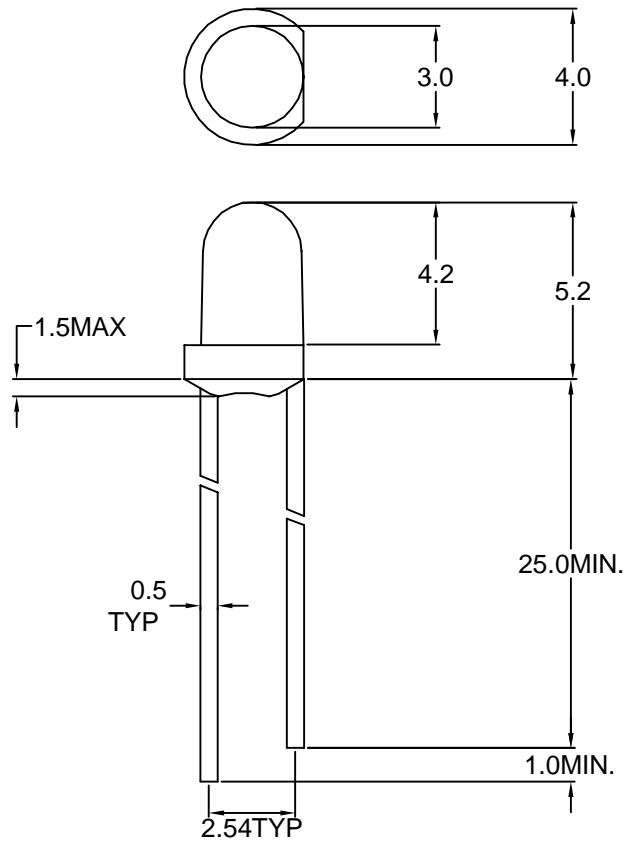
DOC. NO : QW0905-LY2040-PF

REV. : A

DATE : 25 - Apr. - 2005

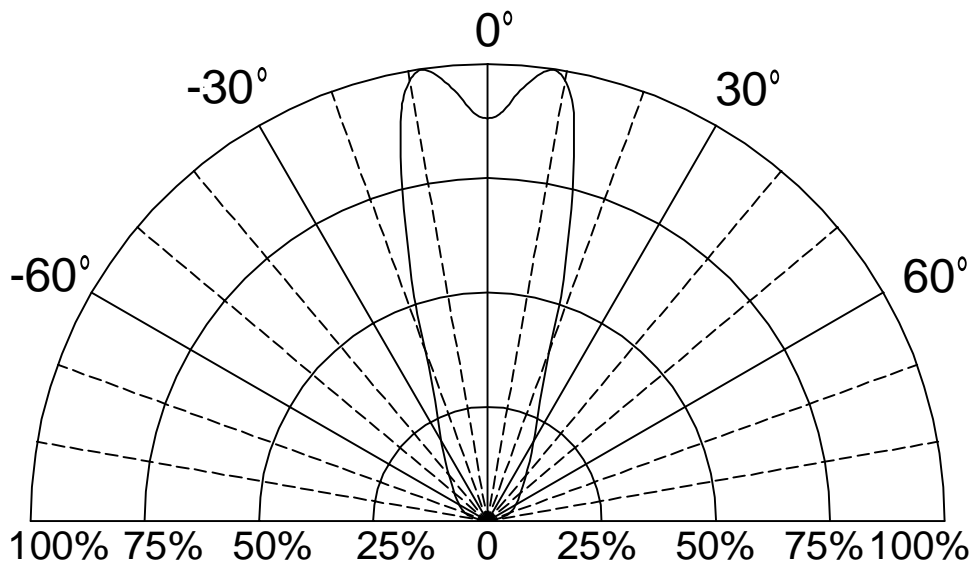


### Package Dimensions



Note : 1.All dimension are in millimeter tolerance is  $\pm 0.25$ mm unless otherwise noted.  
2.Specifications are subject to change without notice.

### Directivity Radiation





### Absolute Maximum Ratings at Ta=25

Parameter	Symbol	Ratings	UNIT
		Y	
Forward Current	IF	20	mA
Peak Forward Current Duty 1/10@10KHz	IFP	80	mA
Power Dissipation	PD	60	mW
Reverse Current @5V	Ir	10	μ A
Operating Temperature	Topr	-40 ~ +85	
Storage Temperature	Tstg	-40 ~ +100	
Soldering Temperature	Tsol	Max 260 for 5 sec Max (2mm from body)	

### Typical Electrical & Optical Characteristics (Ta=25 )

PART NO	MATERIAL	COLOR		Peak wave length Pnm	Spectral halfwidth nm	Forward voltage @20mA(V)		Luminous intensity @10mA(mcd)		Viewing angle 2 1/2 (deg)
		Emitted	Lens			Min.	Max.	Min.	Typ.	
LY2040-PF	GaAsP/GaP	Yellow	Yellow Diffused	585	35	1.7	2.6	8.0	20	36

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.  
 2. The luminous intensity data did not including ±15% testing tolerance.



### Typical Electro-Optical Characteristics Curve

Y CHIP

Fig.1 Forward current vs. Forward Voltage

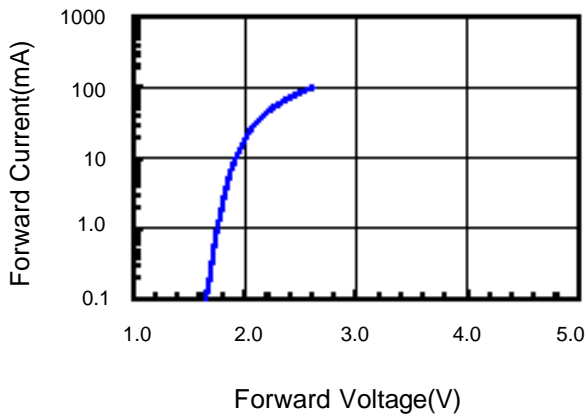


Fig.2 Relative Intensity vs. Forward Current

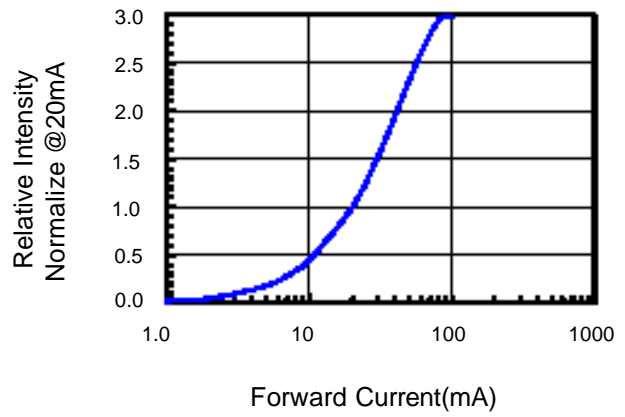


Fig.3 Forward Voltage vs. Temperature

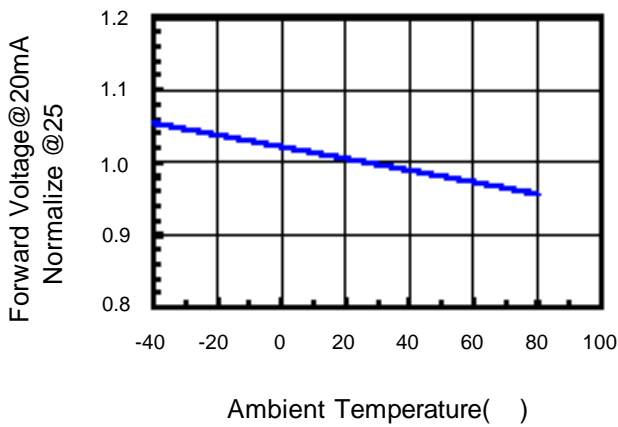


Fig.4 Relative Intensity vs. Temperature

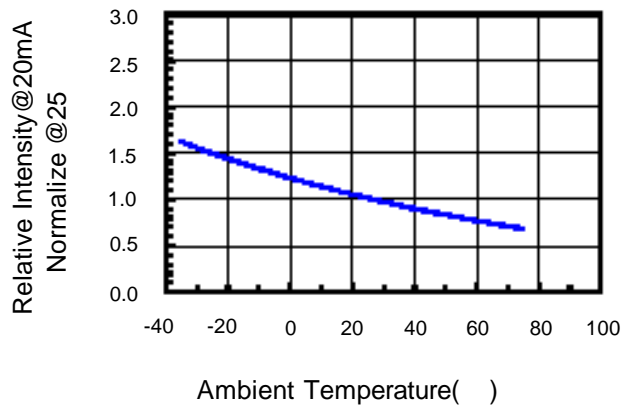
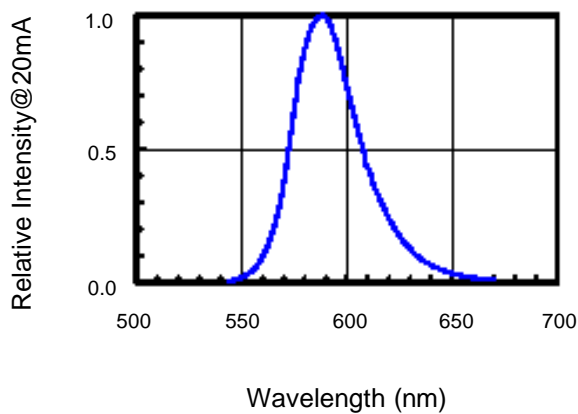
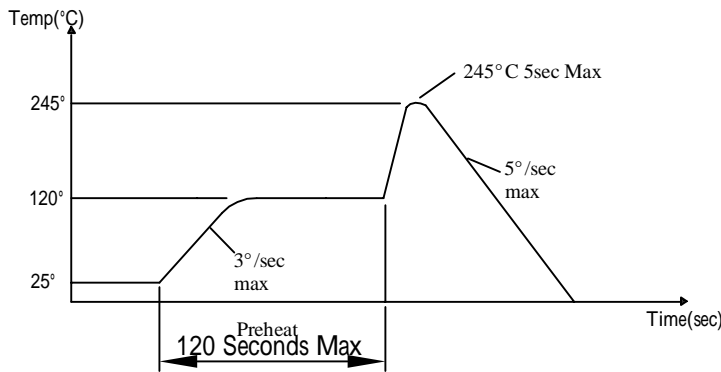


Fig.5 Relative Intensity vs. Wavelength





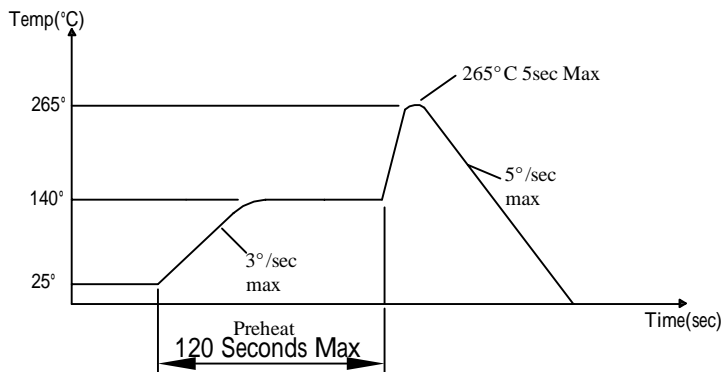
### Wave soldering Profile



**Soldering**  
 Soldering Iron:30W Max  
 Temperature 300 °C Max  
 Soldering Time:3 Seconds Max  
 Distance:2mm Min(From solder joint to case)

**Dip Soldering**  
 Preheat: 120 °C Max  
 Preheat time: 120 seconds Max  
 Ramp-up  
 3° C/sec(max)  
 Ramp-Down:-5 ° C/sec(max)  
 Solder Bath:245 ° C Max  
 Dipping Time:5 seconds Max  
 Distance:2mm Min(From solder joint to case)

### Wave Soldering Profile (Pb Free)



**Soldering**  
 Soldering Iron:30W Max  
 Temperature:350 ° CMax  
 Soldering Time:3seconds Max  
 Distance:2mm Min(From solder joint to case)

**Dip Soldering**  
 Preheat: 140 °C Max  
 Preheat time: 120seconds Max  
 Ramp-up  
 3° C/sec(max)  
 Ramp-Down:-5 ° C/sec(max)  
 Solder Bath:265 ° C Max  
 Dipping Time:5 seconds Max  
 Distance:2mm Min(From solder joint to case)



Reliability Test:

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	This test is conducted for the purpose of detemining the resisance of a part in electrical and themal stressed.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105 ±5 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under ondition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40 ±5 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65 ±5 2.RH=90 %-95% 3.t=240hrs ±2hrs	The purpose of this test is the resistance of the device under tropical for hous.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105 ±5 & -40 ±5 (10min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
Solder Resistance Test	1.T.Sol=260 ±5 2.Dwell time= 10 ±1sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=230 ±5 2.Dwell time=5 ±1sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2