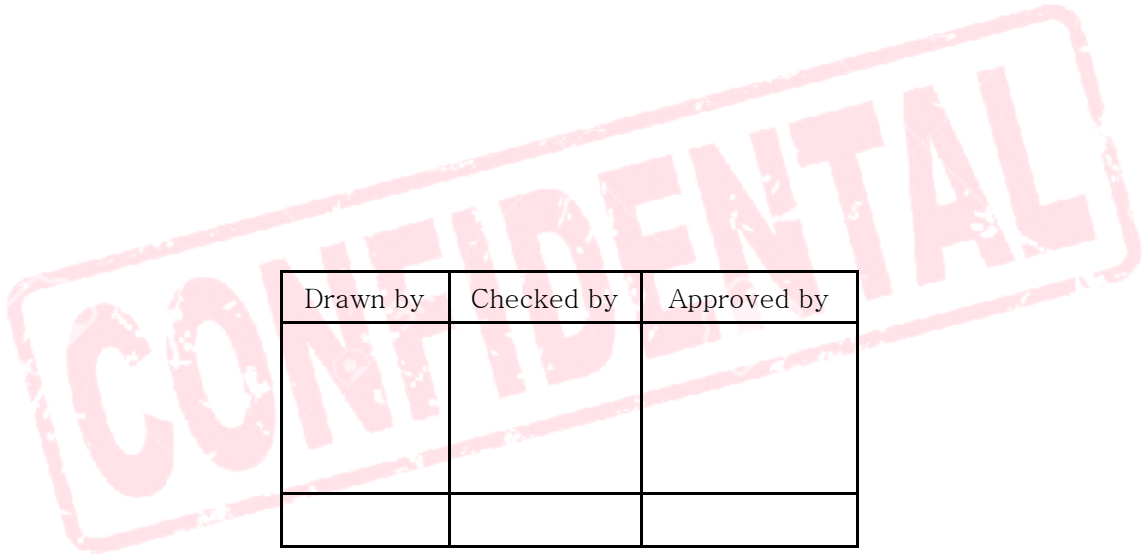


LED LAMP SPECIFICATION



Drawn by	Checked by	Approved by

Rev. 0.0



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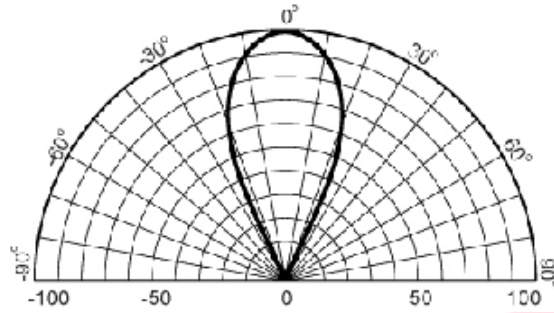


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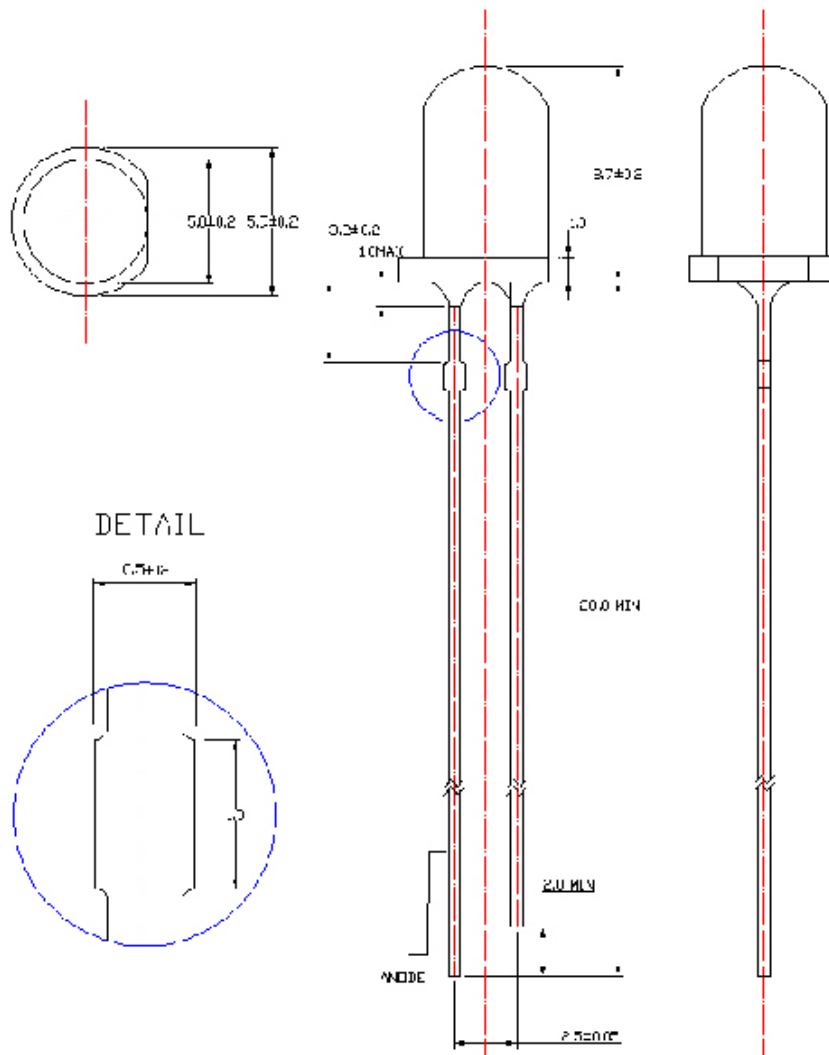
ULP-RM36A-45BN

1. Features

- 5mm dia round top lamp.
- TS AlGaInP/GaP Super bright Red.
- Viewing angle 45°.
- Water clear epoxy-molding type.
- High reliability and long life.
- High luminous intensity.
- Pb free.



2. Dimension





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3. Absolute maximum ratings (Ta=25°C)

Parameter	Sym	Rating	Unit
Forward Current	IF	30	mA
Reverse Voltage	VR	5	V
Power Dissipation	PD	69	mW
Operation Temp	Topg	-35 ~ + 85	°C
Storage Temp	Tstg	-40 ~ +100	°C

Drive current between 10mA and 30mA are recommended for long term performance

4. Opto electric characteristics (Ta=25°C)

Parameter	Sym	Condition	Min	Typ	Max	Unit
Forward Voltage	VF	IF = 20mA	1.90		2.30	V
Reverse Current	IR	VR = 5V			10	μA
Dominant wave length	λD	"	620	625	630	nm
Spectra Width at Half Height		"		20		nm

5. Soldering conditions

Soldering Temp ≤ 260°C
Soldering Time : 5 sec at location 3.0mm away from the base of the epoxy bulb.

6. Specification of Bin Grading

Forward Voltage(Vf)			λd(nm)		Iv (mcd) @20mA		
Bin	Min	Max	Min	Max	Bin	Min	Typ
0	1.90	2.30	620	630	T	3500	5500



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7. Reliability

1) Result of reliability Test

Test Item	Test Conditions	Note	Number of Damaged
Steady State Operating Life	Ta = 25°C IF=20mA	240hrs	0/100
Steady State Operating Life of Low Temperature	Ta=30°C, IF=20mA	240hrs	0/100
Steady State Operating Life of High Temperature	Ta=85°C, IF=10mA	240hrs	0/100
Steady State Operating Life of High Humidity Heat	60°C, RH=90% IF=15mA	240hrs	0/100
Resistance to Soldering Heat	Tsld=260 ± 5°C, 10sec. 3mm from the base of the epoxy bulb	1 time	0/100
Solder ability	Tsld=260 ± 5°C, 5sec. (using flux)	1 time Over 90%	0/100
Thermal Shock	0°C ~ 100°C 15sec. 15sec.	100 cycles	0/100
Temperature Cycle	40°C ~ 25°C ~ 100°C ~ 25°C 30min. 5min. 30min. 5min.	100 cycles	0/100
Moisture Resistance Cyclic	25°C ~ 65°C ~ 10°C 90%RH 24hrs / 1cycle	10 cycles	0/100
High Temperature Storage	Ta = 100°C,	240hrs	0/100
Temperature Humidity Storage	Ta = 60°C RH=90%	240hrs	0/100
Low Temperature Storage	Ta = -40°C	240hrs	0/100

2) The reliability criteria of Lamp LED

Item	Symbol	Test Conditions	Criteria for Judgement.	
			Min.	Max.
Forward Voltage	V _F	IF=20mA	-	U.S.L. *) X 1.1
Reverse Current	I _R	V _R =5V	-	U.S.L. *) X 2.0
Luminous Intensity	I _V	IF=20mA	L.S.L.***) X 0.7	-

*) U.S.L. : Upper Standard Level

**) L.S.L. : Lower Standard Level.



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■ Typical Electro-Optical Characteristics Curve:

Fig 1. Forward Current vs. Forward Voltage

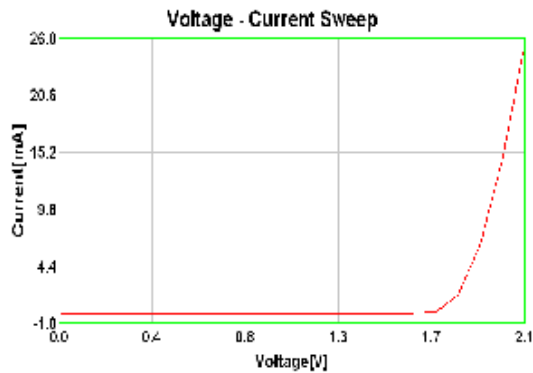


Fig 2. Relative Intensity vs. Forward Current

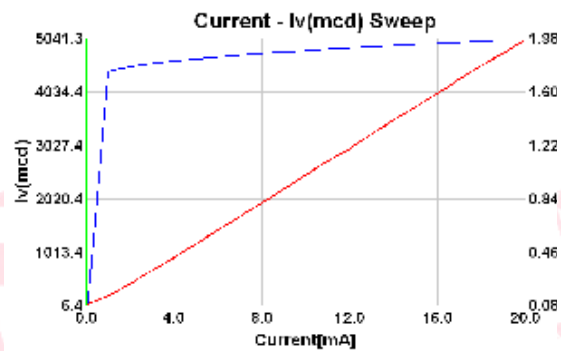


Fig 3. Relative Intensity vs. Wavelength

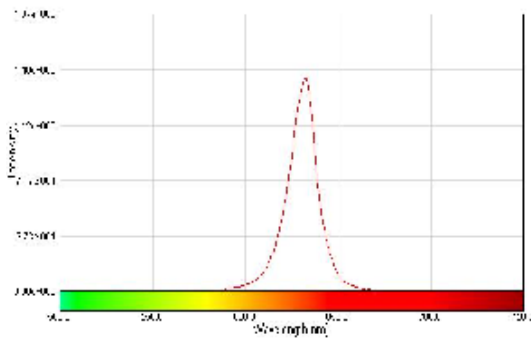
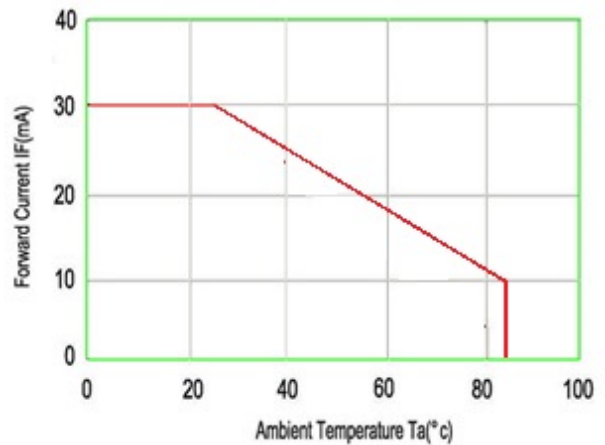


Fig 4. Forward Current vs. Temperature



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