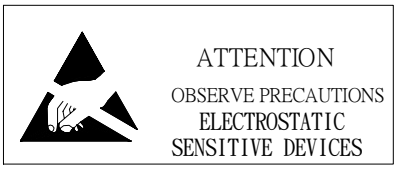
SPECIFICATION FOR LED LAMP

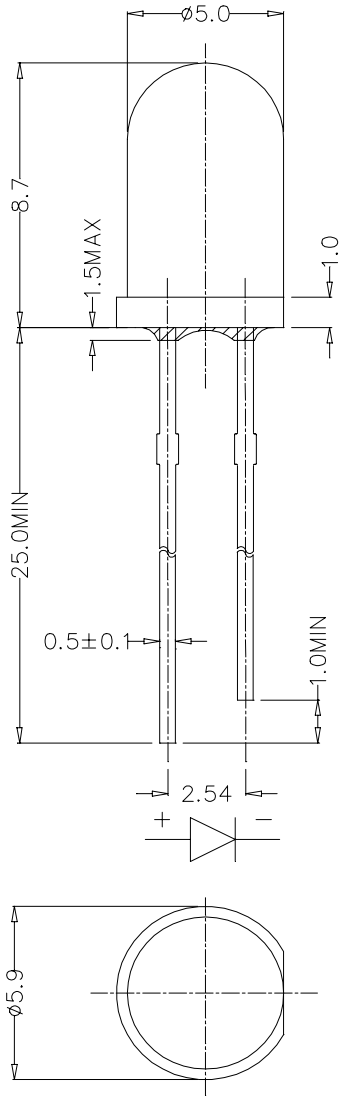
MODEL : LC503MUV1-30Q
REF. : A 01F09

DESCRIPTIONS:

30 DEGREE 5MM LED LAMP
IN VIOLET COLOR WITH
WATER TRANSPARENT LENS
AND NO STOPPER



DIMENSION DRAWING



NOTES: 1. ALL DIMENSIONS ARE IN mm TOLERANCE IS.±0.25mm UNLESS OTHERWISE NOTED.

2. AN EPOXY MENISCUS MAY EXTEND ABOUT 1.5mm DOWN THE LEADS.

3. BURR AROUND BOTTOM OF EPOXY MAY BE 0.5 mm MAX.

	Scale 4 : 1		Allow 0.25		
	Date:	LC503MUV1-30Q	Units: mm	Approved	
	Title: OUTLINE DIMENSION	Model #	ECN#	Checked	
				Drawn	

ITEM	MATERIALS
Resin (Mold)	Epoxy
Lens Color	Water Transparent
Lead Frame	Ag Plating Iron Alloy
Dice	InGaN/SiC

These specification shall be applied to the LED model # LC503MUV1-30Q

SPECIFICATION

Absolute Maximum Rating (T_a = 25℃)

Items	Symbol	Absolute maximum Rating	Unit
Forward Current	I_F	30	mA
Peak Forward Current pulse width ≦0.1msec duty ≦1/10	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	120	mW
Operation Temperature	T_{opr}	-20 ~ + 80	℃
Storage Temperature	T_{stg}	-30 ~ +100	℃
Lead Soldering Temperature	T_{sol}	260°C for 3sec (3mm from the base of the epoxy bulb)	

Initial Electrical/Optical Characteristics (T_a = 25℃)

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 20mA	3.2	3.7	4.2	V
Reverse Current	I_R	V_R = 5V	---	---	100	μA
Wavelength	λ_D	I_F = 20mA	380	390	400	nm
Luminous Efficacy	η	I_F = 20mA	---	2.8	---	lm/W
Radiometric Intensity	I_e	I_F = 20mA	12.4	25	---	mW/sr
50% Power Angle	2θ½	I_F = 20mA	---	30	---	deg

Rank Combination

Rank	M	N	P	Q	R	S
Radiometric Intensity (mW/sr I_F = 20mA)	12.4-14.9	14.9-17.8	17.8-21.4	21.4-25.7	25.7-30.8	30.8-37.0

*One normal delivery will include all ranks listed above.

The quantity ratio of the ranks is decided

Measurement Uncertainty of the radiometric intensity : ±15%

RELIABILITY

Test Items And Results

Type	Test Item	REF. Standard	Test Condition	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	JIS C 7021 (1977)A-4	-20℃⇒ 25℃⇒ 80℃⇒ 25℃ 30mins, 5mins, 30mins, 5mins	100 cycles	0 / 100
	Thermal Shock	MIL-STD-107D	-20℃⇒ 80℃ 15mins, 15mins	100 cycles	0 / 100
	High Humidity Heat Cycle	JIS C 7021 (1977)A-5	30℃⇒ 65℃ 90%RH 24hrs/1cycle	10 cycles	0 / 100
	High Temperature Storage	JIS C 7021 (1977)B-10	T_a = 80℃	1000hrs	0 / 100
	Humidity Heat Storage	JIS C 7021 (1977)B-11	T_a = 60℃ RH = 90%	1000hrs	0 / 100
	Low Temperature Storage	JIS C 7021 (1977)B-12	T_a = -30℃	1000hrs	0 / 100
Operation Sequence	Life Test	JIS C 7035 (1985)	T_a = 25℃ I_F = 20mA	1000hrs	0 / 100
	High Humidity Heat Life Test	*	60℃ RH=90% I_F = 20mA	500hrs	0 / 100
	Low Temperature Life Test	*	T_a = -20℃ I_F = 20mA	1000hrs	0 / 100
Destructive Sequence	Resistance to Soldering Heat	JIS C 7021 (1977)A-11	T_{sol} = 260±5℃ , 10sec (3mm from the base of the epoxy bulb)	1 time	0 / 20
	Solderability	JIS C 7021 (1977)A-2	T_{sol} = 235±5℃ , 5sec (using flux)	1 time (over 95%)	0 / 20
	Lead Pull/Bend Test	JIS C 7021 (1977)A-11	Load 2.5N (0.25kgf) 0°⇒ 90°⇒ 0° bend 3 times	No noticeable damage	0 / 20

*Refer to reliability test standard specification for in this line.

Criteria for Judging The Damage

Item	Symbol	Test Condition	Criteria for Judgment	
			Min.	Max.
Forward Voltage	V_F	I_F = 20mA	---	Initial Data ×1.1
Reverse Current	I_R	V_R = 5V	---	100 μ A
Radiometric Intensity	I_e	I_F = 20mA	Initial Data ×0.7	---

GRAPHS

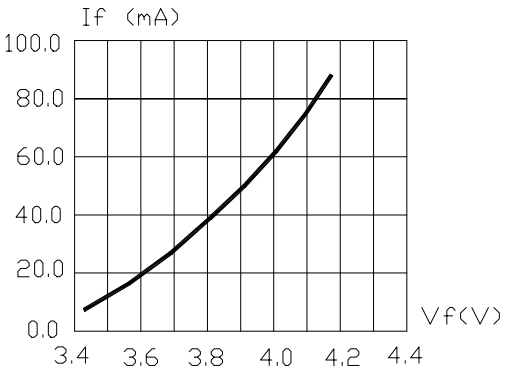


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

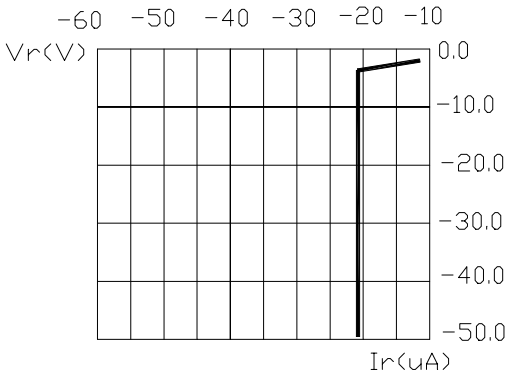


FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.

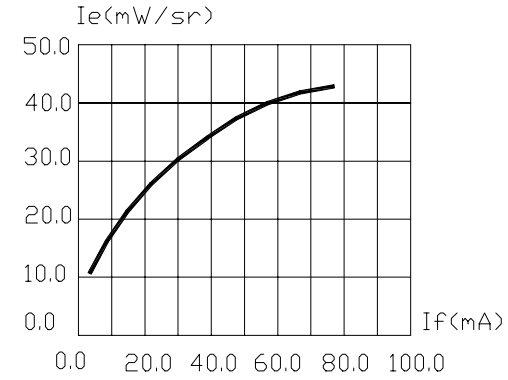


FIG.3 RELATIVE RADIOMETRIC INTENSITY VS. FORWARD CURRENT.

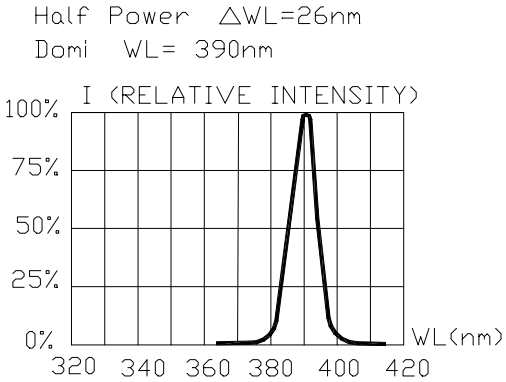


FIG.4 RELATIVE INTENSITY VS. WAVE LENGTH.

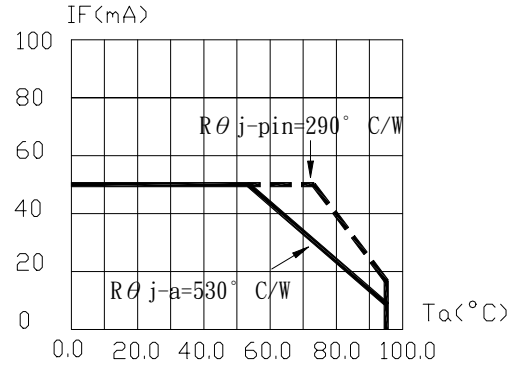


FIG.5 MAXIMUM FORWARD DC CURRENT VS TEMPERATURE. DERATING BASED ON Tjmax=105°C

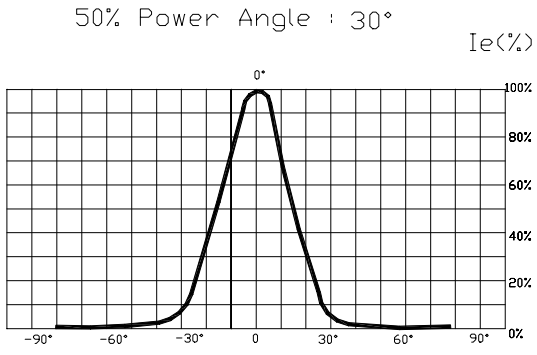


FIG.6 SPATIAL DISTRIBUTION.

1.Cathode PAD Area (0.18 ×0.18inch^2)
2.Height above nominal seating plane in inches(0.3inch)