SPECIFICATION

Product : Violet Dome Lamp (3mm)

Part No. : IWL-V3R30F-XXX

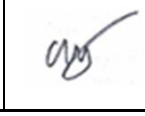
Customer :

Date : 2006. 06. 19 Ver. 1.0

Customer :

Checked By	Checked By	Checked By	Checked By	Approval

Manufacturer : ITSWELL Co., LTD

Proposed By	Checked By	Checked By	Checked By	Approval
				

Comment

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Tel:+82-31-244-0002, FAX:+82+31-244-1806
Ochang Company :
363-880, 9-4Block, Ochang Scientific Industrial Complex, Ochang, Cheongwon, Chungbuk, Korea
URL : www.itswell.com, TEL : int) 82-43-218-1800, FAX.: int) 82-43-218-1805

■ Features

- Round type lamp
- 3mm silicone mold type
- Ultra Violet, water clear transparency lens type
- Chip material based GaN

■ Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Value	Unit
Power Dissipation	P_d	120	mW
Continuous Forward Current	I_F	30	mA
Peak Forward Current ※1	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-25 ~ 85	℃
Storage Temperature	T_{stg}	-40 ~100	℃
Soldering Temperature	T_{sol}	260 (5sec)	℃

※1 Duty ratio = 1/10, Pulse width = 0.1ms

■ Electro-optical Characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage ※2	V_F	I_F= 20mA	3.0	-	4.0	V
Reverse Current	I_R	V_R= 5V	-	-	50	㎂
Radiant Intensity ※3	Φ_V	I_F= 20mA	5	-	30	mW/sr
Viewing angle ※4	$2\Theta_{1/2}$	I_F= 20mA	-	30	-	deg.
Peak Wavelength ※5	λ_P	I_F= 20mA	400	410	420	nm

※2 Forward Voltage has an accuracy of ±0.1V.

※3 Radiant Intensity is tested by a tester calibrated CAS 140B(CIE LED_B) and has an accuracy of ±10%

※4 Viewing angle is the angle until 50% of brightness measured from the front part of LED.

※5 Peak Wavelength has an accuracy of ±2nm

■ Φ_V Rank

Code	Φ_V (mW/sr)
1	5-30

■ V_F Rank

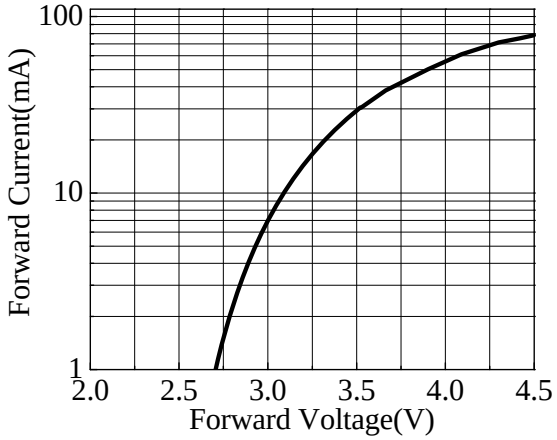
Code	VF(V)
a	3.0-4.0

■ W_P Rank

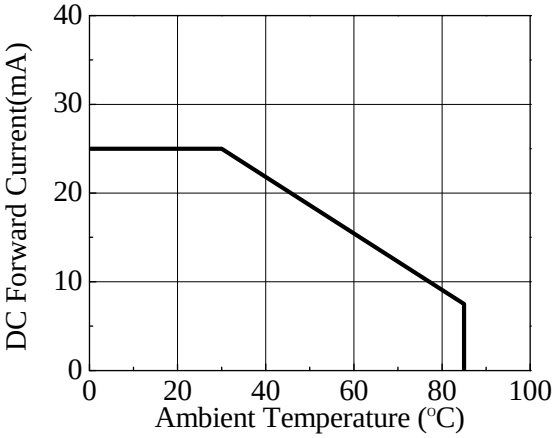
Code	WP(nm)
A	400-410
B	410-420

■ Typical Curves

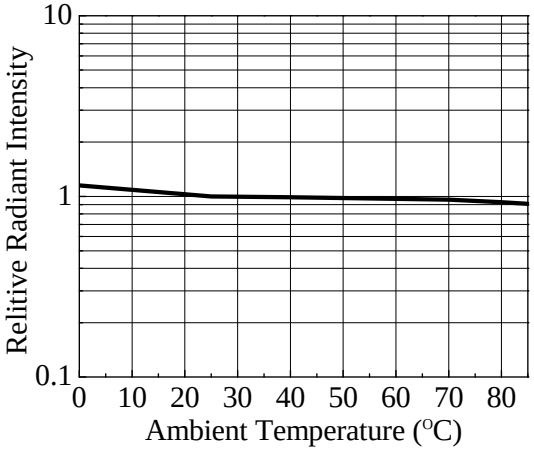
Forward Current vs. Forward Voltage



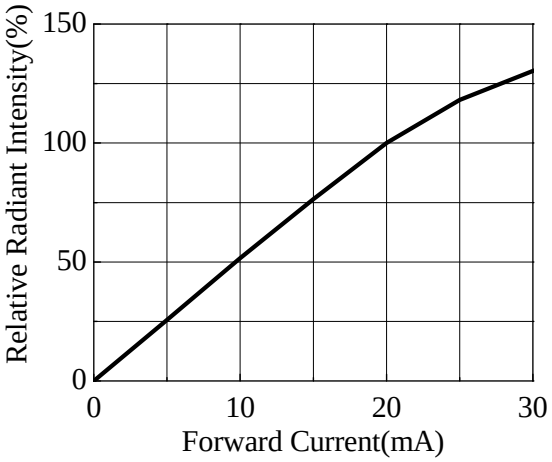
Forward Current vs. Ambient Temperature



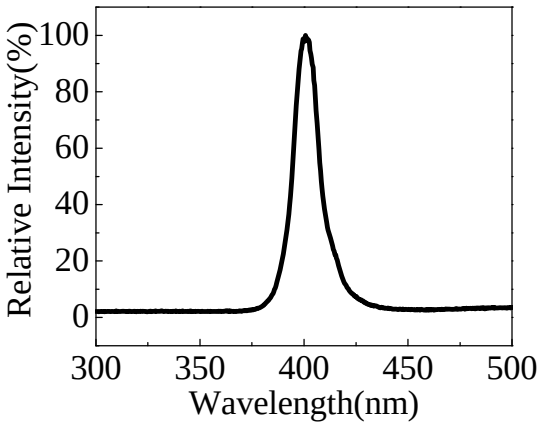
Relative Radiant Intensity vs. Ambient Temperature



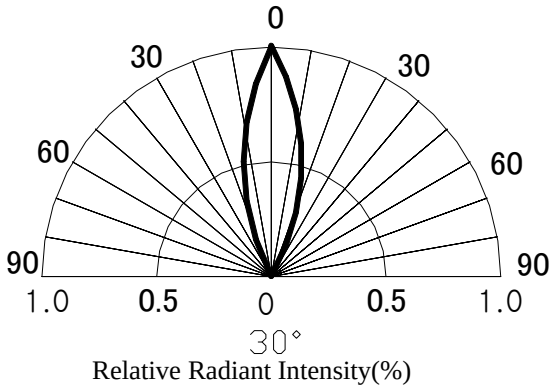
Relative Radiant Intensity vs. Forward Current



Relative Intensity vs. Wavelength

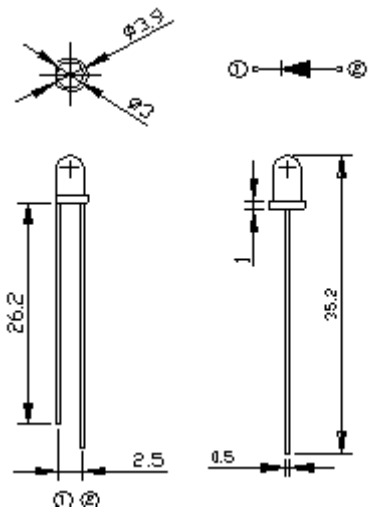


Radiation Diagram

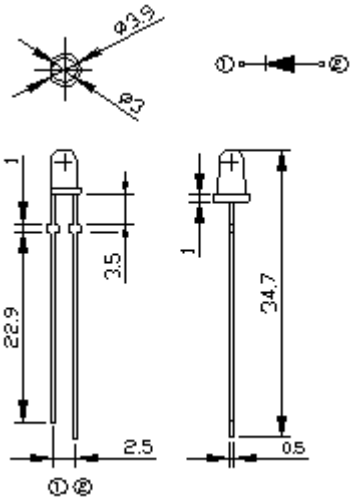


■ Out Line Dimension

- Without Stopper



- With Stopper

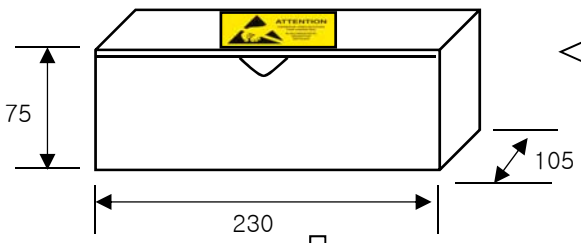


Note :
1. Base Material : Fe Alloy
2. Lead Plating : Ag/Ni
3. Molding : Silicone
4. Pb Free

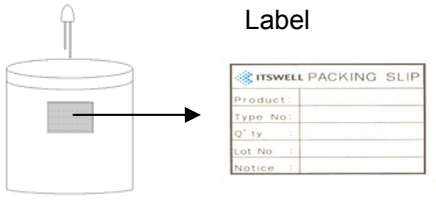
■ Tapping Dimension & Packing

- Bulk Packing

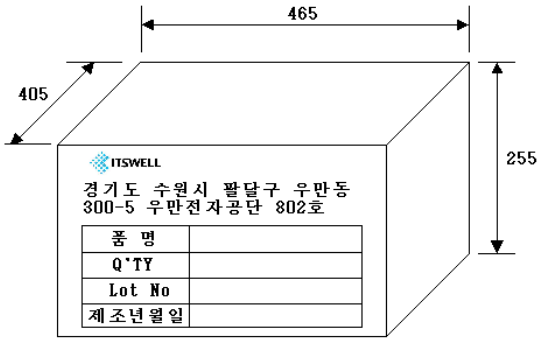
☐ Inner Box



☐ Bag packing



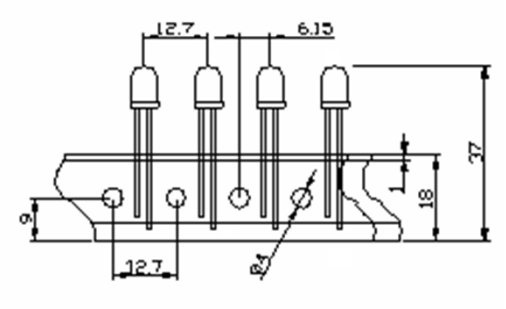
☐ Out Packing



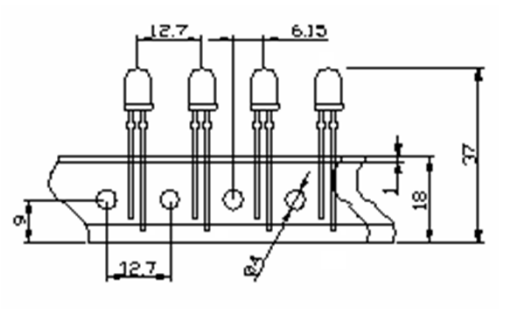
- Maximum Inner Box 20 / 1 Box
  40,000 pcs/ 1 Box
- Out box material : Carton

■ Tapping Packing

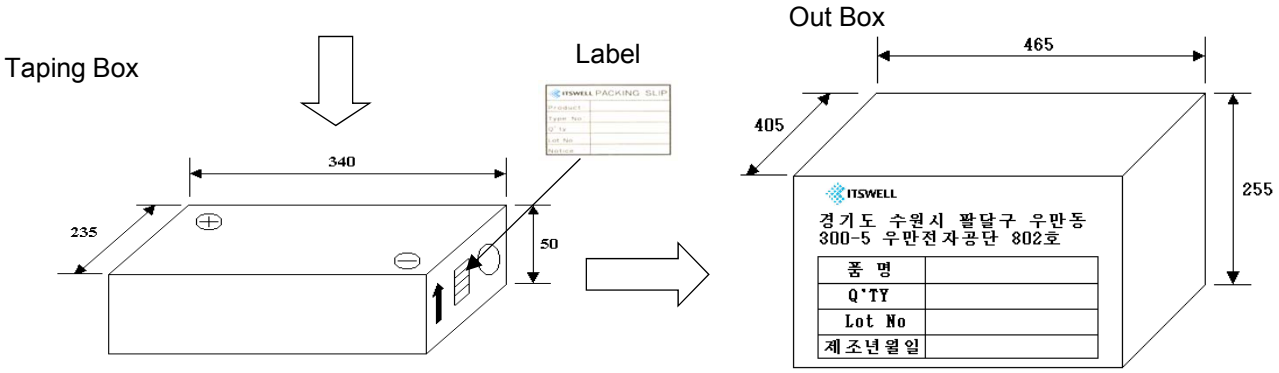
- Without Stopper



- With Stopper



Note :
1. All dimensions are in millimeters.
2. Tolerance is ±0.5mm



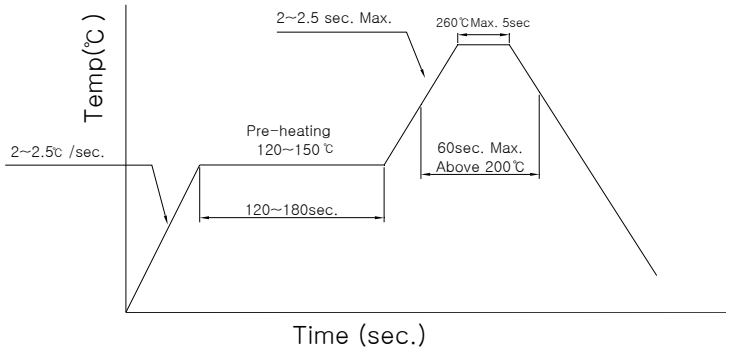
Tapping Box (Carton)
1 Tapping box / Pack with Silica gel
3,000 pcs/ 1 Tapping

Maximum 10 tapping box / Box
30,000 pcs/ Box

■ Precaution in use

① Soldering Conditions

- When soldering Dome LED , Heat may affect the electrical and optical characteristics of the LEDs.
- In soldering, do not stress the lead frame and the resin part under the high temperature.
- The epoxy part should be protected from mechanical stress or vibration until the Dome LEDs return to room temperature after soldering.
- Preliminary heating to be at 150℃ max. for 180 Seconds max.
- Soldering heat to be at 260℃ max. for 5sec. Max.
- For manual Soldering is Not more than 3sec @MAX350℃, under soldering iron



② Storage

- Use with 7days after opening packing. Store in 10 to 30 ℃ Dome LED lead frames are plated silver. The silver surface may be affected by environment which contain corrosive gases and so on. Please avoid condition which may cause the Dome LED to corroded, tarnish or discolor.

③ Static Electricity

- Static electricity or surge voltage damages the Dome LEDs. It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.
- A tip soldering iron is requested to be grounded. An ionizer should also be installed where risk of static.
- All devices, equipment and machinery must be properly grounded (via 1MΩ). It is recommended that measures be taken against surge voltage to the equipment that mounts the Dome LEDs.

④ Cleaning

- Isopropyl Alcohol or Ethylene Alcohol is recommended in 5 minutes at room temperature. Don't use unspecified chemical may cause crack or haze on the surface of the epoxy resin.
- Before cleaning, a pre-test should be done to confirm whether any damage to the Dome LED will occur.
- Freon solvents should not be used to clean the Dome LEDs because of worldwide regulations.

■ Reliability

- Reliability Test Item

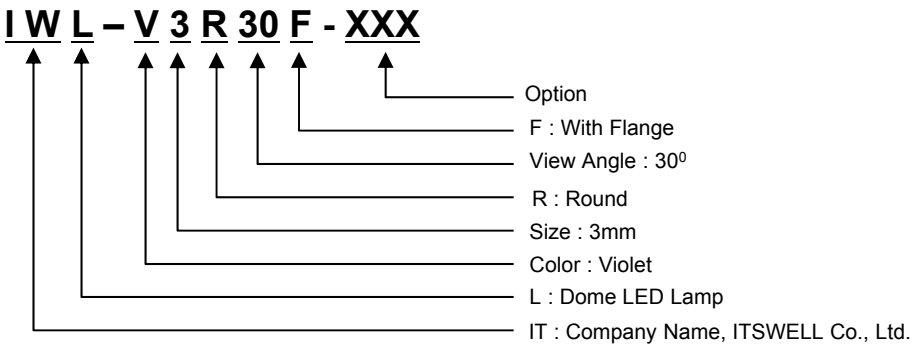
Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Resistance to Soldering Heat (Reflow Soldering)	JEITA ED-4701 300 301	Tsld = 260℃, 5sec. (Pretreatment 30 ℃, 70%, 168hrs)	2 times	0/50
Solderabilty (Reflow Soldering)	JEITA ED-4701 200 303	Tsld = 235 ± 5℃, 5sec. (Lead Solder)	1 time Over 95%	0/50
Thermal Shock	JEITA ED-4701 100 105	-40 ℃ ~ 100 ℃ 15sec 15sec	100 Cycles	0/50
Temperature Cycle	JEITA ED-4701 100 105	-40 ℃ ~ 25℃~ 100℃ ~ 25 ℃, 30min 5min 30min 5min	100 Cycles	0/50
High Temp. Storage	JEITA ED-4701 200 201	Ta = 100℃	1000hrs	0/50
Temp. Humidity Storage	JEITA ED-4701 100 103	Ta = 60 ℃, RH = 90%	1000hrs	0/50
Low Temp. Storage	JEITA ED-4701 200 202	Ta = -40 ℃	1000hrs	0/50
Steady State Operating Life Condition	-	Ta = 25 ℃, IF = 20mA	1000hrs	0/50
Steady State Operating Life of High Temp.	-	Ta = 85 ℃, IF = 5mA	1000hrs	0/50
Steady State Operating Life of High Humidity Heat	-	60 ℃, RH = 90%, IF = 15mA	500hrs	0/50
Steady State Operating Life of Low Temp.	-	Ta = -30, IF = 20mA	1000hrs	0/50

- Criteria for Judging the Damage

Items	Test Conditions	Criteria for judgment
Radiant Intensity (Φ_V)	I_F = 20mA	> 70% of S
Forward Voltage (VF)	I_F = 20mA	Less than 110% of U
Reverse Current (I_R)	V_R = 5V	Less than 50 ㎂

* U means the upper limit of specified characteristics, S means initial value.

■ Part Name Description



■ ATTENTION : Electric Static Discharge (ESD) Protection

The symbol shown on the page herein to introduce 'Electro-Optical Characteristics'. ESD protection for GaP and AlGaAs is based chips is still Necessary even though they are safe in low static-electric discharge. Material in AlInGaP, GaP, or/and InGaN based chips are static sensitive devices. ESD protection has to considered and taken in the initial design stage. If manual work/process is needed, please ensure the device is well protective From ESD during all the process.
LED's ESD Level is 'Class 1' and The range of Forward Voltage is 1V ~ 1999V.

■ Spec. Review History

Revie Ver.	ate	Correction List	tc.
Ver 1.0	2006.6.1	stablish	