



**CIEL LIGHT CO., LTD.**

**PRODUCT SPECIFICATION**

Model No.: CLS-3211BUR-11

Drawing No.: \_\_\_\_\_

Customer: \_\_\_\_\_

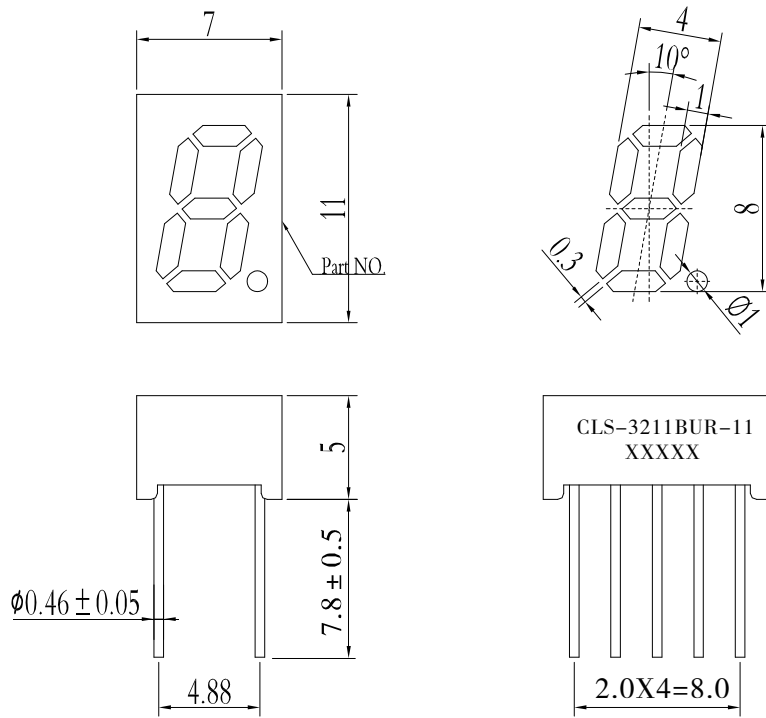
Customer's Model No.: \_\_\_\_\_

Customer's Drawing No.: \_\_\_\_\_

Descriptions

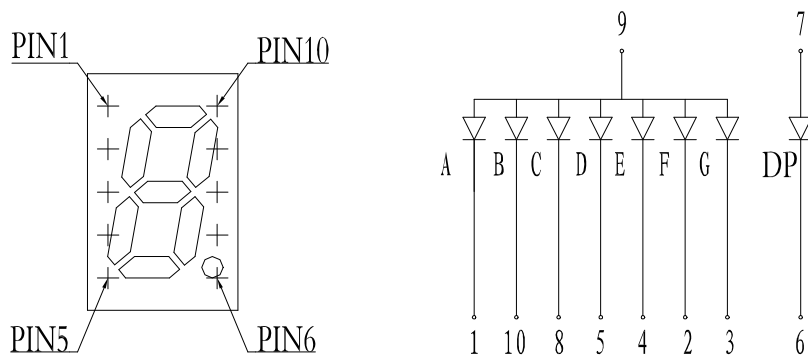
1. Emitting Color: Ultra Red
2. Lens Color: White Diffused
3. Surface Black Color : Black
4. Dice Material: AlGaInP/GaAs

Outline drawing



Tolerance is  $\pm 0.25$ mm unless otherwise noted, Unit=mm  
Pin bending  $\leq$  length\*1%

Internal Circuit Diagram (C.A.)



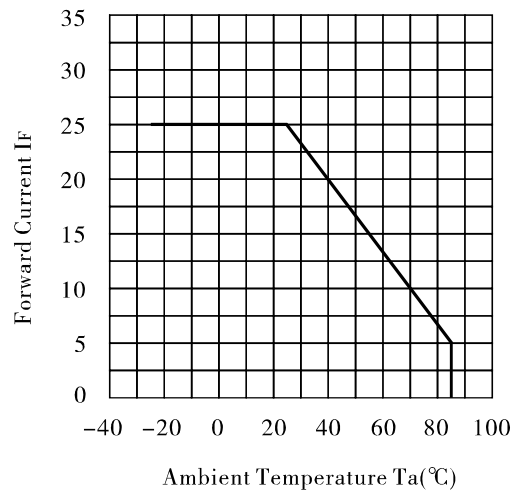
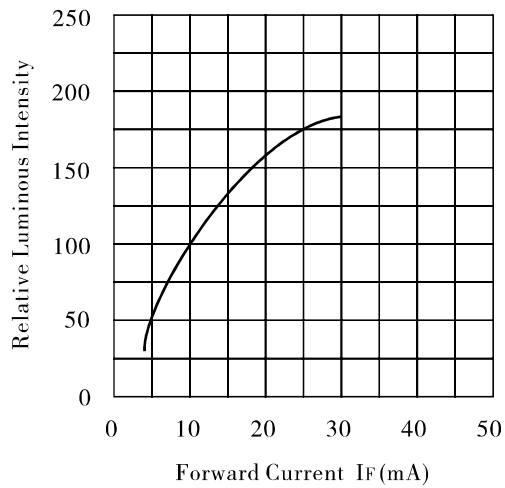
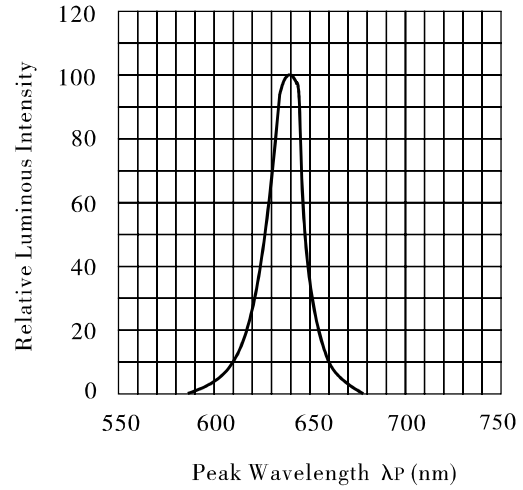
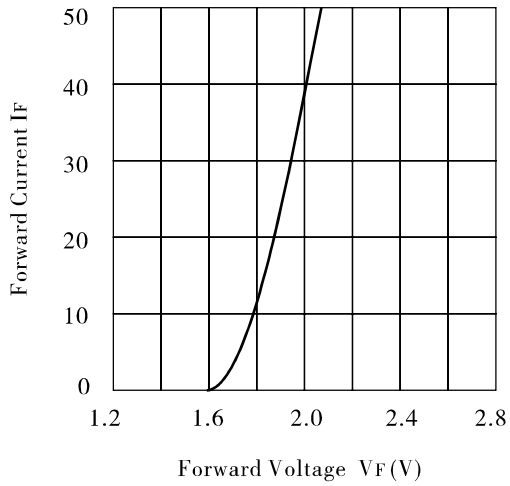
Electrical optical characteristics ( Ta=25°C )

Parameter	Symbol	Ultra Red			Unit	Test Condition
		Min	Typ	Max		
Forward Voltage	V <sub>F</sub>	---	2.20	2.60	V	IF=20mA
Luminous Intensity	I <sub>v</sub>	3.6	7.0	---	mcd	IF=10mA
Peak Wavelength	λ <sub>p</sub>	---	645	---	nm	IF=20mA
Dominant Wavelength	λ <sub>d</sub>	---	635	---	nm	IF=20mA
Spectral Line half-width	Δλ	---	20	---	nm	IF=20mA
Reverse Leakage Current	I <sub>R</sub>	---	---	50	μA	VR=5V

Absolute Maximum Parameters(Ta=25°C)

Parameter	Symbol	Condition	Rating	Unit
Power Dissipation	P <sub>D</sub>	---	80	mW
Reverse Voltage	V <sub>R</sub>	---	5	V
Forward Average Current	I <sub>F</sub>	---	30	mA
Temperature Coefficient	I/C	---	0.33	mA/°C
Pulse Current	I <sub>FP</sub>	Duty=1/10,1kHz	100	mA
Operating Temperature Range	T <sub>opr</sub>	---	-25 ~ +85	°C
Storage Temperature Range	T <sub>stg</sub>	---	-30 ~ +100	°C
Soldering Condition	T <sub>sd</sub>	---	260°C/5sec	°C

Typical Electro-Optical characteristic curves ( Ta=25°C )



Reliability test conditions

Test Item	Test Condition	Result	Judgment criteria
Consecutive operating life test	IF=20mA, T=25°C, t=168h	0/12	Forward Voltage $V_F(V) = \text{Upper Limit} \times 1.2$ Reverse Leakage Current $I_R(\mu A) = \text{Upper Limit} \times 2.0$ Luminous Intensity $I_v$ (mcd) = Lower Limit $\times 0.7$
High temperature storage life test	T=100°C, t=168h	0/12	
Low temperature storage life test	T=-25°C, t=168h	0/12	
high Temperature humidity storage life test	T=85 ± 2°C, RH=85% ± 3, t=168h	0/12	
Temperature cycle test	-25°C~25°C~100°C, 30min 5min 30min 10cycles	0/12	
Thermal shock test	100°C 0°C 5min 5min 20 cycles	0/12	
Soldering heat test	T=260 ± 5°C, t=10s ± 1s	0/12	
Solderability test	T=230 ± 5°C, t=5s ± 0.5s	0/12	Steeped Part ≥ 95%
Fall test	h=100cm, Free fall, 3times	0/12	Intact
Terminal strength test	W=9.8N, t=30 ± 5s	0/12	
Lead Bending test	W=4.9N, 2times	0/12	