LED 2.2X1.4*1.3mm. Blue

(LED 2.2X1.4*1.3mm. Blue

Part No(部件型号）: **YL-2214F(120)-455nM(20mW)**

PRODUCT DESCRIPTION：（产品描述：）

■ Features: 特点：

- High Luminous Flux(高光通量)
- High reliability （高可靠性）
- High output power at （高输出功率）

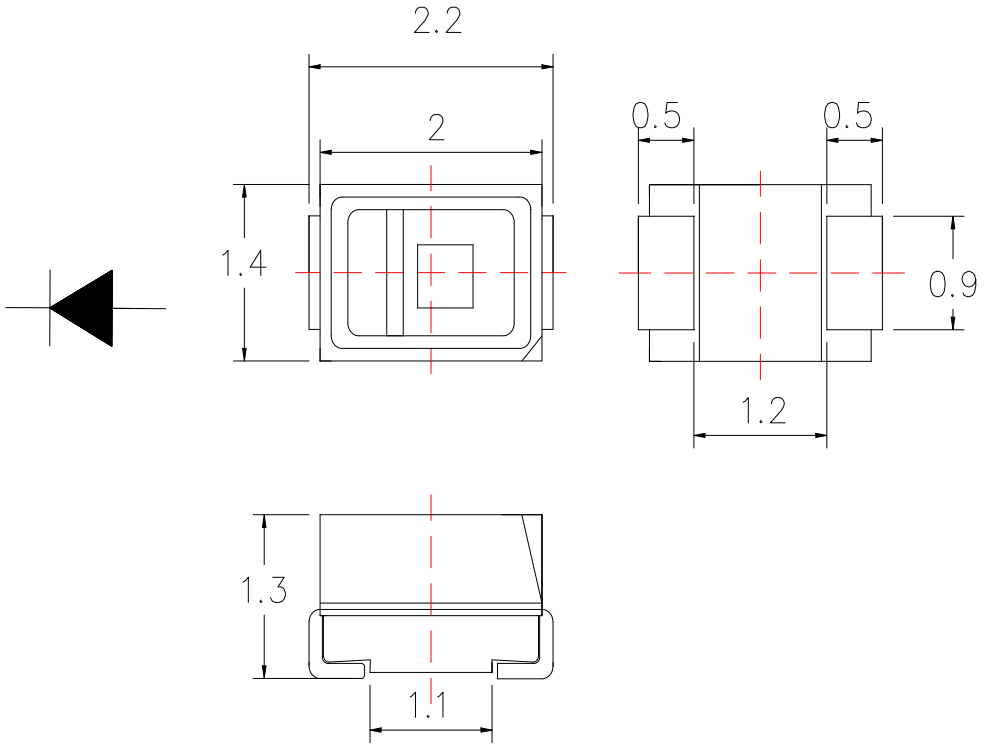
■ Descriptions: 说明：

The series is specially designed for application requiring higher brightness. （該系列產品是專門設計於需要更高亮度的應用 ）

■ Applications: 应用范围：

- Indoor Lighting （室内照明）
- Automotive （汽车应用）
- Architectural Lighting （建筑照明）
- Industrial Lighting（工业照明）
- Portable Torch （便携式手电筒）
- Home Appliance （家用电器）

■ Package Dimension:



PART NO(產品型號)	Chip Material （芯片材料 ）	LED Emitted Color （LED 的发光颜色）	LensColor （镜片颜色）
YL-2214F(120)-455nM(20mW)	InGaN SiliconSubstrate	Blue（蓝光）	Water Clear （无色透明）

Notes:

1. All dimensions are in millimeters (所有尺寸以毫米為單位)
2. Tolerance is ±0.25mm unless otherwise noted..(未標注公差為：±0.25.，另有標注除外).
3. Specifications are subject to change without notice(規格若有變動，恕不另行通知).

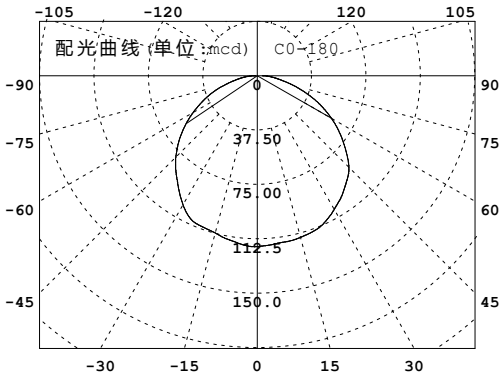
■Absolute Maximum Ratings(Ta=25℃)（绝对最大额定值在 Ta=25℃）

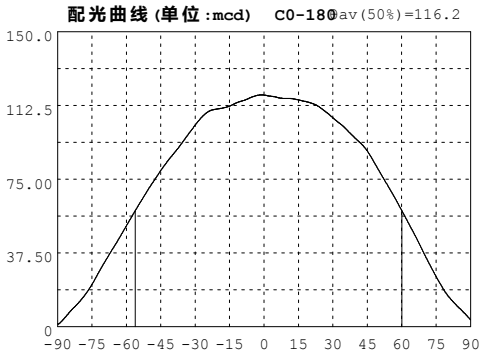
Parameter 参数	Symbol 符号	Rating 额定值	Unit 单位
Forward Current 正向电流	I_F	100	mA
Operating Temperature 工作温度	Topr	-40 to +85	℃
Storage Temperature 储存温度	Tstg	-40 to +85	℃
LED Junction Temperature LED 结温	T_j	125	℃
Soldering Temperature 焊接温度	Tsol	260 ±5 for 5sec	℃
Power Dissipation 消耗功率	Pd	300	mW
Peak Forward Current (Duty 1/10@1KHz) 峰值正向电流	I_F(Peak)	150	mA
Reverse Voltage 反向电压	V_R	5	V

■Electronic Optical Characteristics :（电子光学特性）

Parameter 参数	Symbol 符号	Min. 最小值	Typ 中间值	Max. 最大值	Unit 单位	Condition 测试条件
Luminous Flux 光通量	Øe	10	20	／	mW	I_F=20mA
Luminous Intensity 发光强度	I_V	100	120		mcd	I_F=20mA
Viewing Angle 视角	2θ1/2	／	120	／	deg	I_F=20mA
Peak Wavelength 峰值波长	λp	445	455	465	nm	I_F=20mA
Dominant Wavelength	λd	440	450	460		
Spectrum Radiation Bandwidth 光谱辐射带宽	△λ	／	25	／	nm	I_F=20mA
Forward Voltage 正向电压	V_F	2.7	3.0	3.6	V	I_F=20mA
Reverse Current 反向漏电流	I_R			10 uA	V	V_R=5V

■ Typical electro-optical characteristics curves :(典型的光电特性曲线:)





光强分布数据:(角度°, 光强mcd) C0-180

角度	光强	角度	光强	角度	光强	角度	光强	角度	光强	角度	光强
-90.0	1.451	-59.6	52.17	-29.2	103.8	1.2	117.6	31.6	104.7	62.0	54.90
-88.4	2.541	-58.0	55.28	-27.6	106.0	2.8	117.3	33.2	103.2	63.6	51.33
-86.8	4.657	-56.4	58.53	-26.0	107.9	4.4	117.0	34.8	101.6	65.2	47.85
-85.2	6.876	-54.8	61.64	-24.4	109.3	6.0	116.6	36.4	99.80	66.8	44.27
-83.6	8.903	-53.2	64.65	-22.8	110.1	7.6	116.2	38.0	97.92	68.4	40.50
-82.0	10.82	-51.6	67.71	-21.2	110.6	9.2	116.1	39.6	96.08	70.0	36.64
-80.4	12.78	-50.0	70.74	-19.6	110.9	10.8	116.1	41.2	94.38	71.6	33.10
-78.8	15.03	-48.4	73.55	-18.0	111.3	12.4	115.9	42.8	92.55	73.2	29.44
-77.2	17.51	-46.8	76.24	-16.4	111.7	14.0	115.6	44.4	90.40	74.8	25.98
-75.6	20.41	-45.2	79.19	-14.8	112.3	15.6	115.2	46.0	87.64	76.4	22.70
-74.0	23.47	-43.6	81.74	-13.2	113.2	17.2	114.8	47.6	84.51	78.0	19.52
-72.4	26.93	-42.0	84.23	-11.6	114.0	18.8	114.3	49.2	81.26	79.6	16.69
-70.8	30.24	-40.4	86.63	-10.0	114.7	20.4	113.8	50.8	78.01	81.2	14.32
-69.2	33.38	-38.8	88.90	-8.4	115.3	22.0	113.1	52.4	74.85	82.8	12.32
-67.6	36.54	-37.2	91.23	-6.8	116.0	23.6	112.1	54.0	71.67	84.4	10.32
-66.0	39.54	-35.6	93.76	-5.2	116.8	25.2	110.9	55.6	68.52	86.0	8.553
-64.4	42.54	-34.0	96.30	-3.6	117.4	26.8	109.4	57.2	65.28	87.6	6.697
-62.8	45.72	-32.4	98.89	-2.0	117.9	28.4	107.9	58.8	61.80	89.2	4.613
-61.2	48.92	-30.8	101.3	-0.4	117.8	30.0	106.3	60.4	58.39		

电学参数:

工作电流If: 18.30mA **工作电压Vf:** 2.83V
反向电压Vz: 10.01V (偏置Ir=0.10μA)
反向漏电流Ir: 0.00μA (偏置Vr=5.00V)
电功率P: 51.78mW

光学参数(CIE A):

等效光通量: Φeff = 359.2mlm **光效:** Eff=6.94lm/W
平均光强扩散角: θ(25%): 144.2° θ(50%): 116.2° θ(75%): 84.6° θ(50%): 116.2°
最大光强Imax = 117.9 mcd (C=0.0°,G=-0.8°)
C0-180平面 Imax = 117.9 mcd (G=-0.8°) Io = 117.9 mcd

■ Characteristic Curves:

Fig.1 The I-V characteristics (0-70mA)

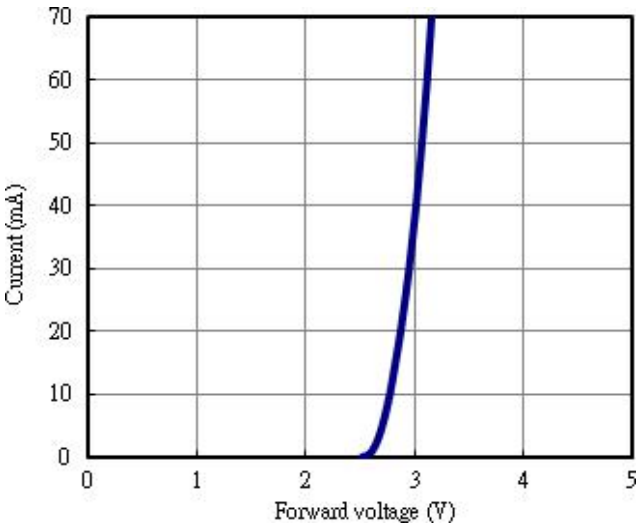


Fig.2 The EL spectrum

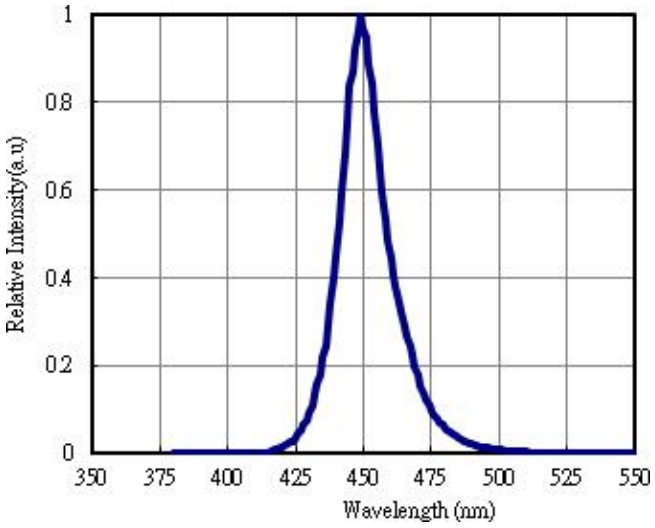


Fig.3 Relative intensity vs forward current

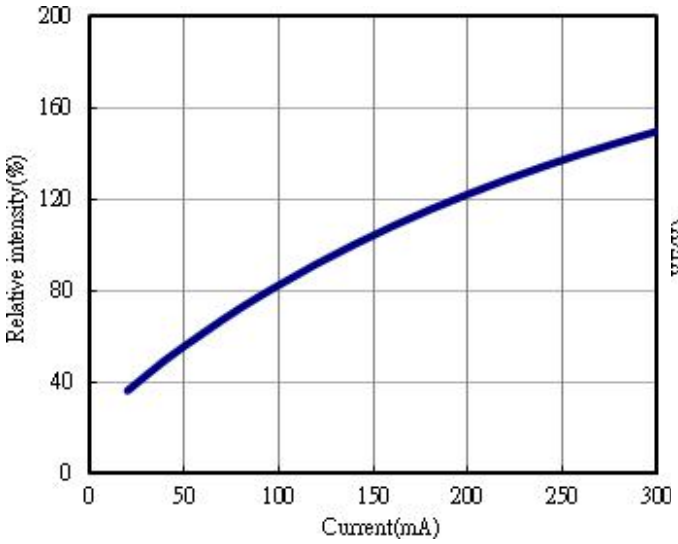


Fig.4 The V-I characteristics (0-300mA)

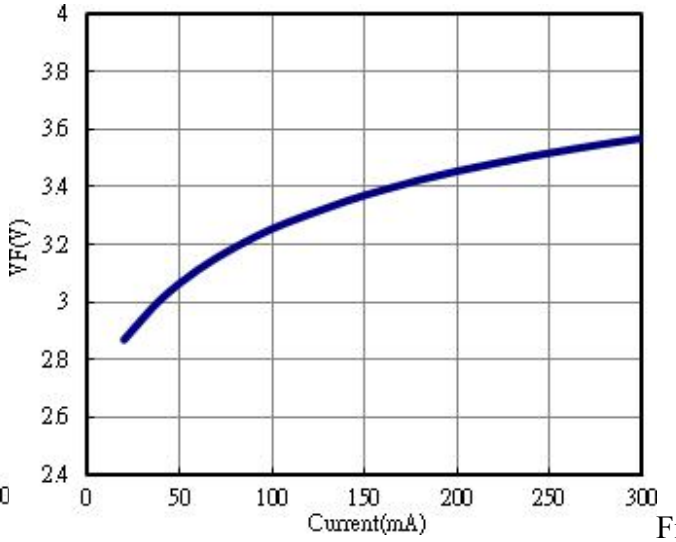


Fig.5 The WLP shift vs forward current

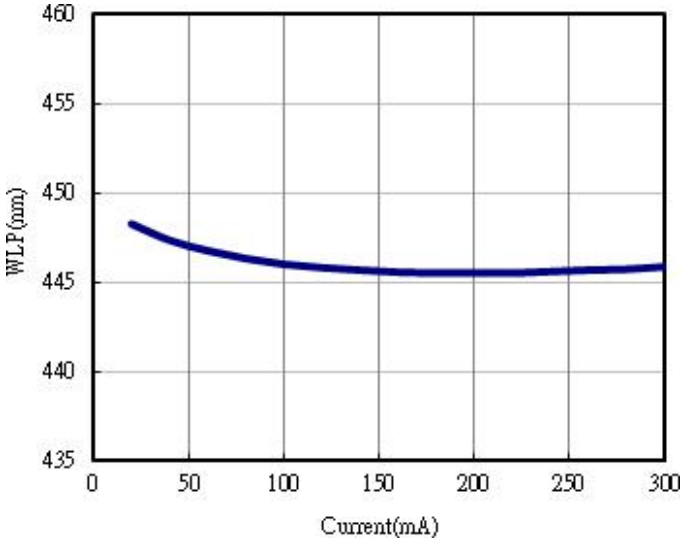


Fig.6 The WLD shift vs forward current

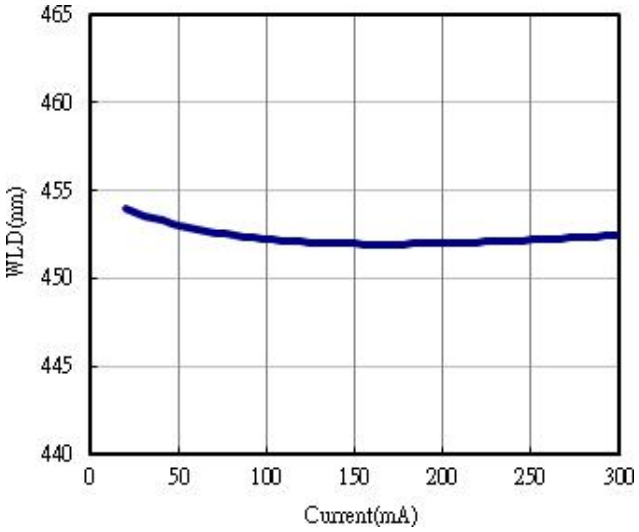


Fig.7 Derating curve based on Tj(max)=125℃

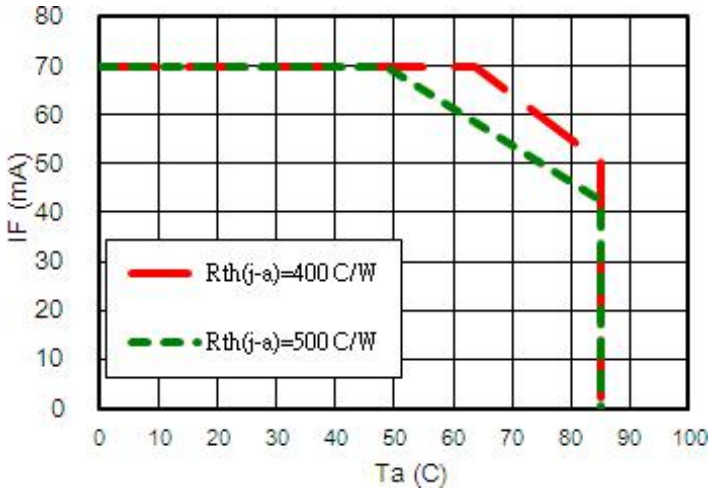


Fig.8 The forward voltage vs Ta(℃)

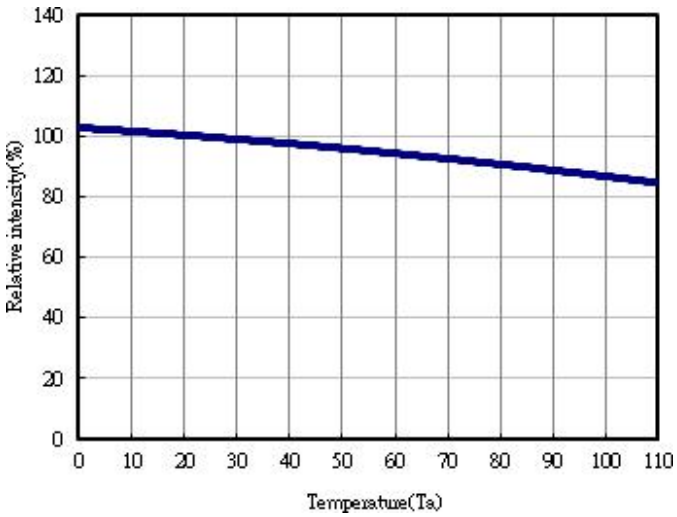


Fig.9 The WLD shift vs Ta(℃)

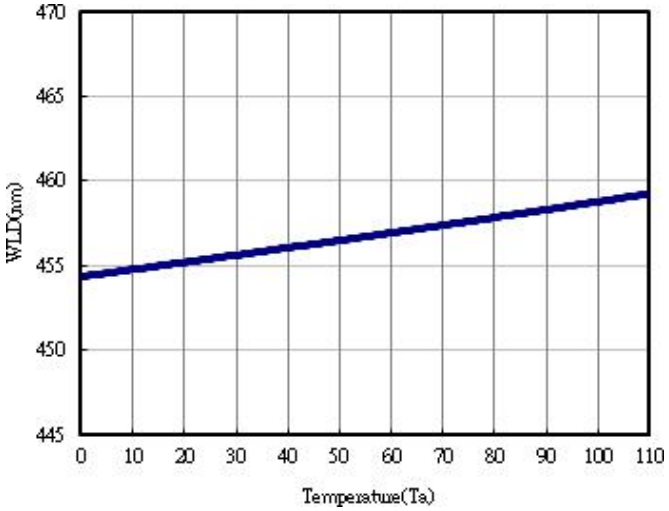


Fig.10 Relative intensity vs Ta(℃)

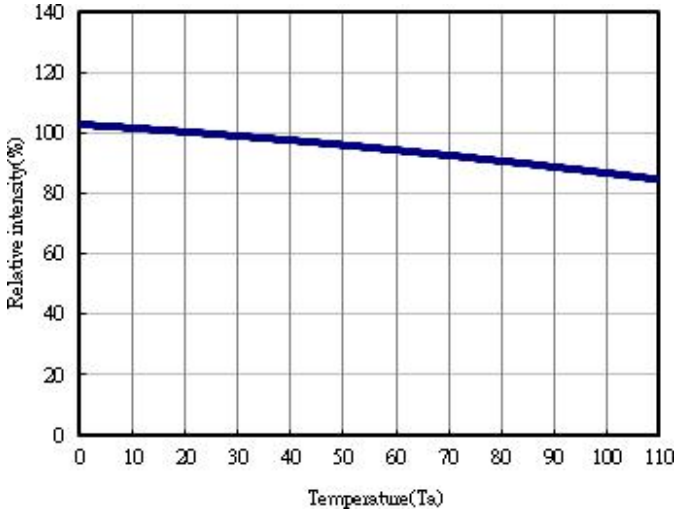
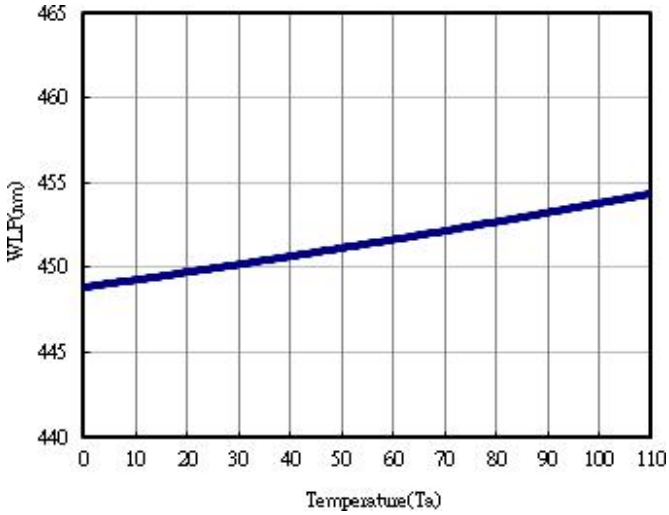


Fig.11The WLP shift vs Ta(℃)



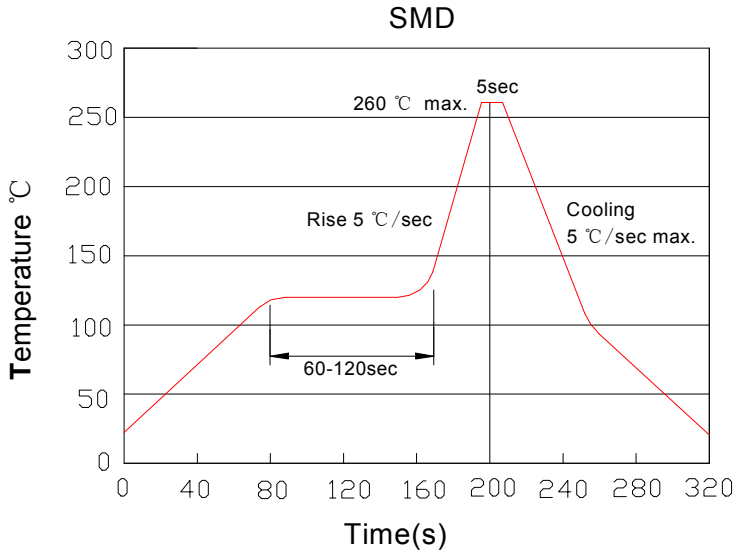
■Reliability Test Items And Conditions:（可靠性测试项目及条件：）

No. ion	Items 项目	Test Condition 测试条件	Test Hours/Cycles 测试时间/周期	Sample Size 样本数	Ac/Re
1	Reflow Soldering 回流焊	Temp. : 260℃±5℃ Min. 5sec.	5sec.	22 PCS.	0/1
2	Temperature Cycle 温度循环	H : +85℃ 15min ∫ 5 min L : -40℃ 15min	100Cycles	22 PCS.	0/1
3	Thermal Shock 热冲击	H : +85℃ 5min ∫ 10 sec L : -10℃ 5min	100 Cycles	22 PCS.	0/1
4	High Temperature Storage 高温存储	Temp. : 125℃	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage 低温贮藏	Temp. : -40℃	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life 直流工作寿命	IF =20 mA / 125℃	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity 高温/高湿度	85℃/ 85%RH	1000 Hrs.	22 PCS.	0/1

■ Precautions For Use　使用注意事项

Soldering Condition：焊接条件：

Pb-free solder temperature profile无铅焊料的温度曲线



1. Reflow soldering should not be done more than two times.回流焊不可做两次以上。
2. When soldering, do not put stress on the LEDs during heating.
   焊接时，在加热过程中勿对 LED 施加压力。
3. After soldering, do not warp the circuit board.焊接后，勿弯曲电路板。

备注：

!请注意洗板水的使用，劣质的洗板水有可能会造成发光区及外观的伤害。