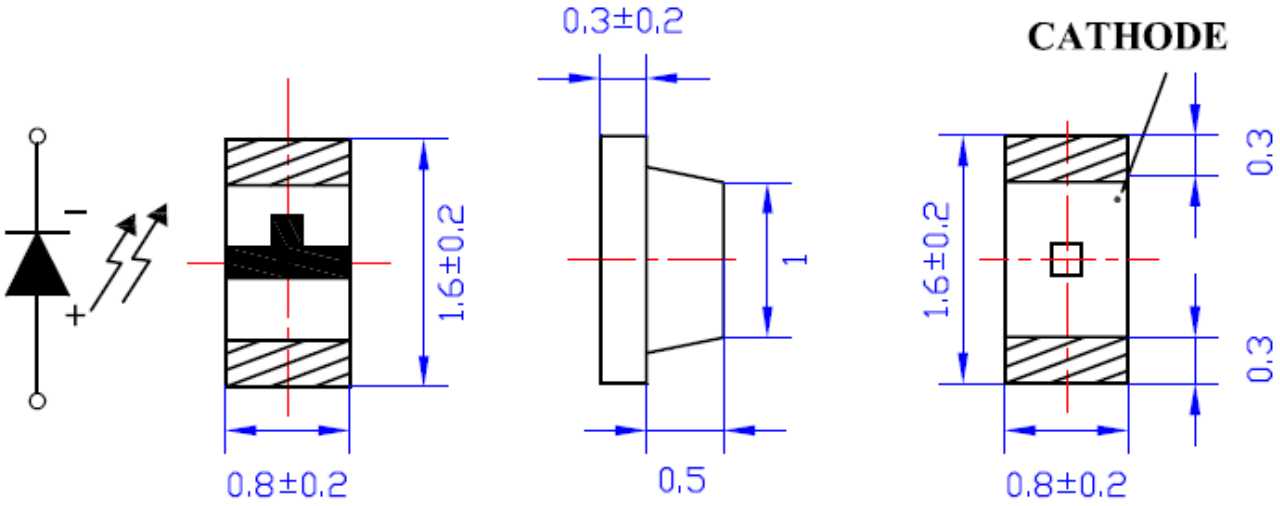
0603 Package Chip LEDs

MODEL NO : EC02 – 0603QWC/F

Features

- Package in 8mm tape on 7″ diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Mono-color type.
- Pb-free.
- The product itself will remain within RoHS complaint version.

Package Dimensions



Part No.	Chip		Lens Color
	Material	Emitted color	
EC02-0603QWC/F	InGaN	White	Yellow Diff

Note:

1. All dimensions are in millimeters.
2. Tolerance is ±0.1mm unless otherwise noted.

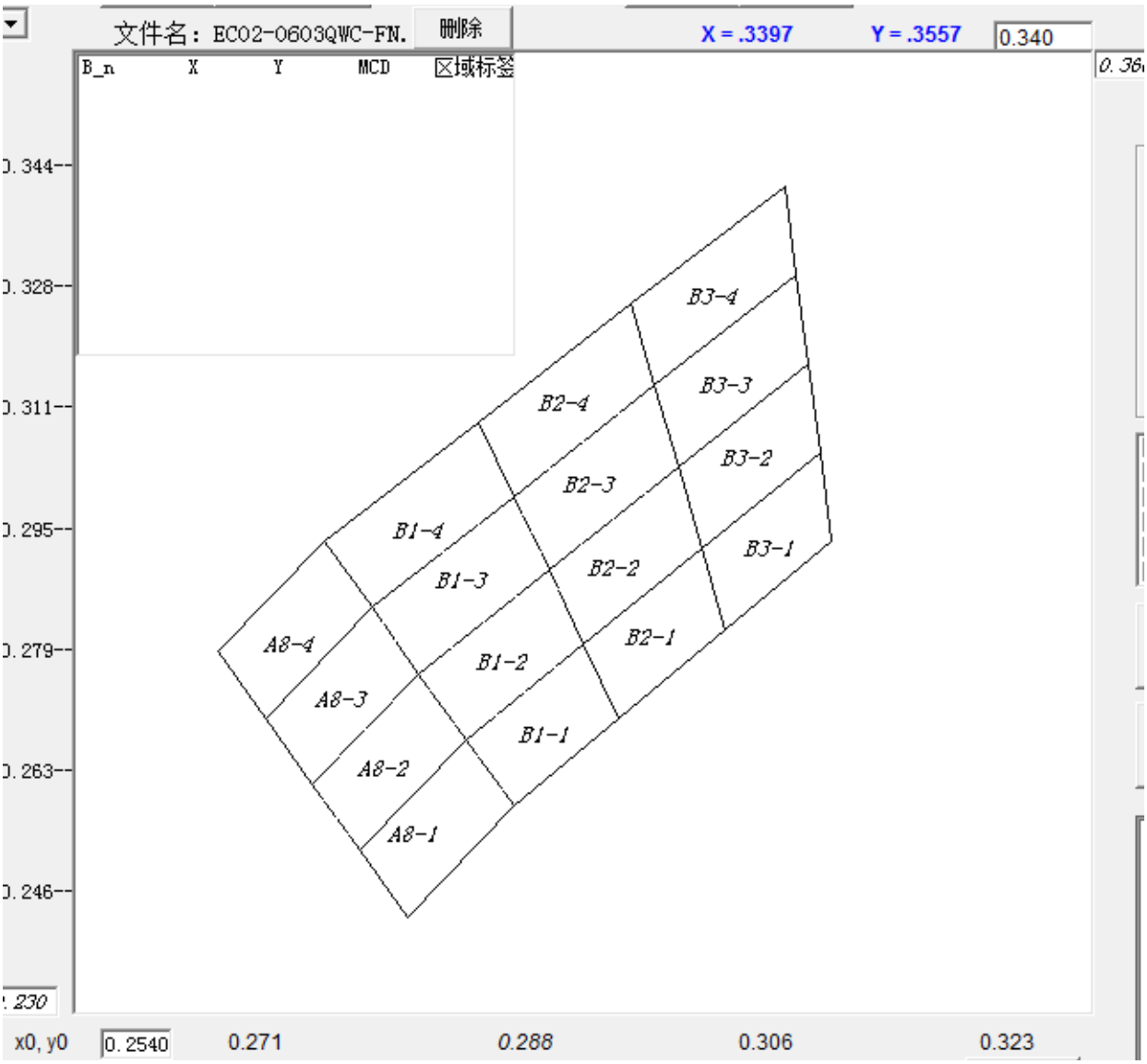
Absolute maximum Ratings (Ta = 25℃)

Parameter	Symbol	Max	Unit
Forward current	I_F	30	mA
Reverse voltage	V_R	5	V
Power dissipation	Pd	120	mW
Peak forward current	IFP	100	mA
Operating temperature	Topr	-30℃ ~ 85℃	
Storage temperature	Tstg	-40℃ ~ 90℃	
Soldering temperature	Tsol	260℃ for 5 Seconds	

Electro / Optical Characteristics (Ta = 25℃)

Parameter	Symbol	Condition	Min	Tpy	Max	Unit
Luminous Intensity	Iv	IF = 20mA	400	600	----	Mcd
Forward Voltage	V_F		----	3.2	3.6	V
Reverse Current	I_R	V_R = 5V	----	----	10	μA
View Angle	2θ 1/2	IF = 20mA	----	120	----	deg
Chromaticity Coordinates	X		----	0.29	----	
	Y		----	0.28	----	

CIE Chromaticity Diagram



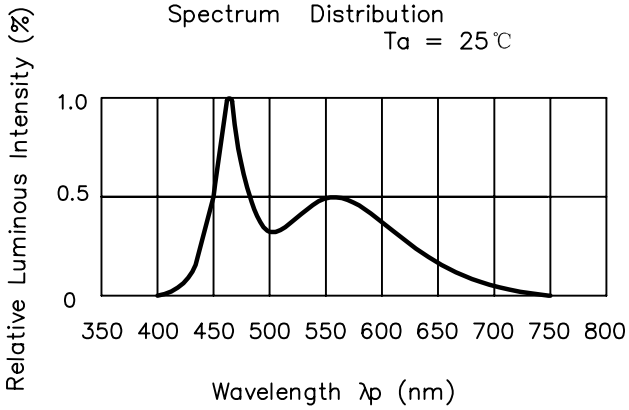
Classifying standard

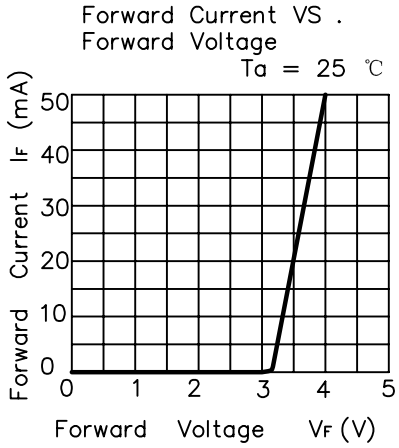
		Bottom	Left	Top	Right			Bottom	Left	Top	Right
A8-4	X	0.270	0.266	0.275	0.279	A8-3	X	0.274	0.270	0.279	0.283
	Y	0.270	0.279	0.294	0.285		Y	0.261	0.270	0.285	0.276
A8-2	X	0.278	0.274	0.283	0.287	A8-1	X	0.282	0.278	0.287	0.291
	Y	0.252	0.261	0.276	0.267		Y	0.243	0.252	0.267	0.258
B1-4	X	0.279	0.275	0.288	0.291	B1-3	X	0.283	0.279	0.291	0.294
	Y	0.285	0.294	0.310	0.300		Y	0.276	0.285	0.300	0.290
B1-2	X	0.287	0.283	0.294	0.297	B1-1	X	0.291	0.287	0.297	0.300
	Y	0.267	0.276	0.290	0.280		Y	0.258	0.267	0.280	0.270
B2-4	X	0.291	0.288	0.301	0.303	B2-3	X	0.294	0.291	0.303	0.305
	Y	0.300	0.310	0.326	0.315		Y	0.290	0.300	0.315	0.304
B2-2	X	0.297	0.294	0.305	0.307	B2-1	X	0.300	0.297	0.307	0.309
	Y	0.280	0.290	0.304	0.293		Y	0.270	0.280	0.293	0.282
B3-4	X	0.303	0.301	0.314	0.315	B3-3	X	0.305	0.303	0.315	0.316
	Y	0.315	0.326	0.342	0.330		Y	0.304	0.315	0.330	0.318
B3-2	X	0.307	0.305	0.316	0.317	B3-1	X	0.309	0.307	0.317	0.318
	Y	0.293	0.304	0.318	0.306		Y	0.282	0.293	0.306	0.294

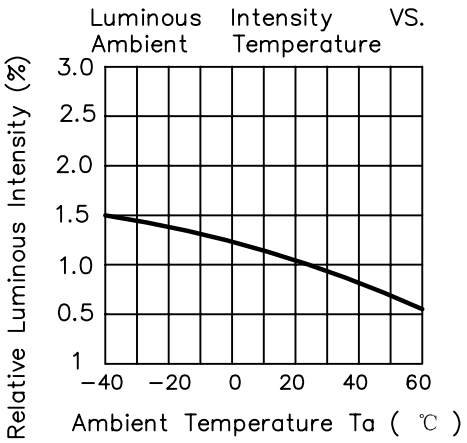
NOTE:

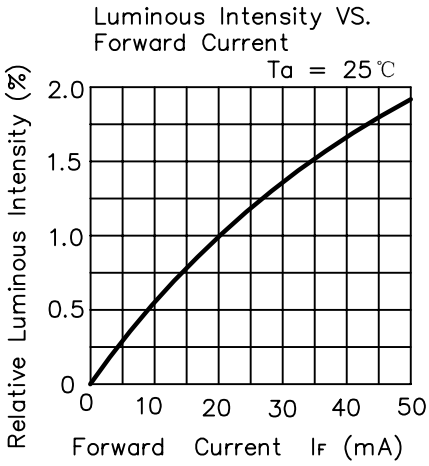
1. CIE 1931 Chromaticity Diagram .

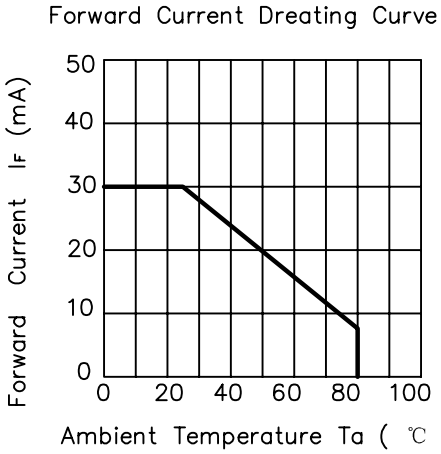
Typical Electro-Optical Dharacteristics Curves

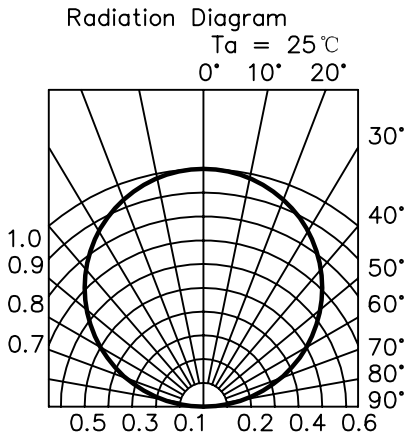










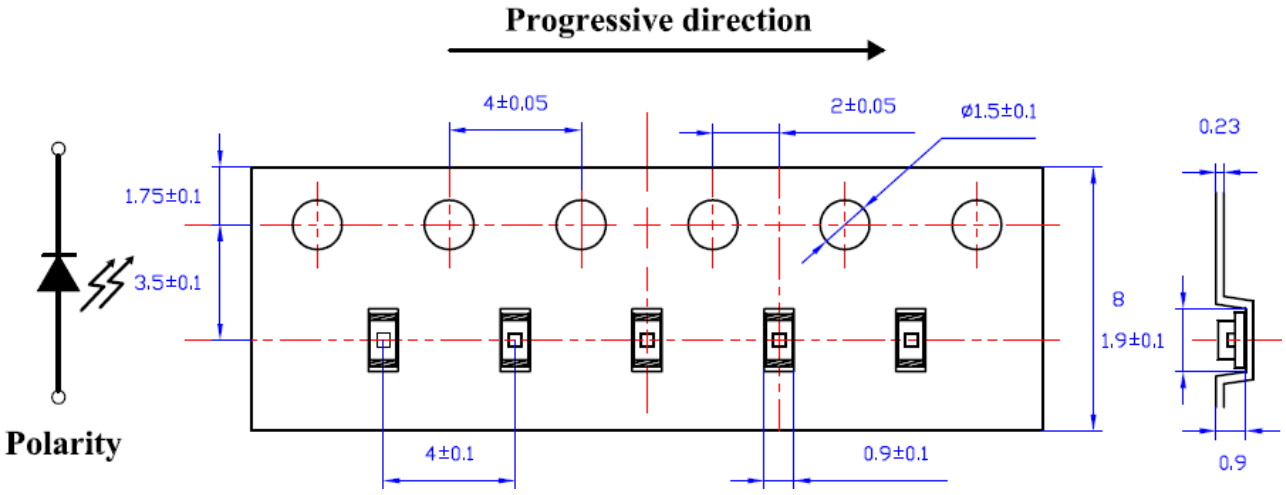


Reliability Test Items And Conditions

The reliability of products shall be satisfied with items listed below.
Confidence level 90%
LTPD 10%

NO.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp.:260℃±5℃ Min. 5 sec	6 Min	20 PCS	0/1
2	Temperature Cycle	H:+85℃~±25℃ 60min 20min L : -35℃~±25℃ 60min 20min	5Cycles	20 PCS	0/1
3	Thermal Shock	H : +85℃±5℃ 20min L : -35℃±5℃ 20min	10Cycles	20 PCS	0/1
4	High Temperature Storage	Temp. : +85℃±5℃	1000 Hrs	20 PCS	0/1
5	Low Temperature Storage	Temp. : -35℃±5℃	1000 Hrs	20 PCS	0/1
6	DC Operating Life	IF = 20 mA	1000 Hrs	20 PCS	0/1
7	High Temperature / High Humidity	+65℃±5℃ / 90%-95%RH	240 Hrs	20 PCS	0/1

Carrier Tape Ddimensions : Loaded quantity 3000 PCS per reel



Note: The tolerances unless mentioned are ±0.1 ,Unit = mn.

Explanation ：

1. **Over-current-proof**
   Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change .

2. Storage:

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package , the LEDs should be kept at 30℃ or less and 90%RH or less.

2.3 After opening the package , the LEDs should be kept at 30℃ or less and 60%RH or less.

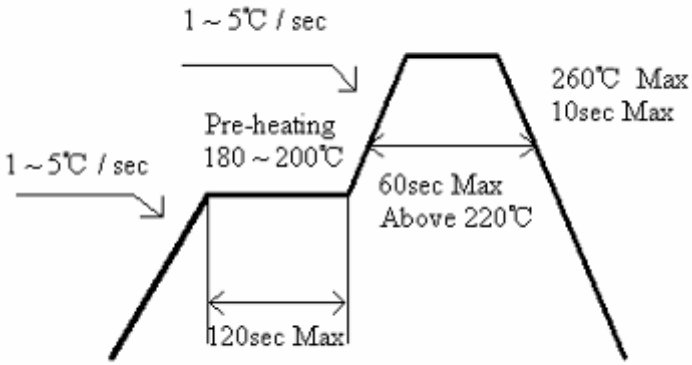
2.4 The LEDs should be used within 168 hours after opening the package.

3 .Soldering Iron

Each terminal is to go to the tip of soldering temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals , and do soldering of each terminal , Be careful because the damage of the product is often started at the time of the hand solder.

4. Soldering Condition

4.1 Pb-free solder temperature profile.



4.2 Reflow soldering should not be done more than two times.

4.3 When soldering , do not prt stress on the LEDs during heating .

4.4 After soldering , do not warp the circuit board .

5. Repairing

Repair should not be done after the LEDs have been soldered . When repairing is unavoidable , a double-head soldering iron should be used (as below figure) . It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing .