

QT-Brightek Chip LED Series

SMD 0805 LED

Part No.: QBLP631 Series

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Introduction

Feature:

- Water clear lens (except white color)
- Yellow lens for White
- Package in tape and reel
- Bright 0805 LED package
- InGaN technology for IB/IG/IW
- AllnGaP technology for R/S/AG/Y/O

Description:

These ultra bright 0805 LEDs have a height profile of 0.8mm. Combination of high brightness output and small footprint, these LEDs are ideal for keypad backlighting and status indication.

Application:

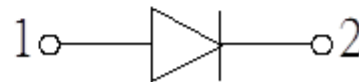
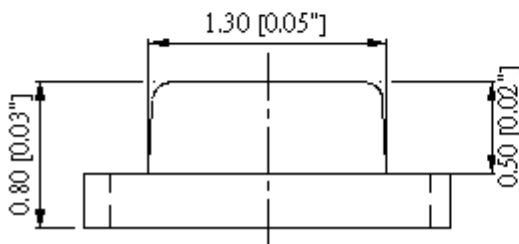
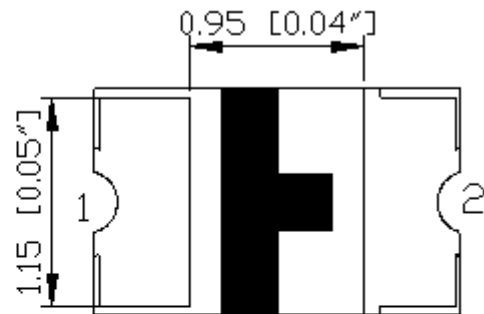
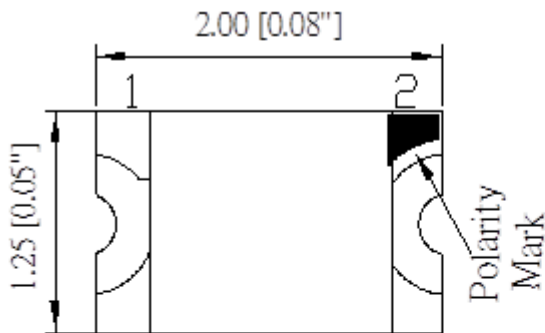
- Status indication
- Back lighting application

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant



Dimension:



Units: mm / tolerance = +/-0.1mm

Electrical / Optical Characteristic (T=25 °C)

Product	Color	I _F (mA)	V _F (V)		λ _D (nm)			I _V (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP631-IW	White	20	3.1	3.7	-	X = 0.28 Y = 0.29	-	160	270
QBLP631-IB	Blue	20	3.1	3.7	465	470	475	63	125
QBLP631-IG	True Green	20	3.1	3.7	520	525	530	250	400
QBLP631-R	Red	20	2.0	2.5	615	625	630	63	100
QBLP631-S	Deep Red	20	2.0	2.5	630	640	650	32	50
QBLP631-AG	Yellow Green	20	2.0	2.5	565	570	576	32	50
QBLP631-Y	Yellow	20	2.0	2.5	585	590	595	80	150
QBLP631-O	Orange	20	2.0	2.5	600	605	610	100	160

Absolute Maximum Rating

Material	P _d (mW)	I _F (mA)	I _{FP} (mA)*	V _R (V)	T _{OP} (°C)	T _{ST} (°C)	T _{SOL} (°C)**
AllnGaP	75	30	125	5	-40 ~ +80	-40 ~ +85	260
InGaN	111	30	125	5	-40 ~ +80	-40 ~ +85	260

*Duty 1/8 @ 1KHz

**IR Reflow for no more than 10 sec @ 260 °C

Forward Voltage V_F for AllnGaP @ I_F=20mA

Bin	Min.	Max.	Unit
□	1.7	2.5	V

Forward Voltage V_F for InGaN @ I_F=20mA

Bin	Min.	Max.	Unit
f	2.8	3.1	V
g	3.1	3.4	
h	3.4	3.7	

Luminous Intensity I_V @ $I_F=20mA$

Bin	Min.	Max.	Unit
E	32	40	mcd
F	40	50	
G	50	63	
H	63	80	
I	80	100	
J	100	125	
K	125	160	
L	160	200	
M	200	250	
N	250	320	
O	320	400	
P	400	500	
Q	500	630	
R	630	800	

Dominant Wavelength λ_D for Blue @ $I_F=20mA$

Bin	Min.	Max.	Unit
G	465	467.5	nm
H	467.5	470	
I	470	472.5	
J	472.5	475	

Dominant Wavelength λ_D for True Green @ $I_F=20mA$

Bin	Min.	Max.	Unit
U	520	522.5	nm
V	522.5	525	
W	525	527.5	
X	527.5	530	

Dominant Wavelength λ_D for Red @ $I_F=20mA$

Bin	Min.	Max.	Unit
s	615	620	nm
t	620	625	
u	625	630	

Dominant Wavelength λ_D for Deep Red @ $I_F=20mA$

Bin	Min.	Max.	Unit
v	630	635	nm
w	635	650	

Dominant Wavelength λ_D for Yellow Green @ $I_F=20\text{mA}$

Bin	Min.	Max.	Unit
h	565	568	nm
i	568	572	
j	572	576	

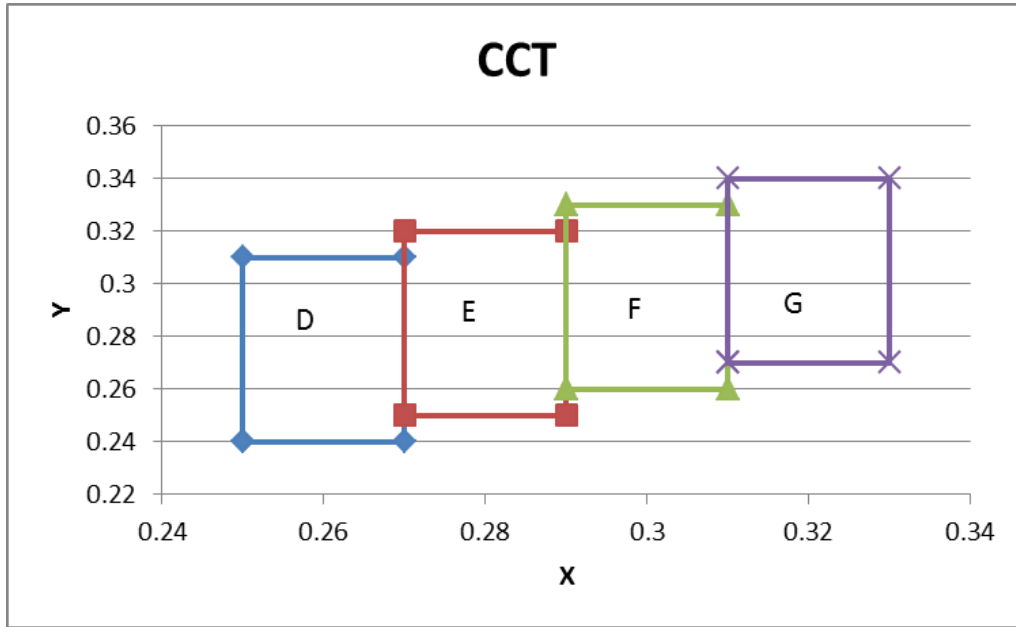
Dominant Wavelength λ_D for Yellow @ $I_F=20\text{mA}$

Bin	Min.	Max.	Unit
m	585	590	nm
n	590	595	

Dominant Wavelength λ_D for Orange @ $I_F=20\text{mA}$

Bin	Min.	Max.	Unit
p	600	605	nm
q	605	610	

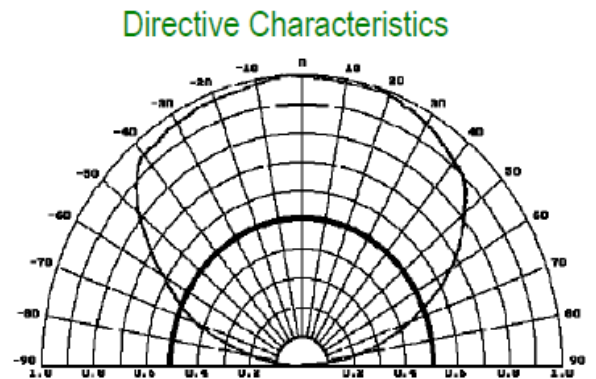
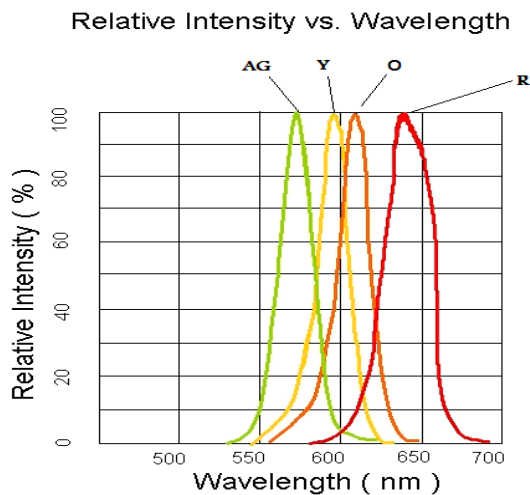
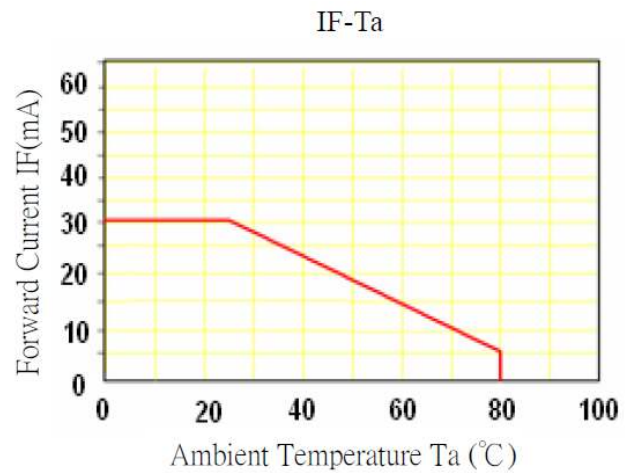
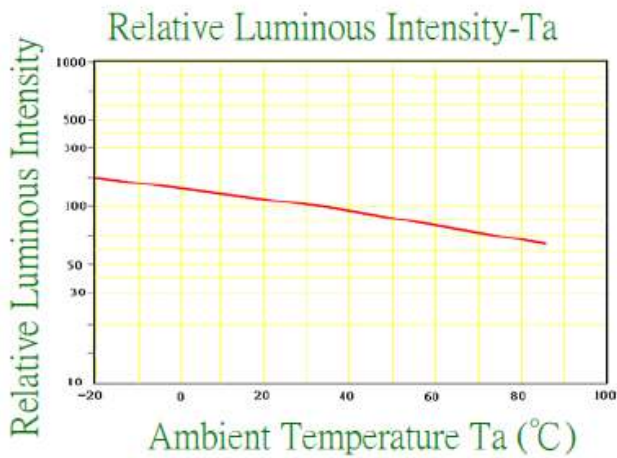
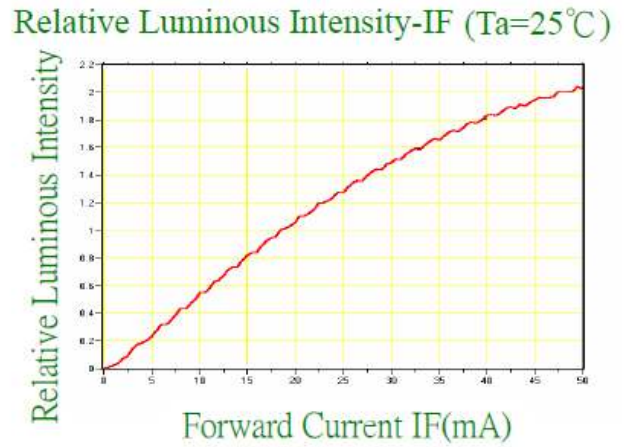
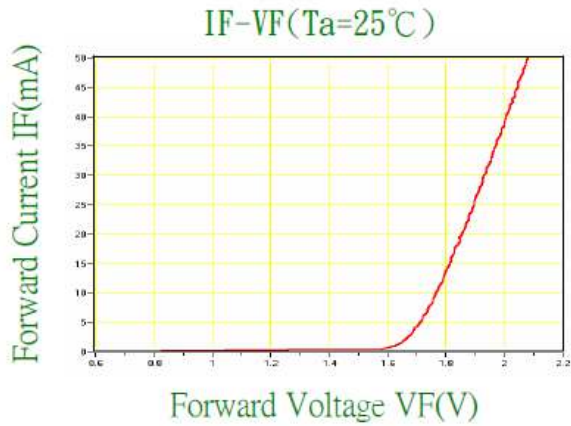
CIE Chromaticity Table



D		E		F		G	
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27
0.25	0.31	0.27	0.32	0.29	0.33	0.31	0.34
0.27	0.31	0.29	0.32	0.31	0.33	0.33	0.34
0.27	0.24	0.29	0.25	0.31	0.26	0.33	0.27
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27

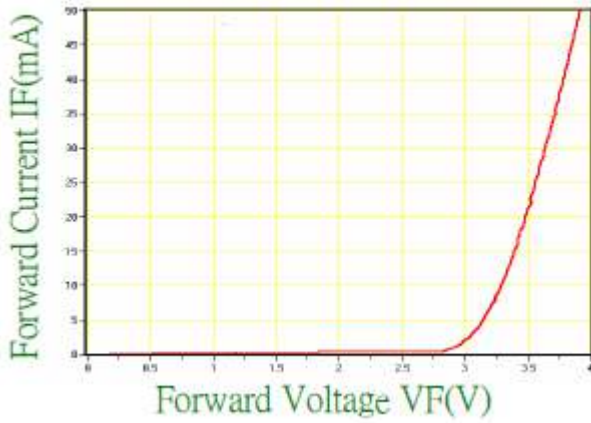
Characteristic Curves

AllnGaP Technology (R/S/AG/Y/O)

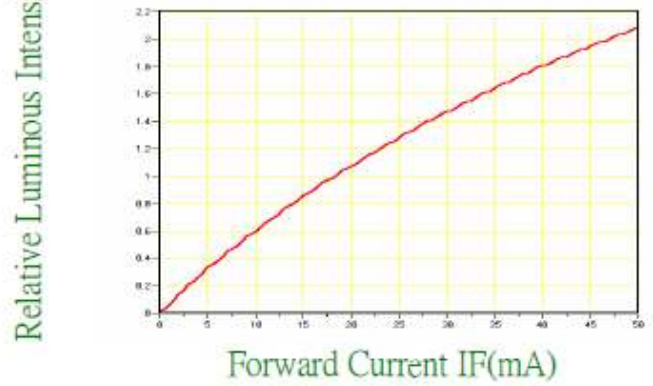


InGaN Technology (IB/IG/IW)

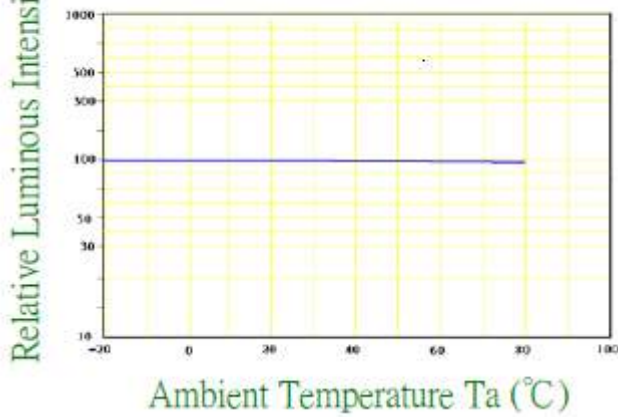
IF-VF (Ta=25°C)



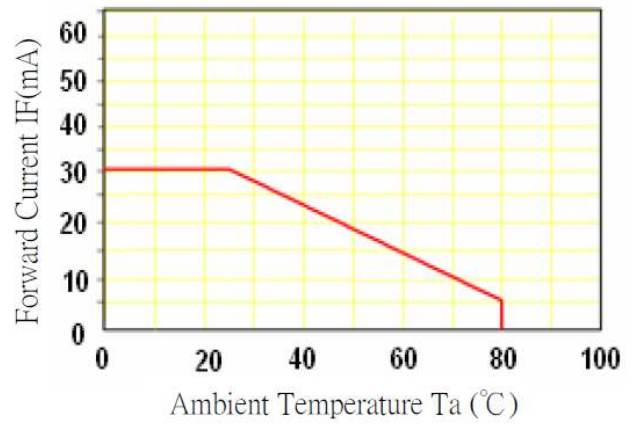
Relative Luminous Intensity-IF (Ta=25°C)



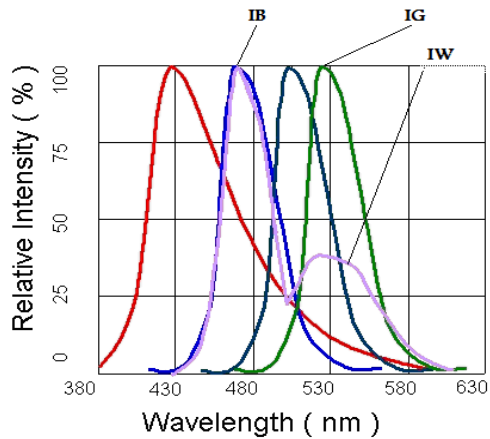
Relative Luminous Intensity-Ta



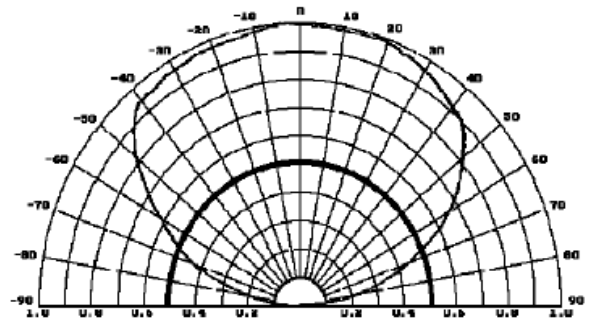
IF-Ta



Relative Intensity vs. Wavelength

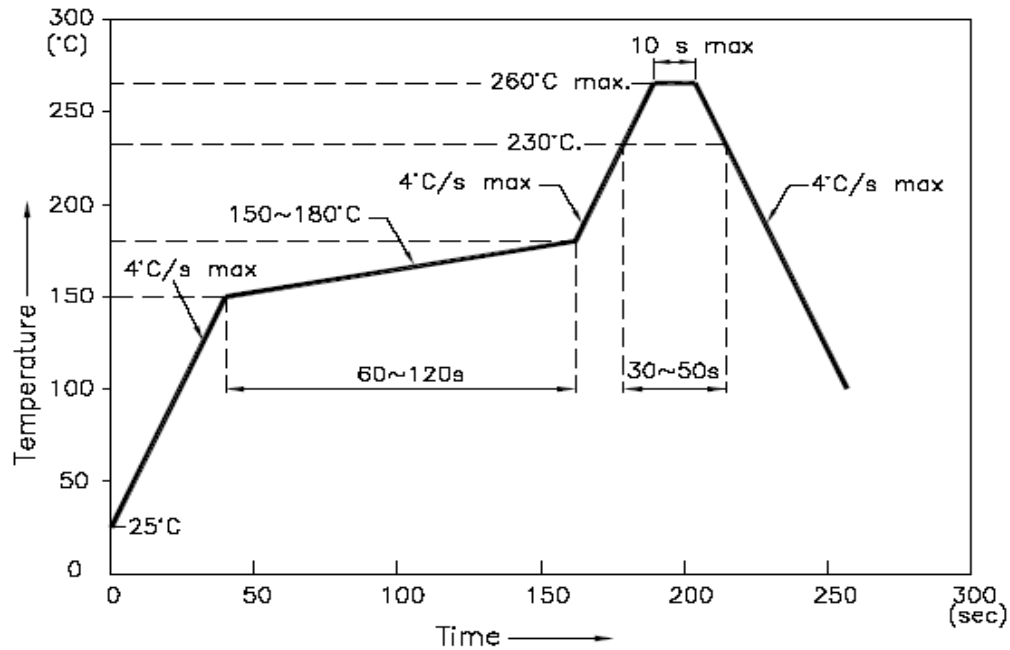


Directive Characteristics

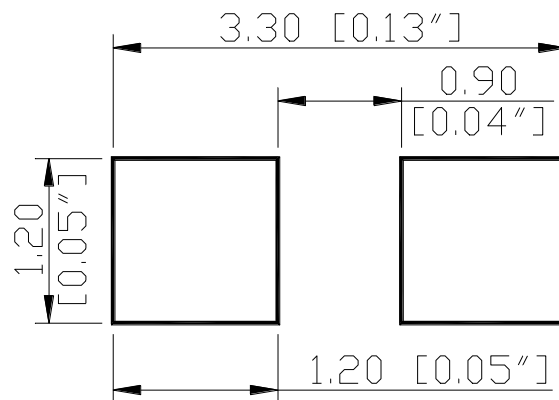


Solder Profile & Footprint

- Recommended tin solder specifications: melting temperature in the range of 178~192 °C
- The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



Recommended Pad Layout

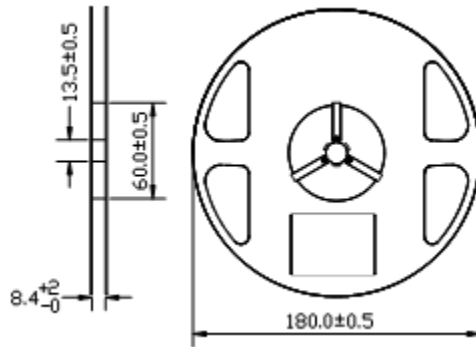


Units: mm

Tolerance: $\pm 0.1\text{mm}$

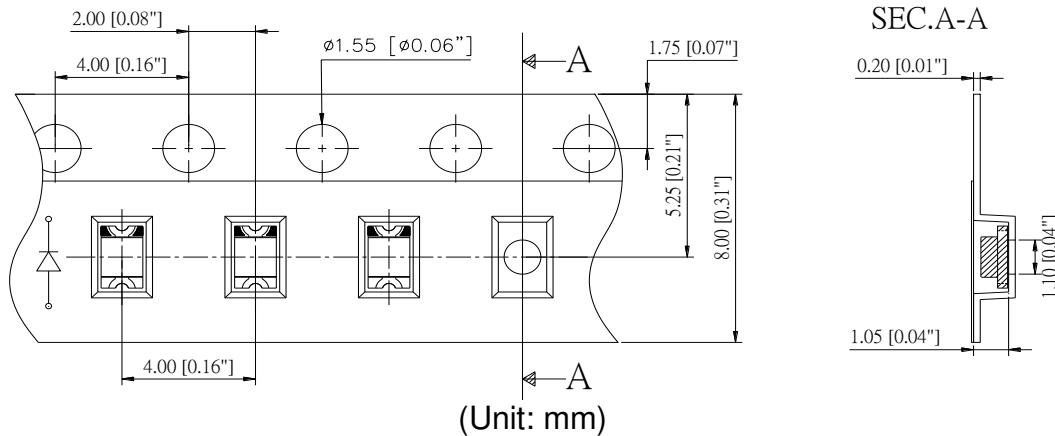
Packing

Reel Dimension:



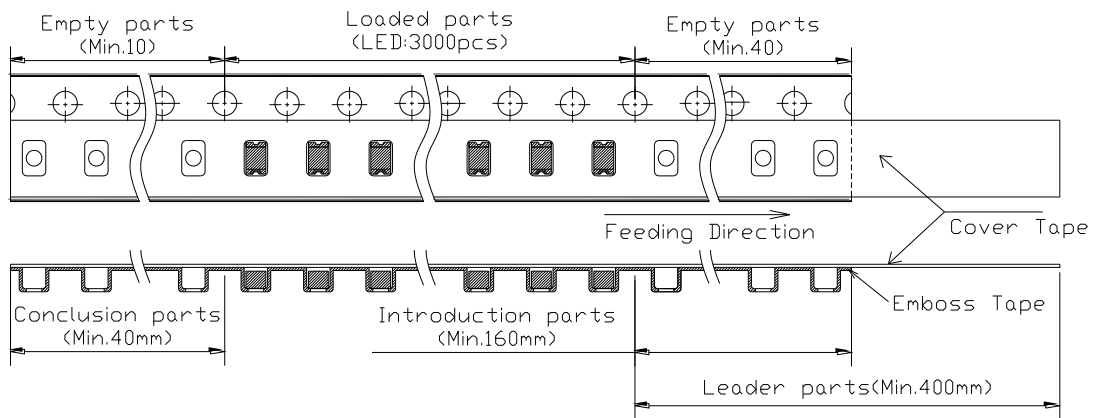
(Unit: mm)

Tape Dimension:



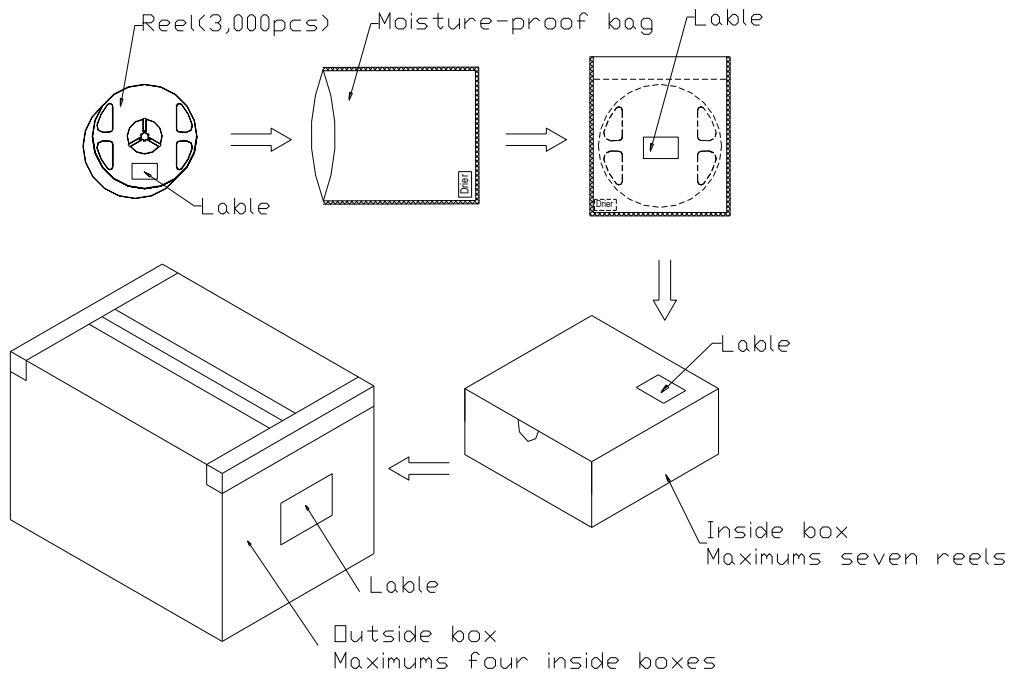
(Unit: mm)

Arrangement of Tape:



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Packaging Specifications:



Labeling



Part No: _____

Customer P/N: _____

Item: _____

Q'ty: _____

Vf: _____

Iv: _____

WI: _____

Date: _____

Made in China

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Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP631-IW	QBLP631-IW	lv=270 mcd typ. / CIE Coordinate: (X=0.28, Y=0.29) typ.	3,000 units
QBLP631-IB	QBLP631-IB	lv=125 mcd typ. / Color=465nm to 475nm	3,000 units
QBLP631-IG	QBLP631-IG	lv=400 mcd typ. / Color=520nm to 530nm	3,000 units
QBLP631-R	QBLP631-R	lv=100 mcd typ. / Color=615nm to 630nm	3,000 units
QBLP631-S	QBLP631-S	lv=50 mcd typ. / Color=630nm to 650nm	3,000 units
QBLP631-AG	QBLP631-AG	lv=50 mcd typ. / Color=565nm to 576nm	3,000 units
QBLP631-Y	QBLP631-Y	lv=150 mcd typ. / Color = 585nm to 595nm	3,000 units
QBLP631-O	QBLP631-O	lv=160 mcd typ. / Color = 600nm to 610nm	3,000 units

Revision History

Description:	Revision #	Revision Date
New Release of QBLP631 Series	V1.0	07/11/2013
Update deep red wavelength and yellow green brightness, update recommended soldering pad and packing reel dimension	V1.1	02/03/2014

Disclaimer

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.