QT-Brightek Side View LED Series

0602 Side View LED

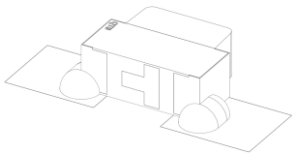
Part No.: QBLP617 Series

Table of Contents:

Introduction

Feature:

- Water clear lens
- Package in tape and reel
- Side view (right angle) 0602 LED package
- InGaN technology for IG/IB/IW
- AlInGaP technology for R/AG/Y/O
- Viewing Angle: 140° typ.



Description:

These ultra bright side view 0602 LEDs have a height profile of 0.6mm. With higher packing density and smaller footprint, these LEDs are ideal for smaller equipment and miniature application.

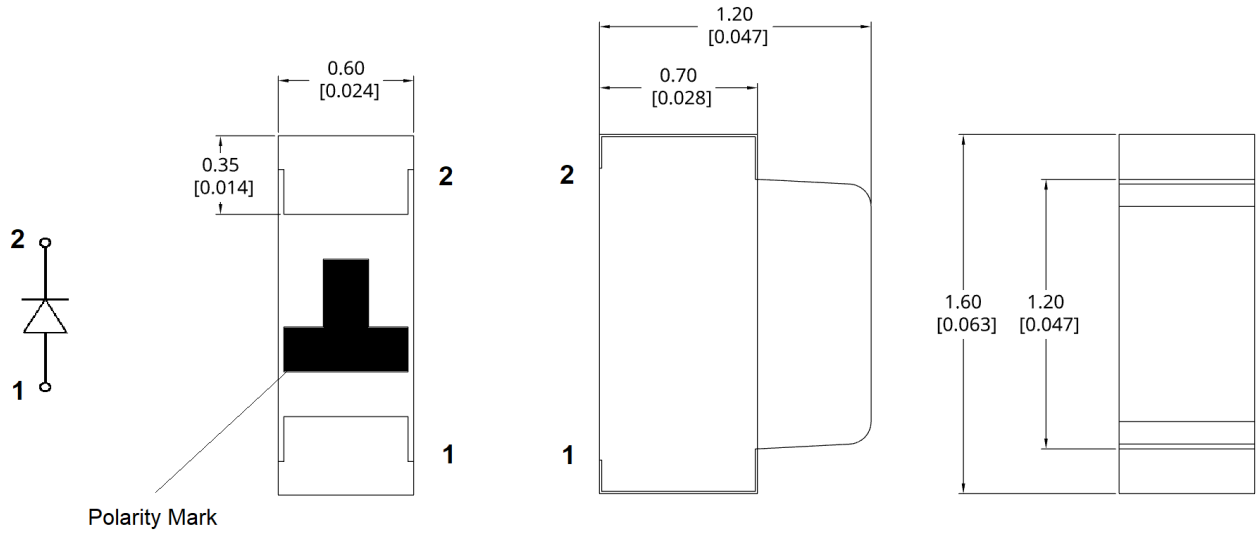
Application:

- Status indication
- Back lighting application
- General Use

Certification & Compliance:

- ISO9001
- RoHS Compliant

Dimension:



Units: mm / tolerance = +/-0.1mm

Electrical / Optical Characteristic (Ta=25 °C)

Product	Color	I_F (mA)	V_F (V)		λ_D (nm)			I_V (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP617-IB	Blue	20	3.1	3.7	465	470	475	50	63
QBLP617-IG	True Green	20	3.1	3.7	520	525	530	200	380
QBLP617-R	Red	20	2.0	2.5	615	620	630	63	100
QBLP617-AG	Yellow Green	20	2.0	2.5	565	570	576	25	35
QBLP617-Y	Yellow	20	2.0	2.5	585	590	595	80	150
QBLP617-O	Orange	20	2.0	2.5	600	605	610	80	165
QBLP617-IW	White	20	3.1	3.7	-	X = 0.28 Y = 0.29	-	160	250

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)**
InGaN	111	30	125	5	-40 to +80	-40 to +85	260
AlInGaP	75	30	125	5	-40 to +80	-40 to +85	260

*Duty 1/8 @ 1kHz

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

Forward Voltage V_F for AlInGaP @ 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
D	25	32	mcd
E	32	40	
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	

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 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 Yellow Green @ I_F=20mA

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

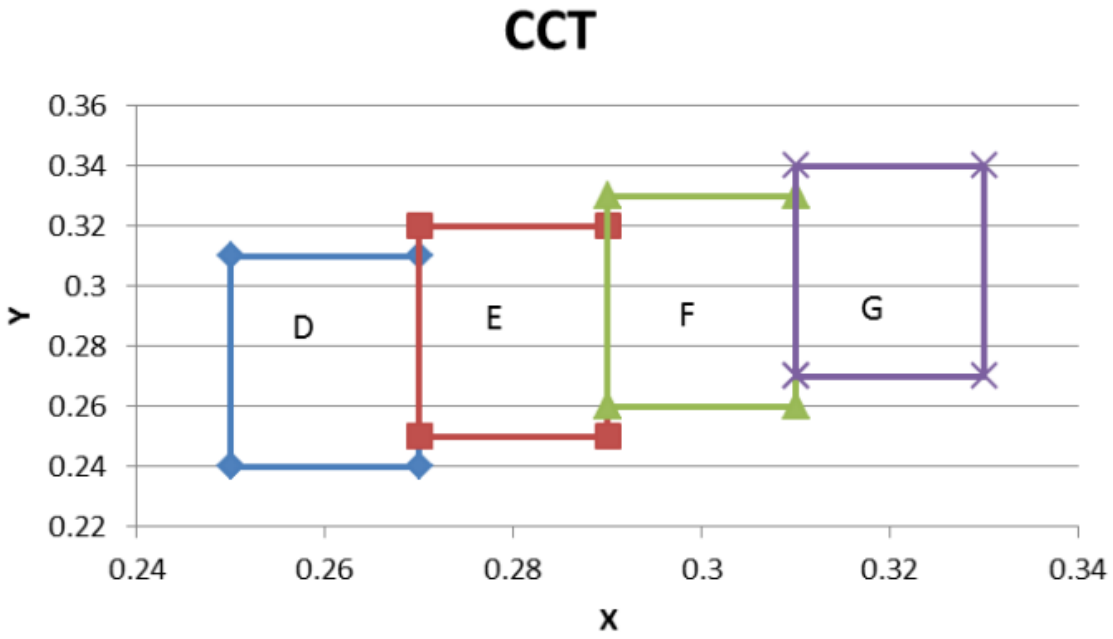
Dominant Wavelength λ_D for Yellow @ I_F=20mA

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

Dominant Wavelength λ_D for Oragne @ I_F=20mA

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

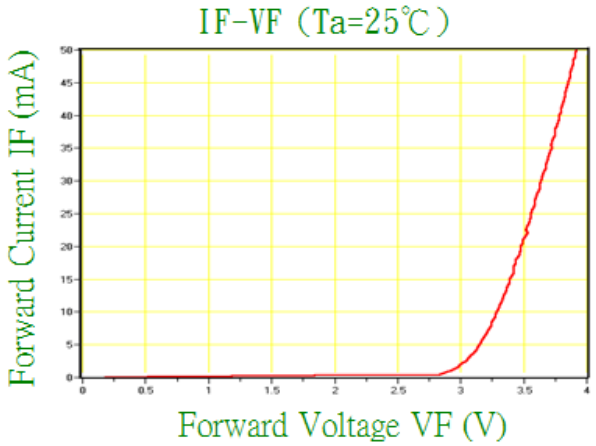
CIE Chromaticity Table

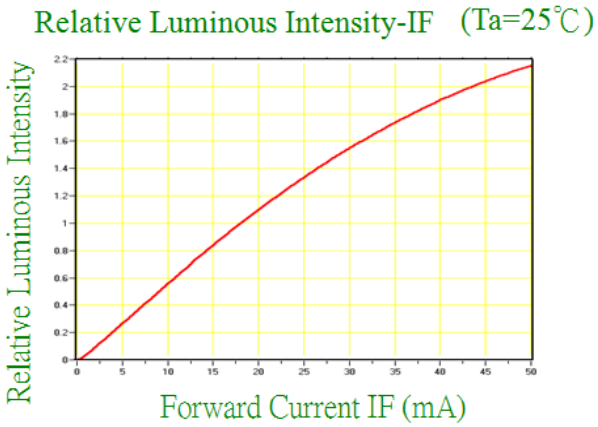


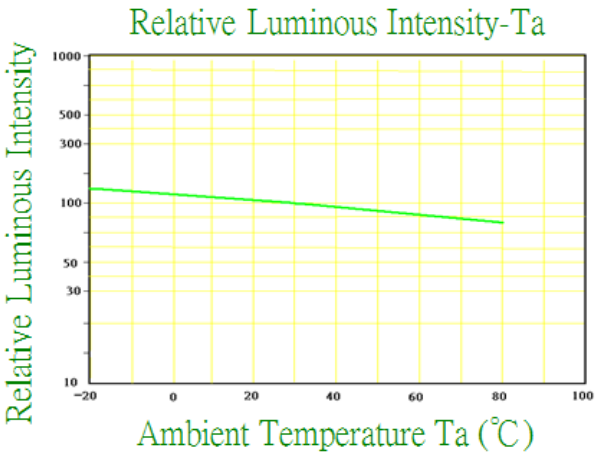
D		E		F		G	
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27
0.25	0.31	0.27	0.32	0.29	0.33	0.31	0.34
0.27	0.31	0.29	0.32	0.31	0.33	0.33	0.34
0.27	0.24	0.29	0.25	0.31	0.26	0.33	0.27
0.25	0.24	0.27	0.25	0.29	0.26	0.31	0.27

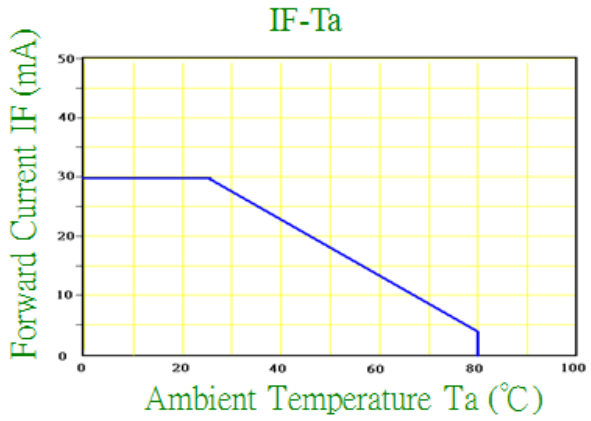
Characteristic Curves

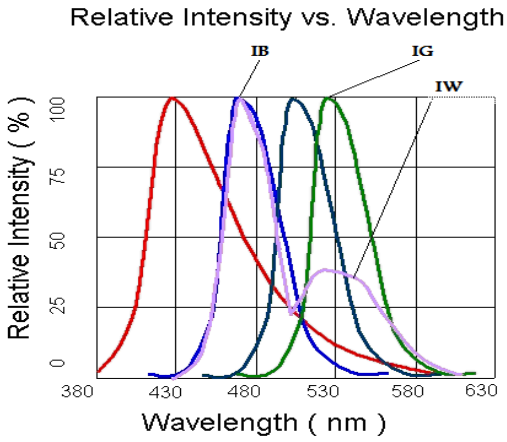
InGaN (IB/IG/IW)

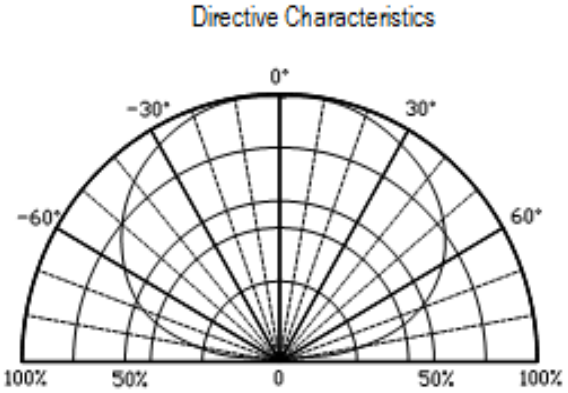




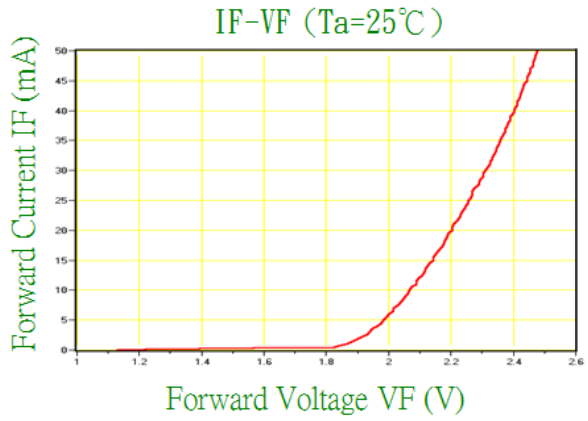


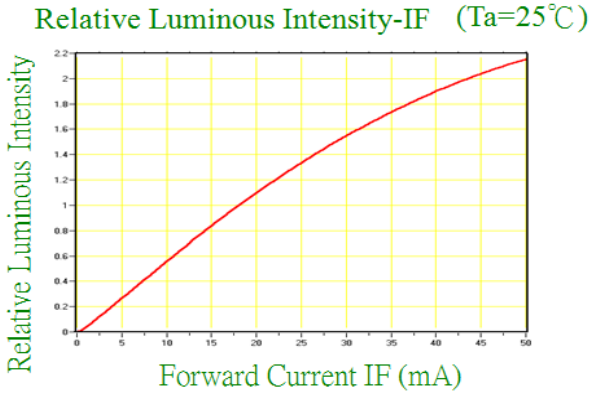


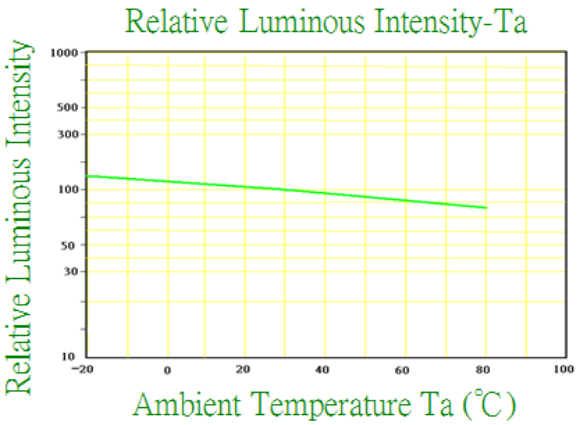


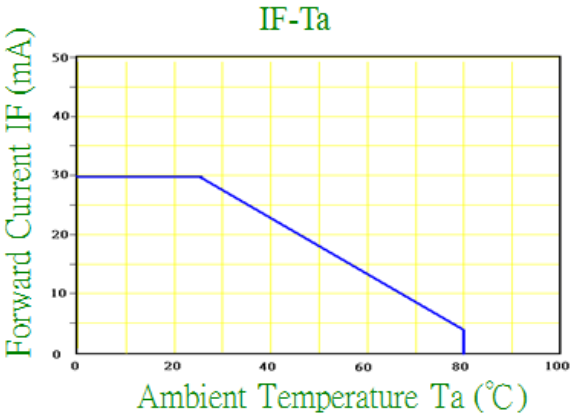


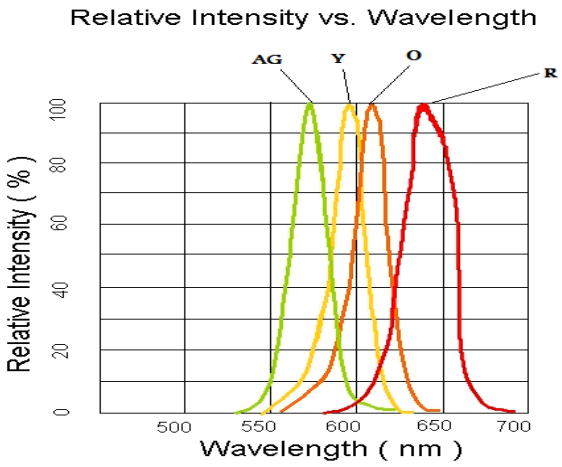
AlInGaP (R/AG/Y/O)

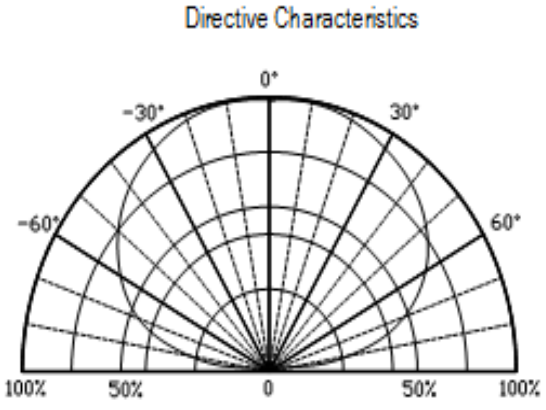






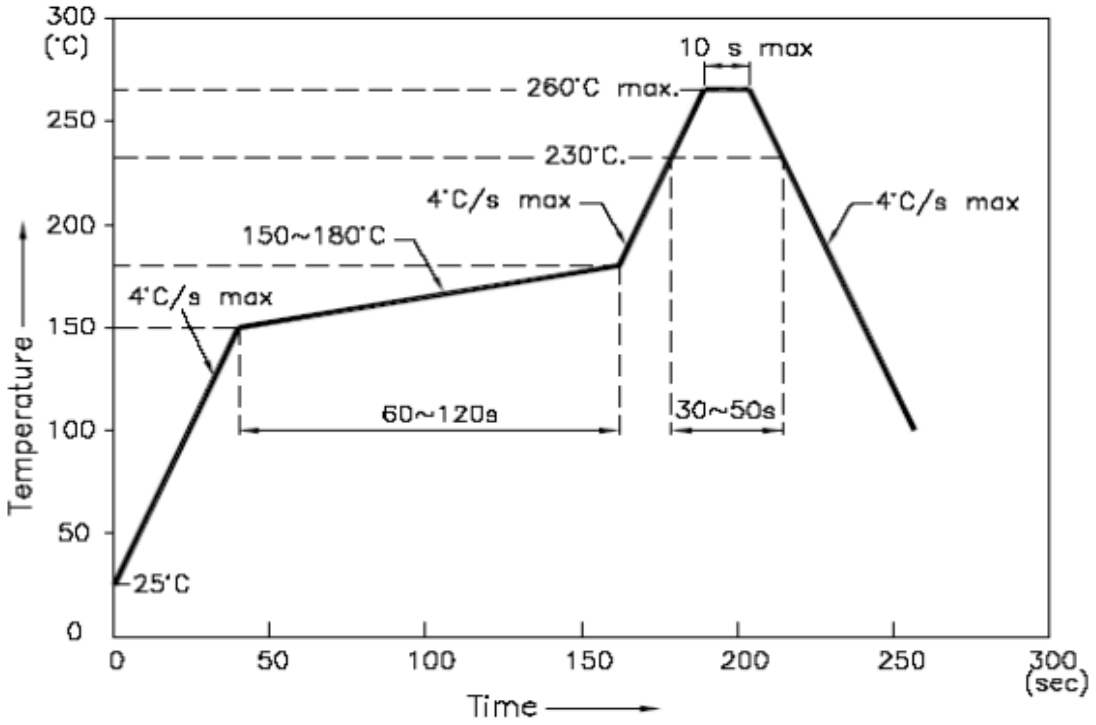




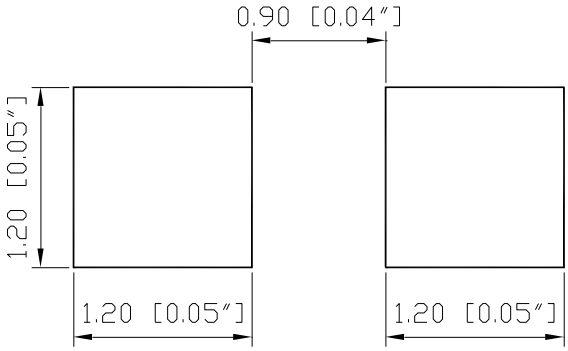


Solder Profile & Footprint

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

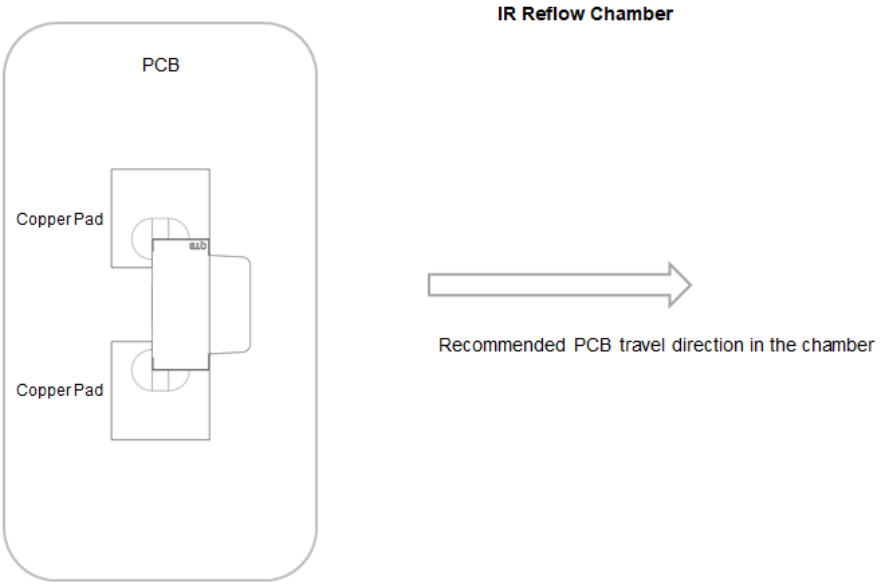


Recommended Pad Layout



Units: mm Tolerance: ± 0.1mm

- The recommended IR reflow direction for a right angle (side view) SMD led is illustrated below to insure the solder on each lead melts simultaneously during the SMT reflow soldering process.

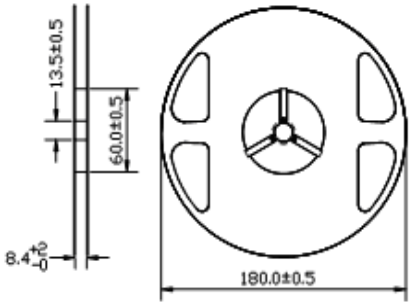


Mounting the LED on PCB

Note: The amount of solder paste applied as shown in the picture is just for illustration purpose only. When mounting and soldering the LEDs, avoid excess solder paste from overflowing onto or near the epoxy lens.

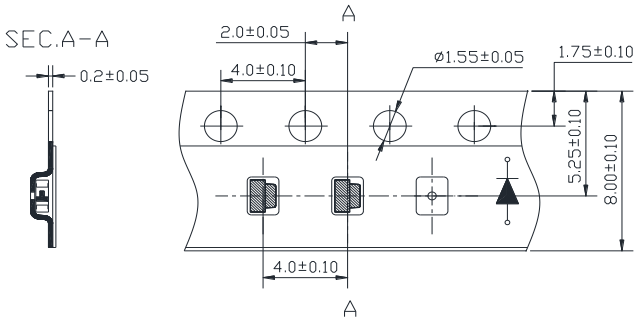
Packing

Reel Dimension:



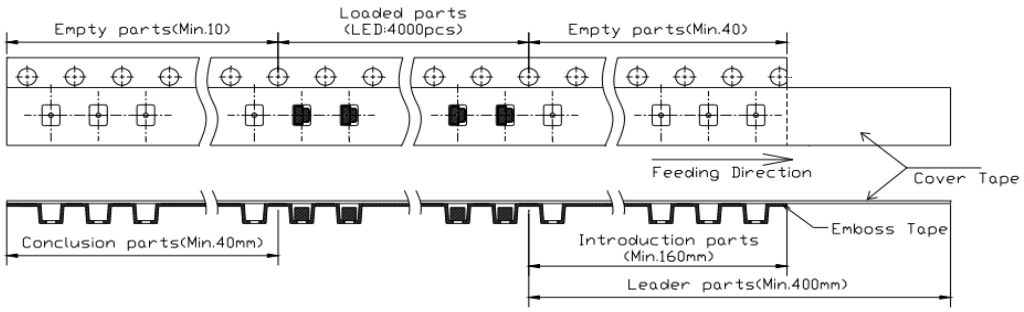
Unit: mm

Tape Dimension:

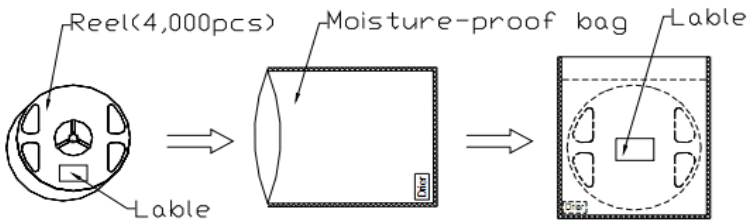


Unit: mm

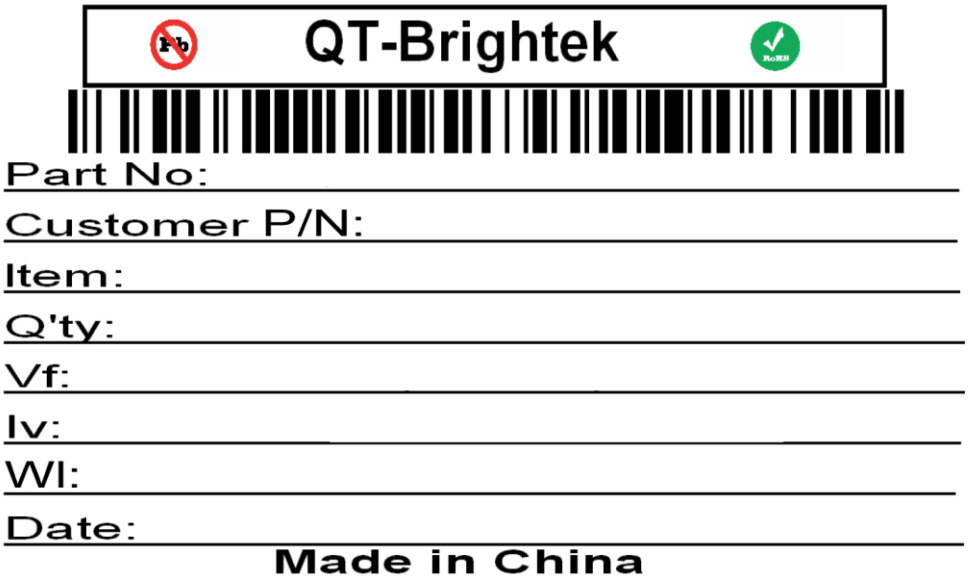
Arrangement of Tape:



Packaging Specifications:



Labeling



Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP617-IB	QBLP617-IB	Iv=63mcd typ. @ 20mA / Color=465nm ~ 475nm	4,000 units
QBLP617-IG	QBLP617-IG	Iv=380mcd typ. @ 20mA / Color=520nm ~ 530nm	4,000 units
QBLP617-R	QBLP617-R	Iv=100mcd typ. @ 20mA / Color=615nm ~ 630nm	4,000 units
QBLP617-AG	QBLP617-AG	Iv=35mcd typ. @ 20mA / Color=565nm ~ 576nm	4,000 units
QBLP617-Y	QBLP617-Y	Iv=150 mcd typ. @ 20mA / Color=585nm ~ 595nm	4,000 units
QBLP617-O	QBLP617-O	Iv=165mcd typ. @ 20mA / Color=600nm ~ 610nm	4,000 units
QBLP617-IW	QBLP617-IW	Iv=250mcd typ. @ 20mA / CCT Coordinate: (X= 0.28, Y = 0.29) typ.	4,000 units

Revision History

Description:	Revision #	Revision Date
New Release of QBLP617_series	V1.0	01/11/2012
Add Blue color Spec	V1.1	01/12/2012
Add Orange and White, update to new format	V1.2	06/18/2012
Update White luminous intensity	V1.3	09/13/2013
Update Blue wavelength and luminous intensity	V1.4	02/06/2014
Add recommended SMT and mounting suggestion / Optimize drawing dimensions in the datasheet	V1.5	04/11/2022
Update the mounting orientation illustration	V1.6	09/29/2022

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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.