



PRELIMINARY SPEC

3.2x1.6mm SMD CHIP LED

PART NO: MS-PT3216QBBC BLUE



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

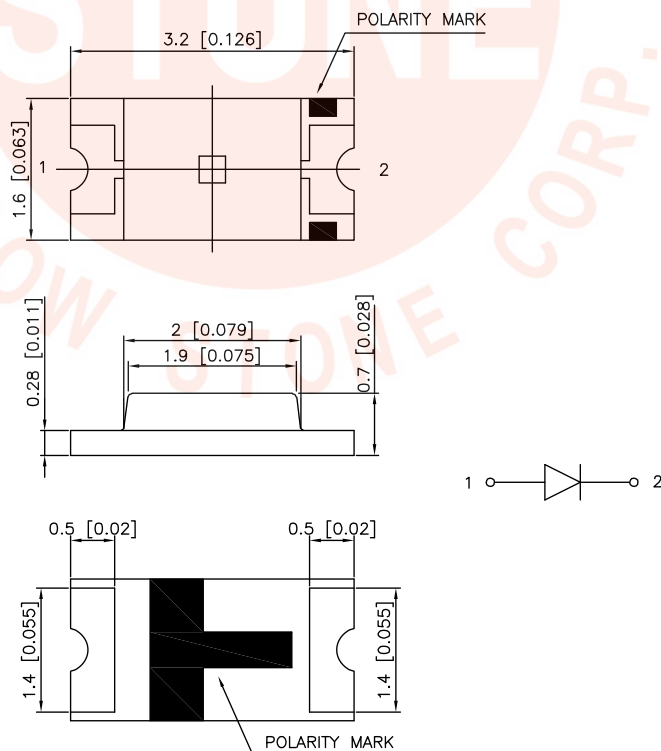
Features

- 3.2mmx1.6mm SMT LED, 0.7mm THICKNESS.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- VARIOUS COLORS AND LENS TYPES AVAILABLE.
- PACKAGE : 4000PCS / REEL.
- RoHS COMPLIANT.

Applications

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and back-lighting in telephone and fax.
- Flat backlight for LCD switch and symbol.

Package Dimensions



Notes:

1. All dimensions are in millimeters.
2. Tolerance is ± 0.15 unless otherwise noted.
3. Specifications are subject to change without notice.

◆ Device Selection Guide

Part No.	Chip		Lens color
MS-PT3216QBBC	Material	Emitted color	Water clear
	(InGaN)	BLUE	

◆ Absolute Maximum Ratings at T_A=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	100	mW
Forward Current	I _F	25	mA
Peak Forward Current*1	I _{FP}	100	mA
Reverse Voltage	V _R	5	V
Operating Temperature	T _{opr}	-40°C To +85°C	
Storage Temperature	T _{stg}	-40°C To +85°C	

Notes:

*1: Pulse width≤0.1ms, Duty cycle≤1/10

◆ Electrical / Optical Characteristics at T_A=25°C

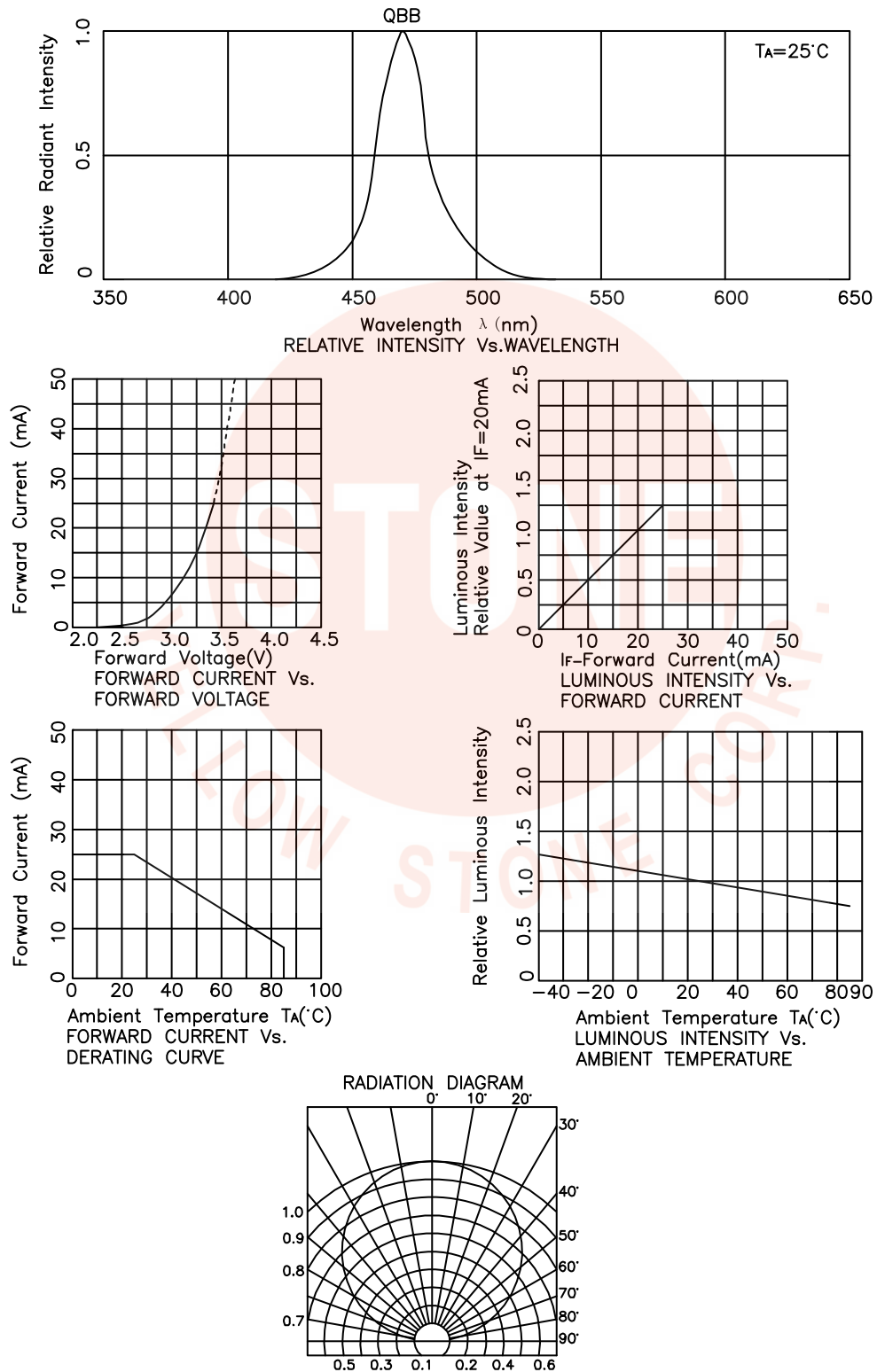
Parameter	Symbol	Min.	Typ.	Max	Unit	Test Conditions
Forward Voltage	V _F	2.8	—	3.6	V	I _F =20mA
Reverse Current	I _R	—	—	10	μA	V _R =5V
Dominate Wavelength	λ _D	464	—	473	nm	I _F =20mA
Luminous Intensity	I _v	225	—	500	mcd	I _F =20mA
Viewing Angle	2θ1/2	—	120	—	Deg.	I _F =20mA

Remarks:

If special sorting is required (e.g. binning based on forward voltage, luminous intensity, or chromaticity), the typical accuracy of the sorting process is as follows:

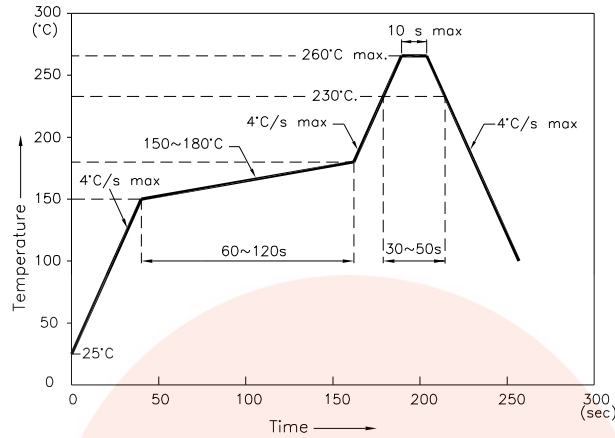
1. wavelength: ±1nm
2. Luminous Intensity: ±15%
3. Forward Voltage: ±0.1V

◆ Typical Electrical/Optical Characteristics Curves



◆ Soldering Profile

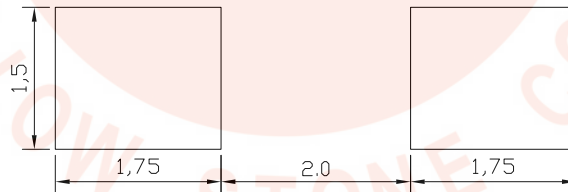
Reflow Soldering Profile For Lead-free SMT Process.



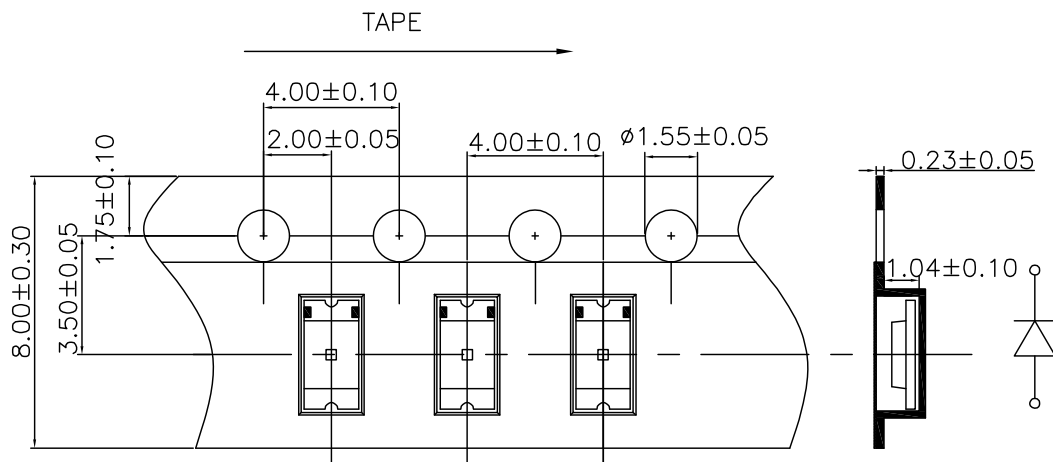
NOTES:

1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

◆ Recommended soldering pattern (Units:mm)



◆ Tape specifications (Units:mm)





Label Explanation

CODE: XX XX XX
 ↓ ↓ ↓
 IV X/Y (WL) VF
 亮度 坐标 (波长) 电压

Part NO. : xxxxxxxxxxxxxx
QTY: xxx PCS CODE: xx xx xx
Lot NO: xxxxxxxxxxxxxx
ERP NO. : xxxxxxxxxxxxxx
Date: xxxxxxxxxxxxxx



VF Rank

Rank	VF(V)		Condition
	Min	Max	
G	2.8	3.0	IF=20mA
H	3.0	3.2	
J	3.2	3.4	
K	3.4	3.6	

Tolerance:±0.1V

λD Rank

Rank	λD(nm)		Condition
	Min	Max	
4	464	467	IF=20mA
5	467	470	
6	470	473	

Tolerance:±1nm

IV Rank

Rank	IV(mcd)		Condition
	Min	Max	
R	225	295	IF=20mA
S	295	385	
T	385	500	

Tolerance:±15%

◆ CAUTIONS:

1.Storage

儲存

- Storage condition before opening the package: 5°C~30°C, the largest percentage relative humidity is 60% and the storage period is six month. The LEDs beyond the storage period just can be used after dealing as step 4.
- After opening the package, If the LEDs will be Infrared reflow soldering, Oxygen phase reflow soldering or any other welding.
 - a. must be welding within 24 hours.
 - b. the storage humidity must be below 30% .
- If the situation does not satisfy 2a or 2b, the LEDs must be roasted.
- If the LEDs need to be roasted, the roast temperature should be 60°C +/-3 and the roast time should be 24 hours.
- 未拆封前的儲存條件：5°C~30°C，最大相對濕度60%，儲存時間6個月，超過6個月的LED按步驟4處理後才能正常使用。
- 袋子開封後，元件若將進行紅外線回焊、氧相回焊或類似的焊接處理，必須在
 - a. 24小時內完成焊接工作。
 - b. 儲存濕度低於30% 。
- 假如不符合2a或2b的條件，則元件必須烘烤。
- 若元件須烘烤，烘烤條件為：60°C ±3，24小時。

2.ESD (Electrostatic Discharge)

靜電

Static Electricity or power surge will damage the LED.

The following procedures may decrease the possibility of ESD damage.

- All production machinery and test instruments must be electrically grounded.
- Use a conductive wrist band or anti-electrostatic glove when handling these LEDs.
- Maintain a humidity level of 50% or higher in production areas.
- Use anti-static packaging for transport and storage.

靜電和電涌會對LED造成損毀。

下列方式有減少靜電危害的可能性。

- 所有生產機械和測試設備必須接地。
- 操作LED燈時，需佩戴防靜電手環或防靜電手套。
- 在生產車間維持濕度等級在50%或以上。
- 運輸和儲存需用抗靜電袋包裝。

3.Cleaning

清洗

- Led should be cleaned in a normal temperature and the time for cleaning should be less than 3 minutes ; please use Alcohol as cleaner ,before you use other cleaning solvent ,please make sure that the cleaner will not make any damage to the LED performance or the appearance .
- Ultrasonic Cleaning is also commonly used for cleaning LED , please verify the Ultrasonic cleaning 's Power and time to avoid any damage to the LED .
- The recommended solvent for cleaning:
- LED的清洗推薦在常溫下進行且清洗時間不超過3分鐘，建議優先選用酒精做為清洗劑，在選用其他溶劑清洗前請先確認不會對LED封裝性能或外觀造成損傷。
- 超声波清洗也是常用的有效方法，在进行大批量清洗前请先验证超声波清洗的功率及时间是否会对LED造成损伤。



• 推荐的溶剂:

Common cleaning solvent 常用清洁溶剂	Disable cleaning solvent 禁用清洁溶剂
Alcohol 酒精	Thinner、Acetone、Two fluorine resin 、 Acetone b dilute 稀释剂、丙酮、 二氟脂、三氯乙稀

