



Features

- Small double-end package
- Viewing Angle = $\pm 37.5^\circ$
- High reliability
- Ultra bright Green
- RoHS compliance
- Regulatory Approvals
 - IEC 62471:2006 First edition / EN 62471:2008 Photobiological safety of lamps and lamp systems

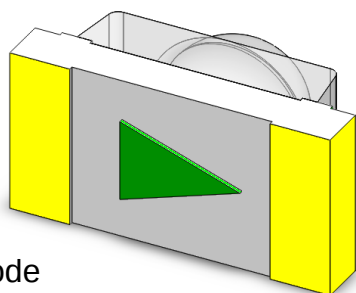
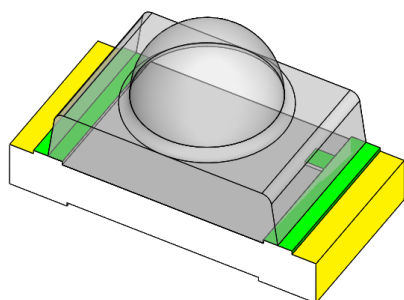
Description

The GP1608X09-H5 is an InGaN Green LED housed in a miniature SMD package. The device has a dominant wavelength of 525nm LED spectrally matched with phototransistor or photodiode.

Applications

- Green sensor

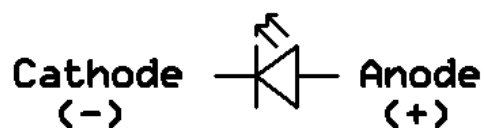
Package Outline



Cathode

Anode

Schematic





GP1608X09-H5

SMD Type Green Emitter

Absolute Maximum Rating at 25°C

Symbol	Parameters	Ratings	Units	Notes
I _F	Continuous Forward Current	20	mA	
I _{FP}	Peak Forward Current	0.1	A	1
V _R	Reverse Voltage	5	V	
T _{opr}	Operating Temperature	-40 ~ +85	°C	
T _{stg}	Storage Temperature	-40 ~ +100	°C	
T _{sol}	Soldering Temperature	260	°C	2
P _D	Power Dissipation at(or below) 25°C Free Air Temperature	68	mW	

Electro-Optical Characteristics *T_A = 25°C (unless otherwise specified)*

Optical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _v	Luminous Intensity	I _F =20mA	2800	--	5200	mcd	
I _e	Radiant Intensity	I _F =20mA	5.0	7.3	-	mW/sr	
P _o	Total Radiated Power	I _F =20mA	-	10	-	mW	
λ _p	Peak Wavelength	I _F =20mA	-	520	-	nm	
λ _d	Dominant Wavelength	I _F =20mA	515	525	535	nm	
Δλ	Spectral Bandwidth	I _F =20mA	-	30	-	nm	
θ _{1/2}	Angle of Half Intensity	I _F =20mA	-	±37.5	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =20mA	1.9	2.75	3.3	V	3
I _R	Reverse Current	V _R =5V	-	-	10	μA	

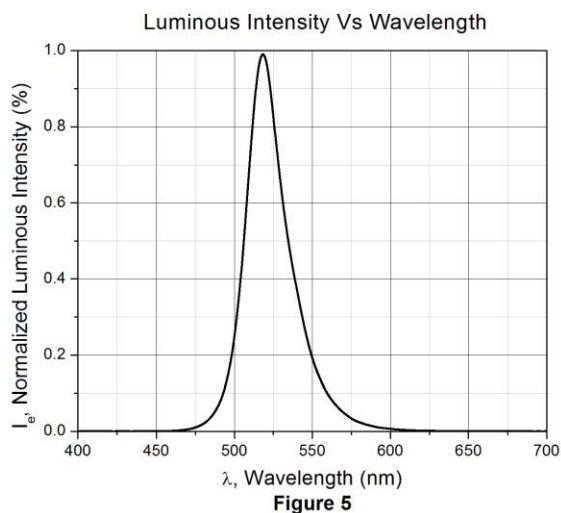
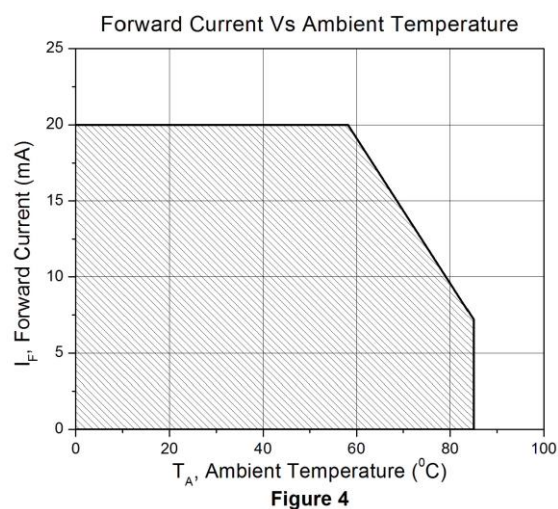
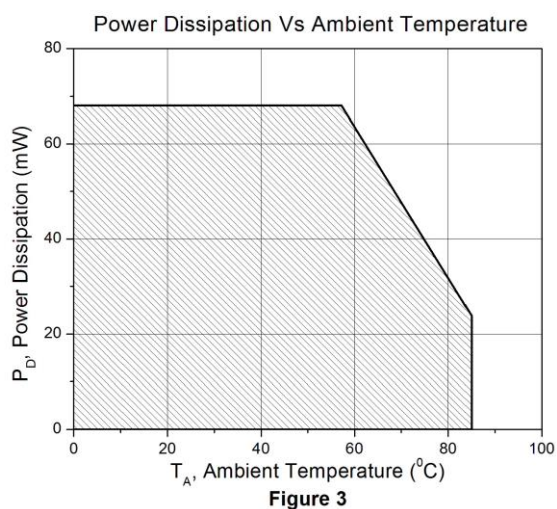
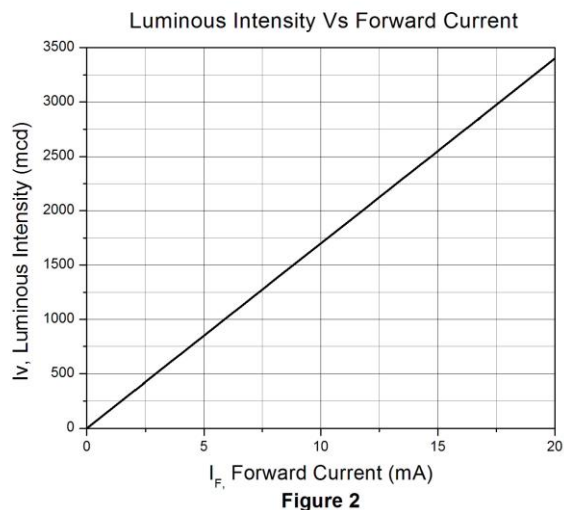
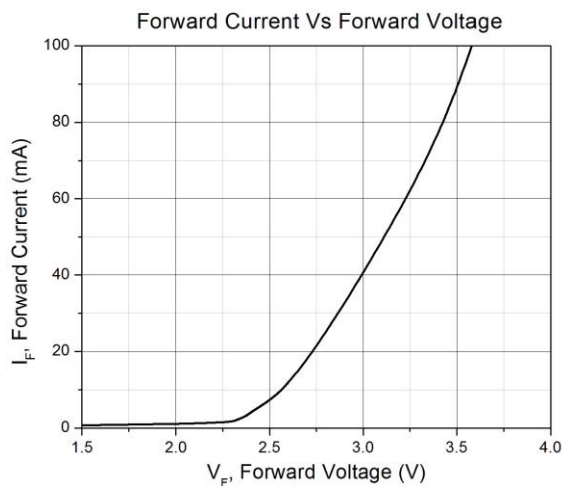
Notes:

1. I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 10%.
2. Soldering time ≤ 5 seconds.
3. V_F Bin Rank : (Tolerance of Forward Voltage : 0.1V)

Bin Code	3	4
Min	1.9	3.0
Max	3.0	3.3



Typical Characteristic Curves





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SMD Type Green Emitter

Typical Characteristic Curves

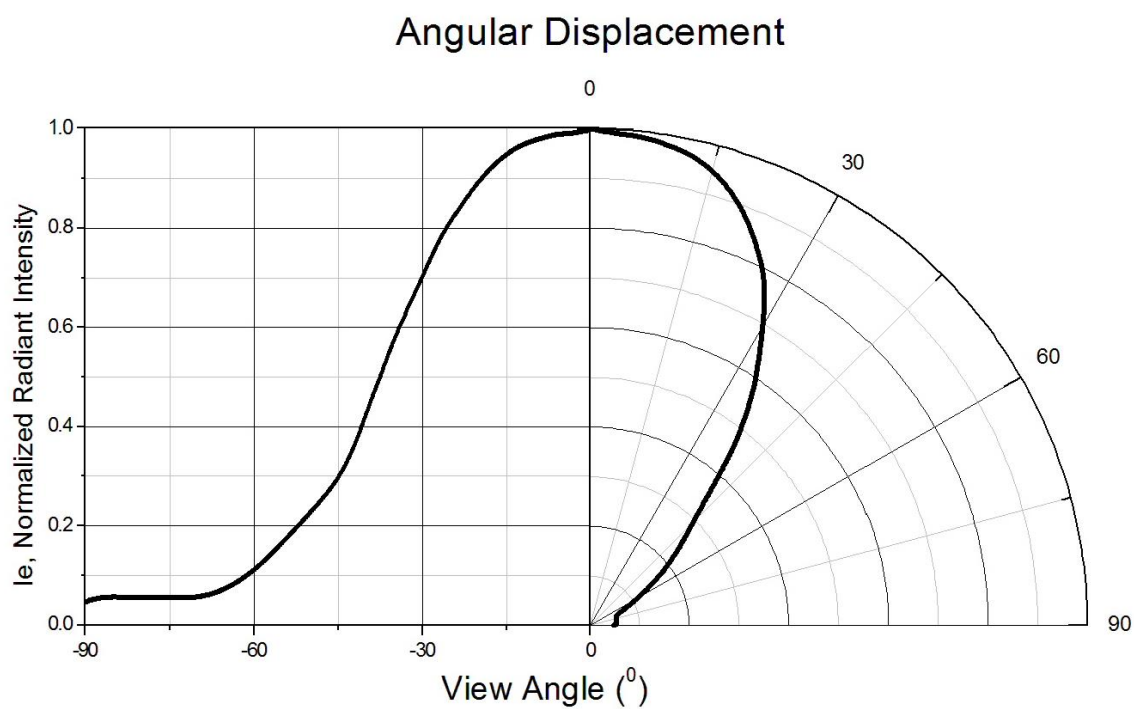


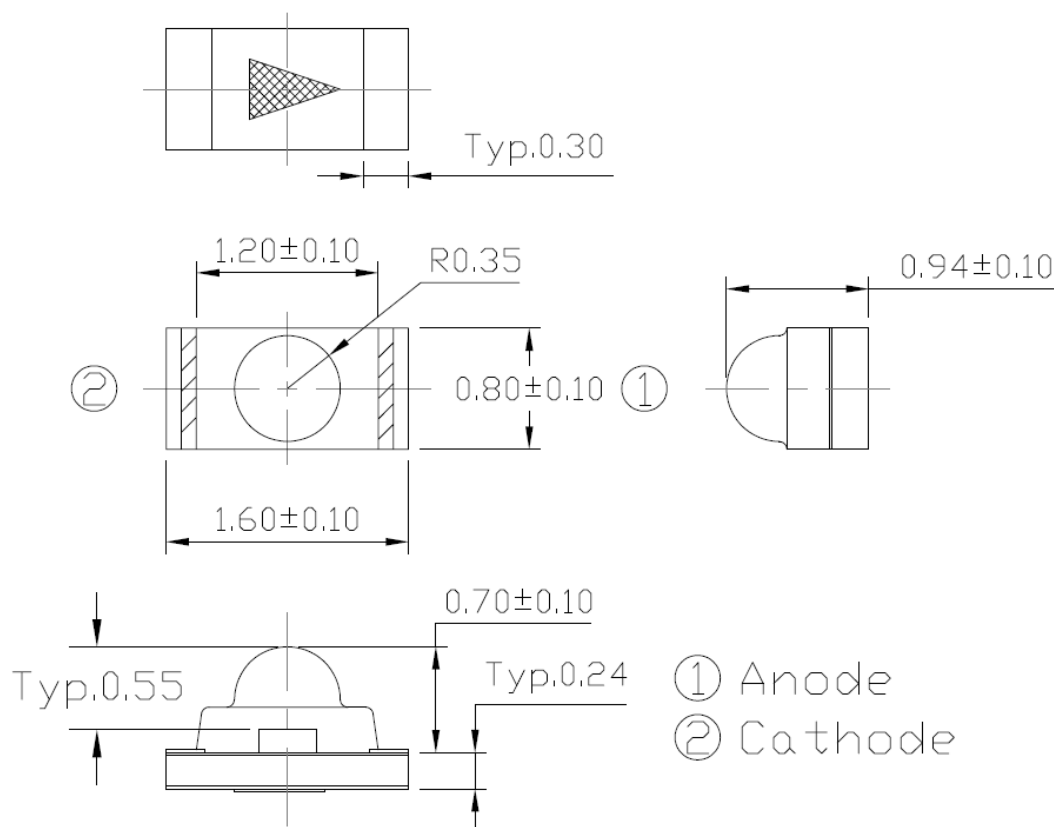
Figure 6



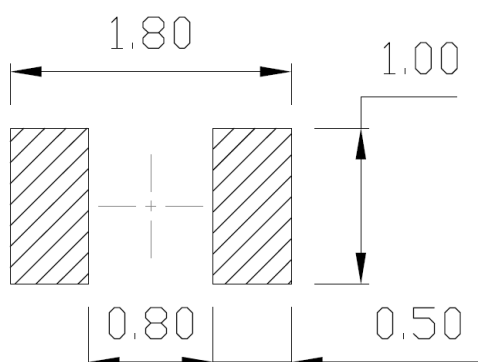
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SMD Type Green Emitter

Package Dimension *All dimensions are in mm, unless otherwise stated*



Recommended Soldering Mask *All dimensions are in mm, unless otherwise stated*



Ordering Information

Part Number	Description	Quantity
GP1608X09-H5	Tape & Reel	4000 pcs

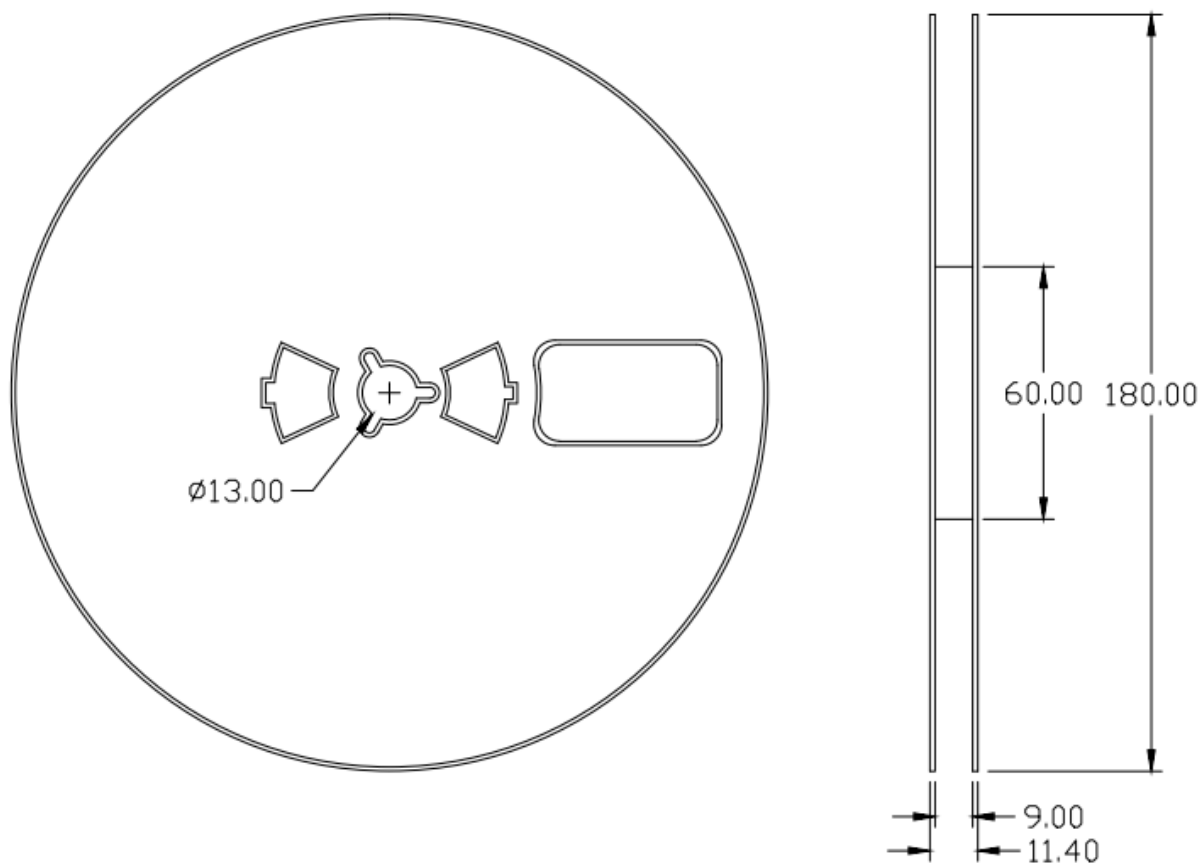


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SMD Type Green Emitter

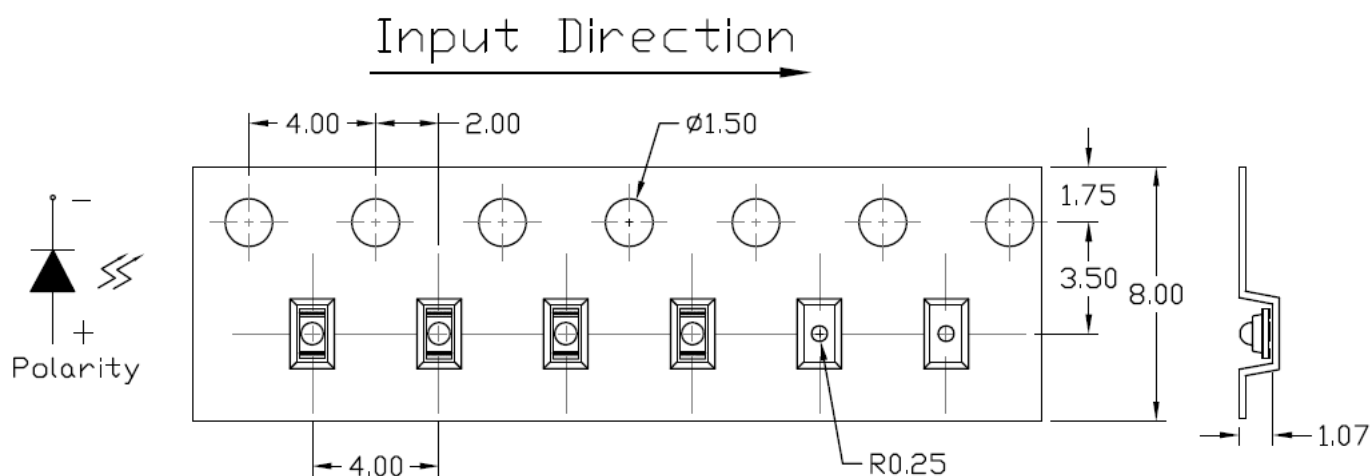
Reel Dimension

All dimensions are in mm, unless otherwise stated



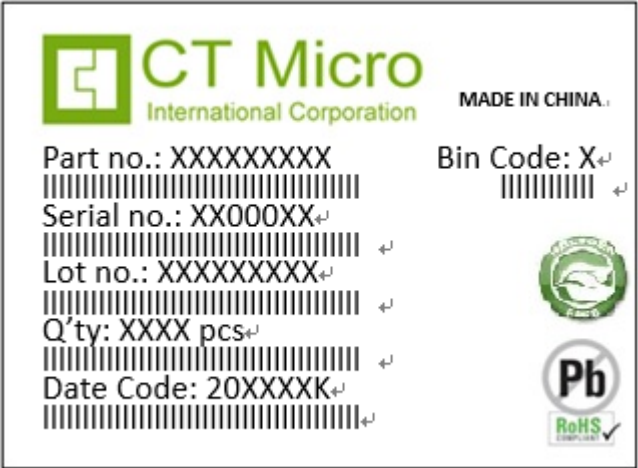
Tape Dimension

All dimensions are in mm, unless otherwise stated





Label Form Specification



Part no: CTM Production Number
Serial no: Production Number
Lot no: Lot number
Q'ty: Packing Quantity
Date Code: Manufacture Date
Bin Code: Iv Ranks
MADE IN CHINA: Production Place

Storage Condition

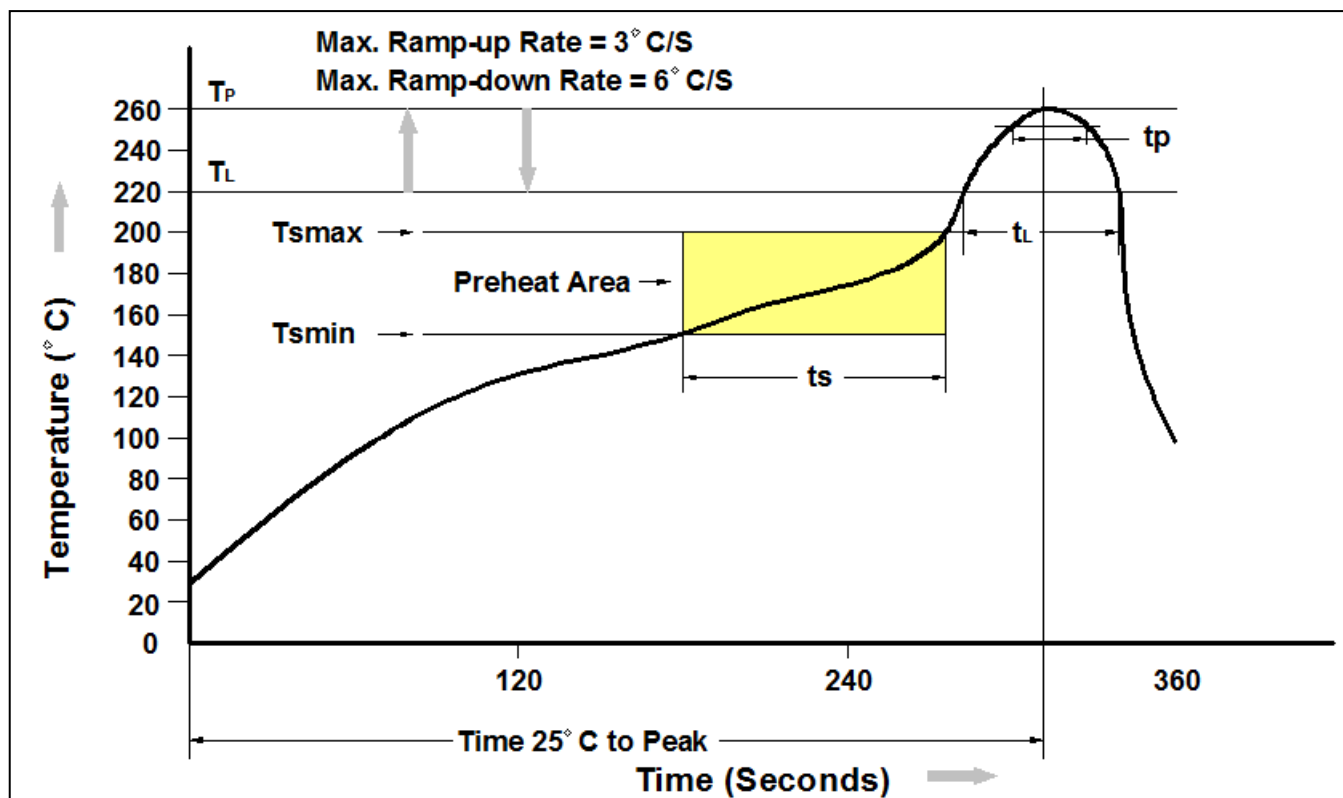
- 1. Do not open moisture proof bag before the products are ready to use.
- 2. The moisture barrier bag should be stored at 30°C and 90%R.H. max. before opening.
Shelf life of non-opened bag is 12 months after the bag sealing date.
- 3. After opening the moisture barrier bag floor life is 168h at 30°C/60%RH. max. Unused LEDs should be resealed into moisture barrier bag. (Refer to J-STD-020 Standard)
- 4. If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the J-STD-033 Standard conditions.



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Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of 260°C	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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- 2. A critical component is 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.*