



GP1608X09-H5

SMD Type Green Emitter

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

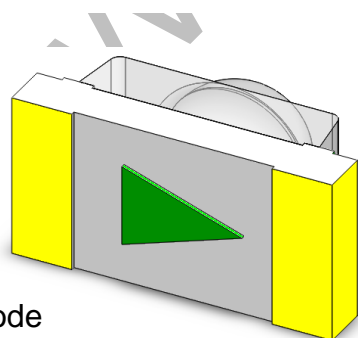
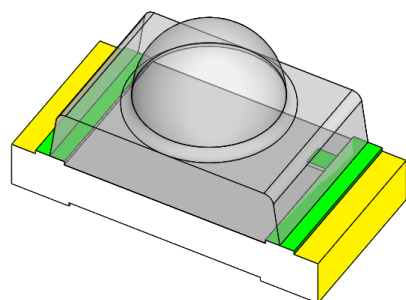
Description

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

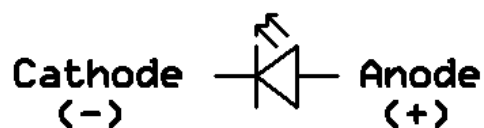
Package Outline



Cathode

Anode

Schematic





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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 *TA = 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:

- I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 10%.
- Soldering time ≤ 5 seconds.
- 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

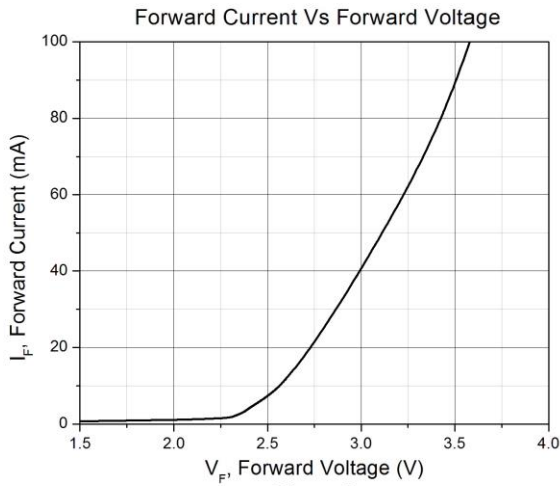


Figure 1

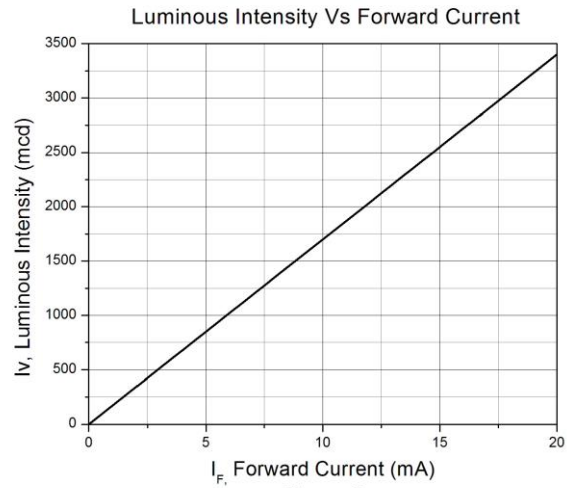


Figure 2

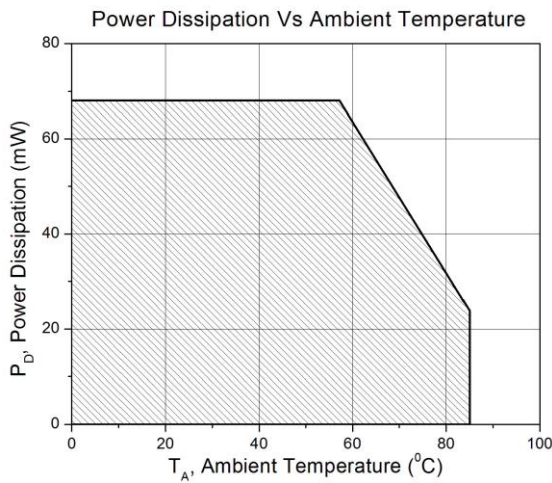


Figure 3

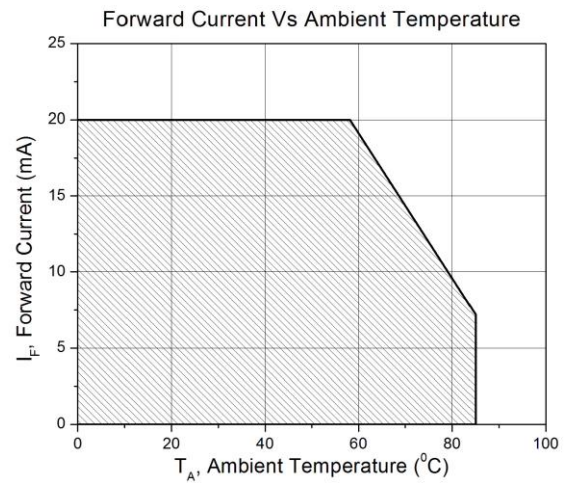


Figure 4

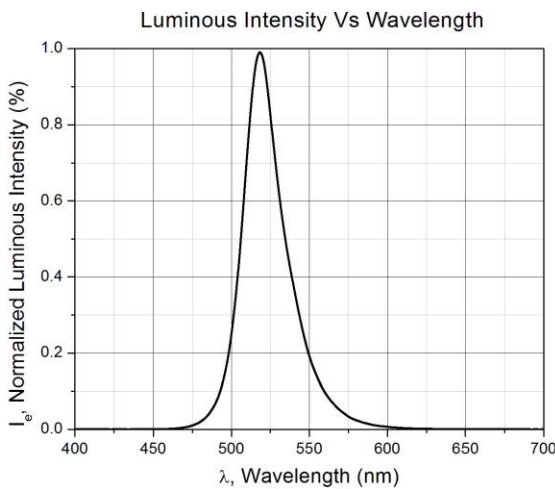


Figure 5



Typical Characteristic Curves

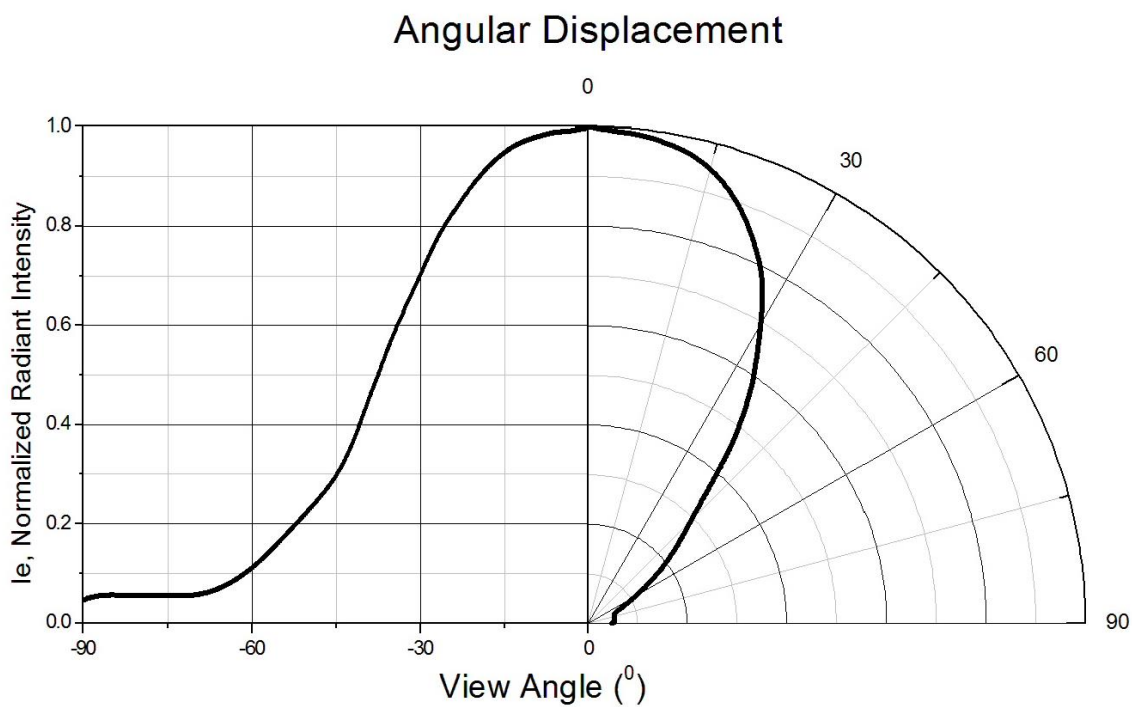


Figure 6

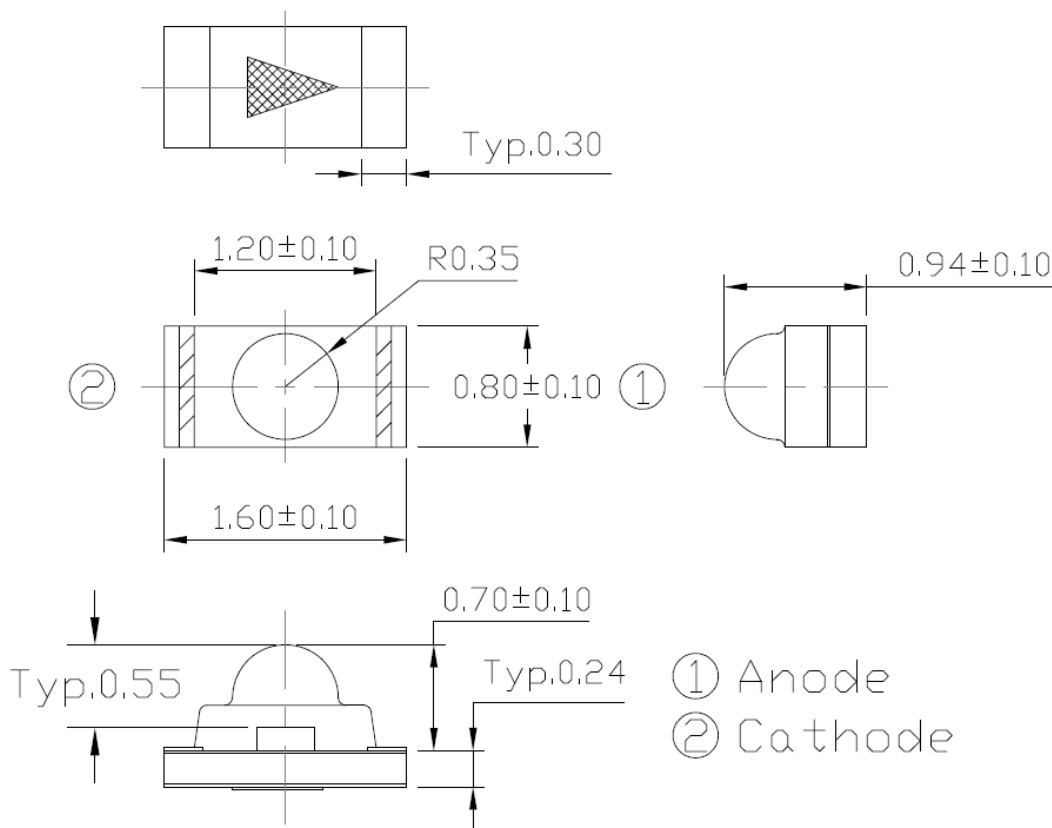
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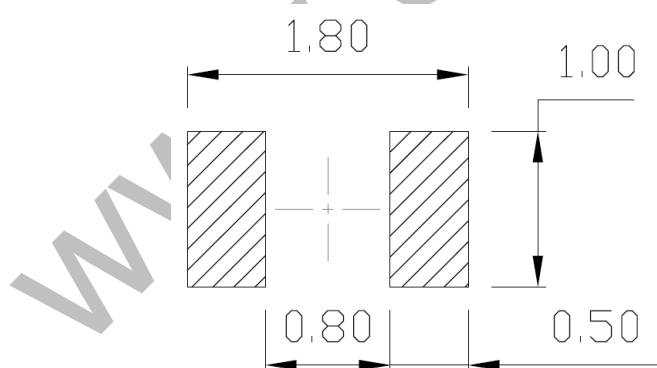
GP1608X09-H5

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



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



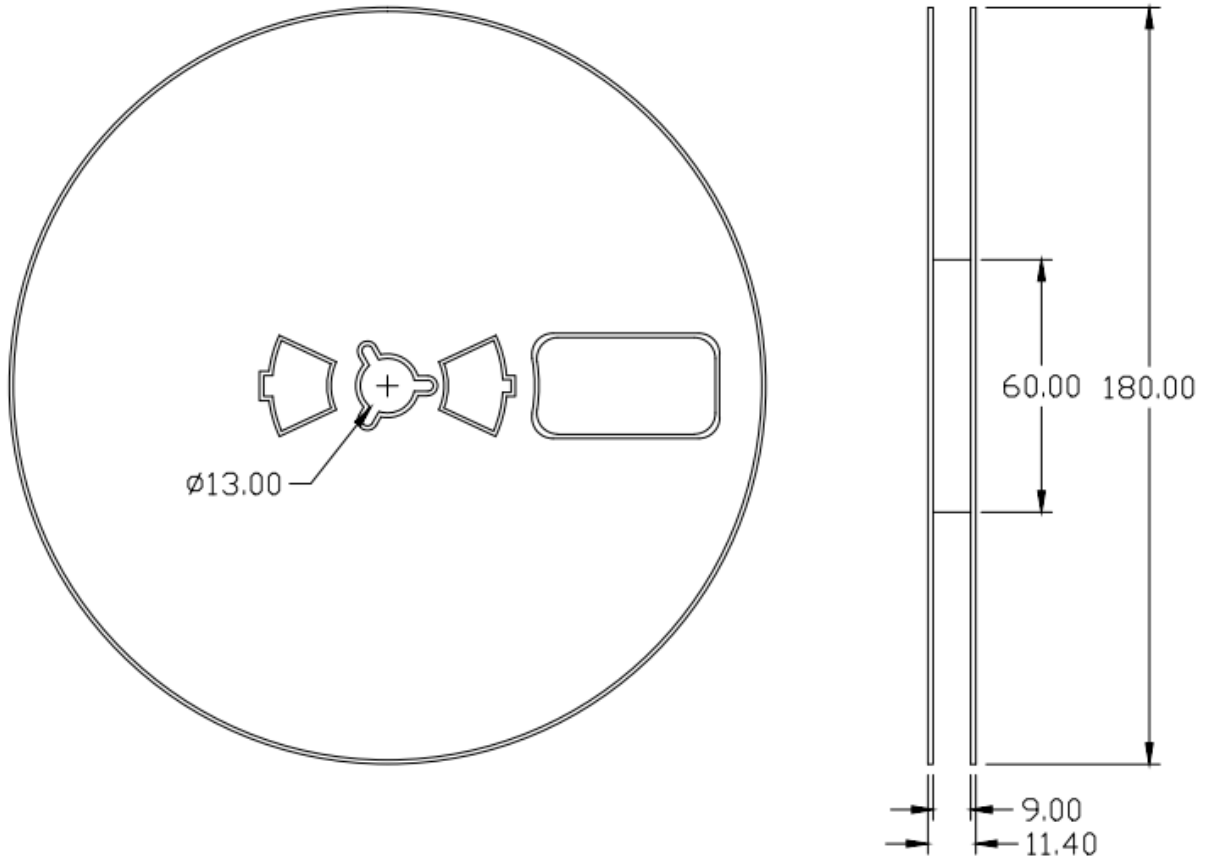
Ordering Information

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

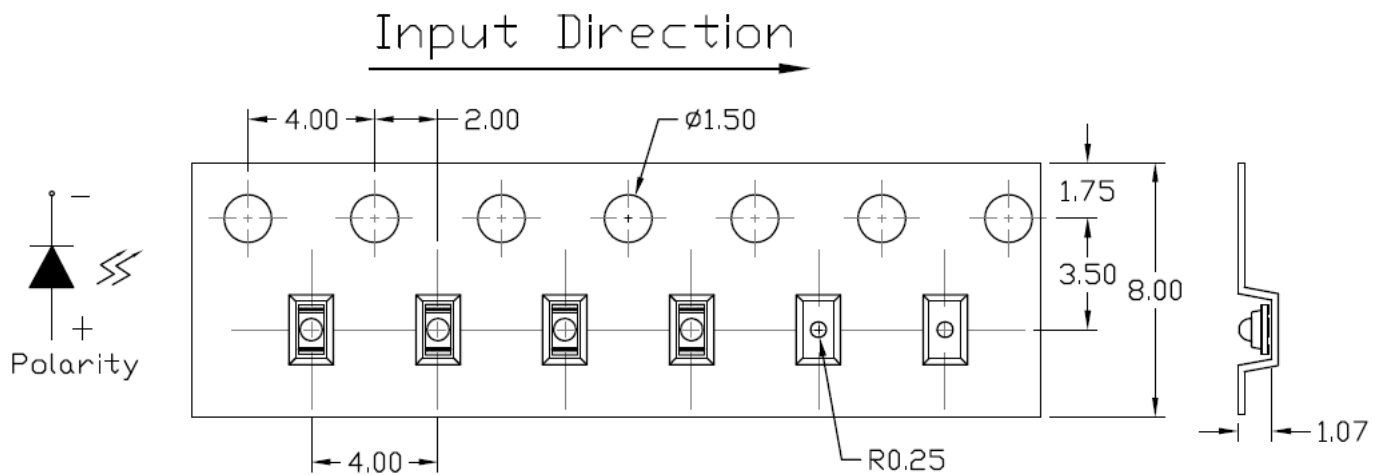


GP1608X09-H5
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Reel Dimension *All dimensions are in mm, unless otherwise stated*

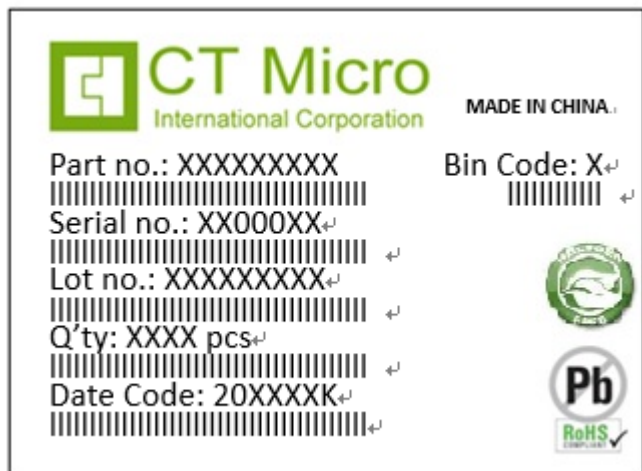


Tape Dimension *All dimensions are in mm, unless otherwise stated*





Label Form Specification



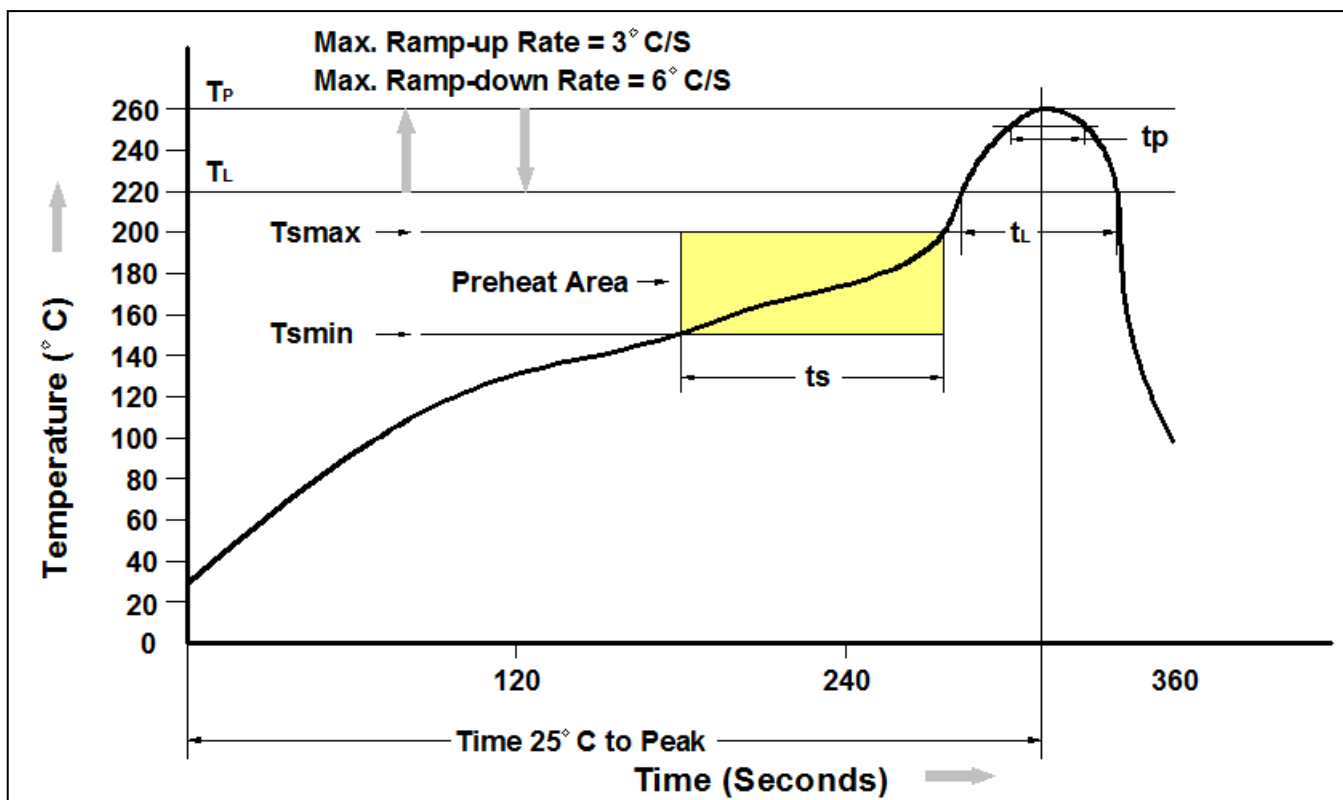
Part no: CTM Production Number
Serial no: Production Number
Lot no: Lot number
Q'ty: Packing Quantity
Date Code: Manufacture Date
Bin Code: Iv Ranks
MADE IN CHINA: Production Place

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.



Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{min})	150°C
Temperature Max. (T _{max})	200°C
Time (t _s) from (T _{min} to T _{max})	60-120 seconds
Ramp-up Rate (t _L to t _P)	3°C/second max.
Liquidous Temperature (T _L)	217°C
Time (t _L) Maintained Above (T _L)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (t _P) within 5°C of 260°C	30 seconds
Ramp-down Rate (T _P to T _L)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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