



IRP3010M20-B60

SMD Type 940nm Infrared Emitter

Features

- Small double-end package
- Viewing Angle at X axis (Note3) = $\pm 80^\circ$
- High reliability
- Good spectral matching to Si photo detector
- RoHS compliance

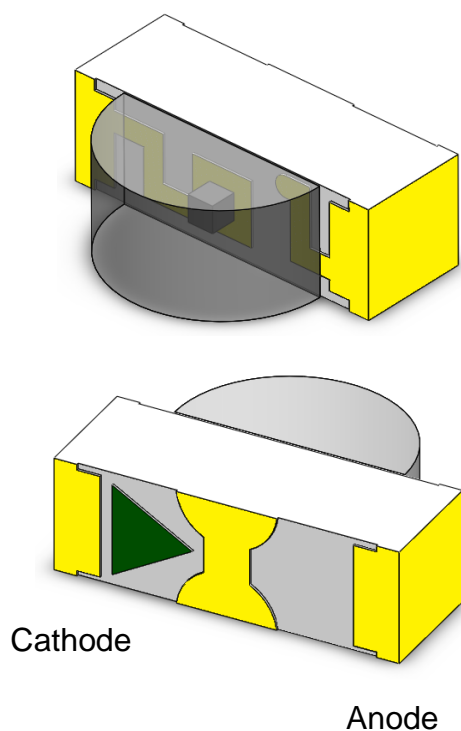
Applications

- Infrared sensor
- Light barrier
- Infrared Touch Panel Solutions

Description

The IRP3010M20-B60 is a GaAlAs infrared LED housed in a miniature SMD package. The device has a peak wavelength of 940nm LED spectrally matched with phototransistor or photodiode.

Package Outline



Schematic





Absolute Maximum Rating at 25°C

Symbol	Parameters	Ratings	Units	Notes
I _F	Continuous Forward Current	70	mA	
I _{FP}	Peak Forward Current	1.0	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	119	mW	

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

Optical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _e	Radiant Intensity	I _F =20mA	0.5	0.85	-	mW/sr	
		I _F =70mA	-	3.0	-		
λ _p	Peak Wavelength	I _F =20mA	-	940	-	nm	
Δλ	Spectral Bandwidth	I _F =20mA	-	50	-	nm	
θ _{1/2}	Angle of Half Intensity (X)	I _F =20mA	-	±80	-	deg	3
	Angle of Half Intensity (Y)		-	±75	-		

Electrical Characteristics

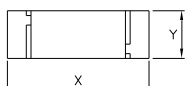
Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =20mA	1.0	1.2	1.5	V	
		I _F =70mA	1.1	1.34	1.7		
I _R	Reverse Current	V _R =5V	-	-	10	μA	

Notes:

1 : I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 1%.

2 : Soldering time ≤ 5 seconds.

3 : Test condition :





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Typical Characteristic Curves

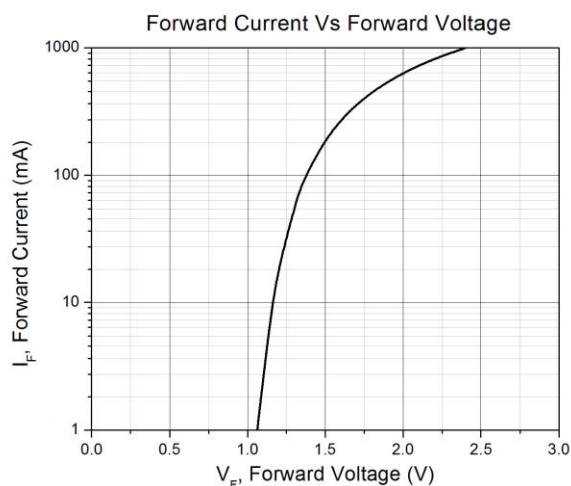


Figure 1

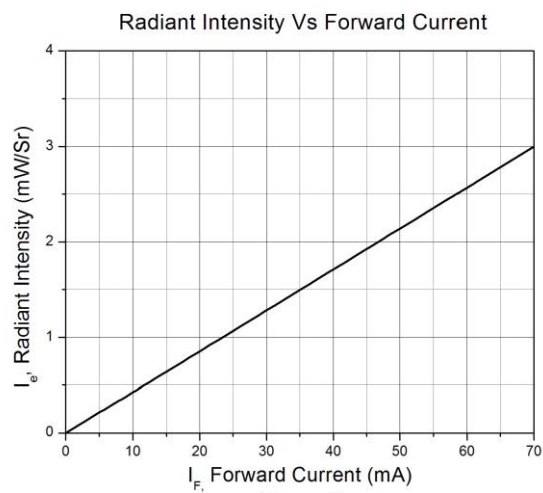


Figure 2

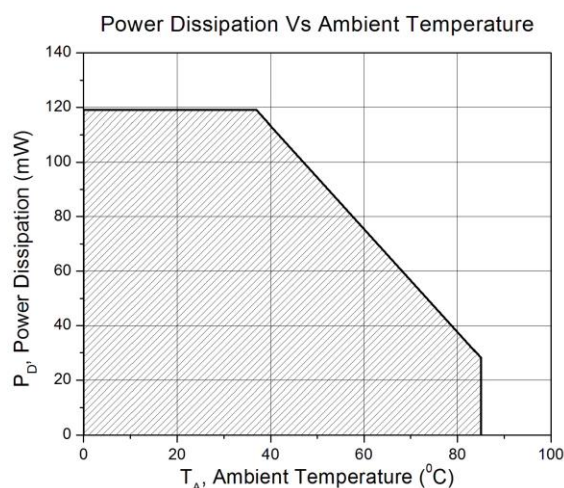


Figure 3

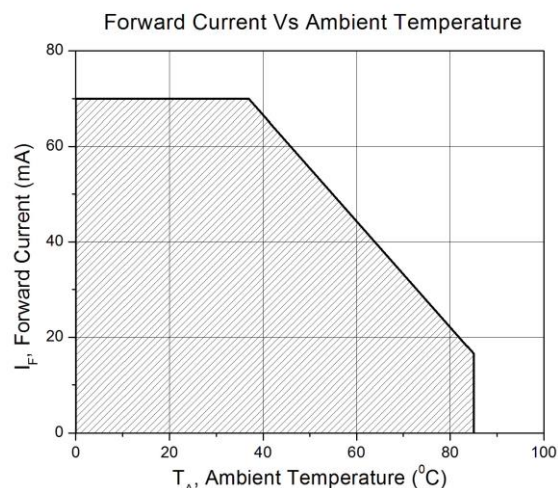


Figure 4

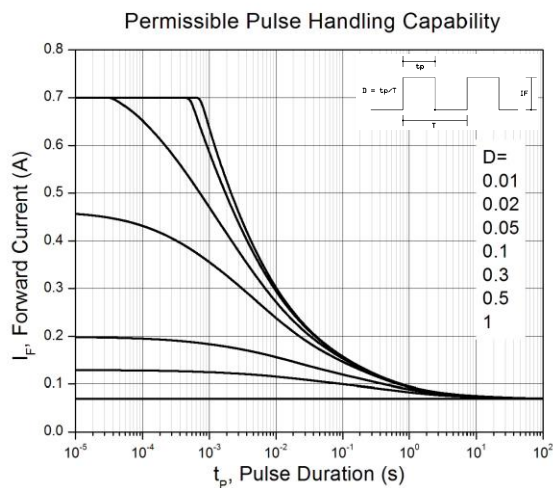


Figure 5

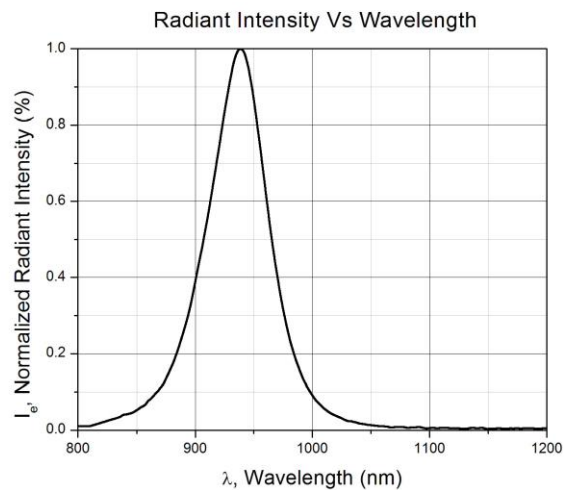


Figure 6



Typical Characteristic Curves

Angular Displacement at X axis

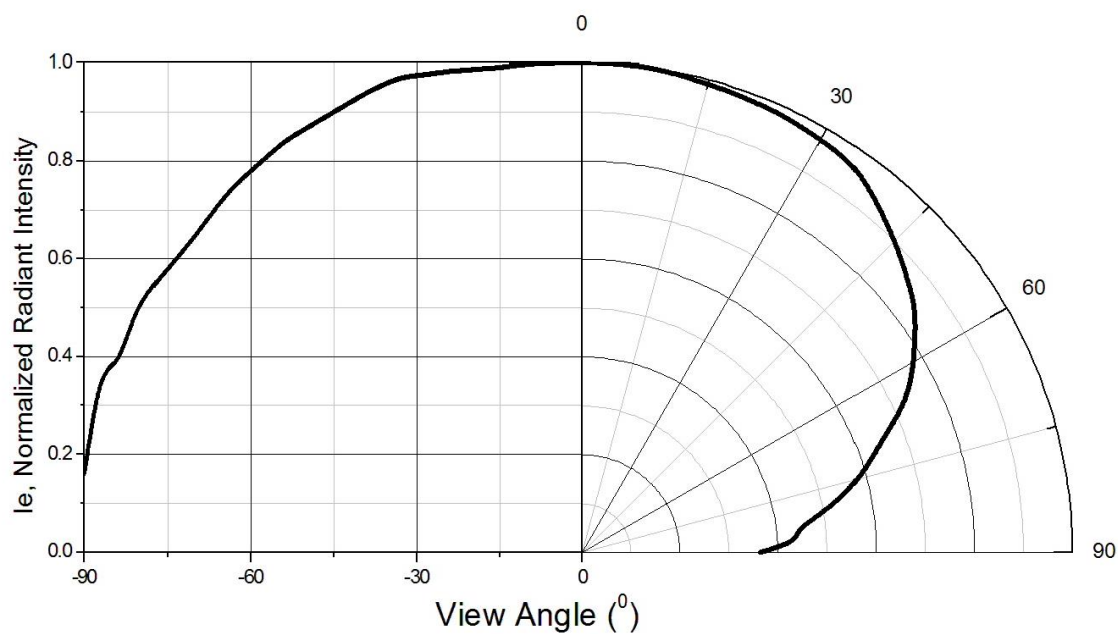


Figure 7

Angular Displacement at Y axis

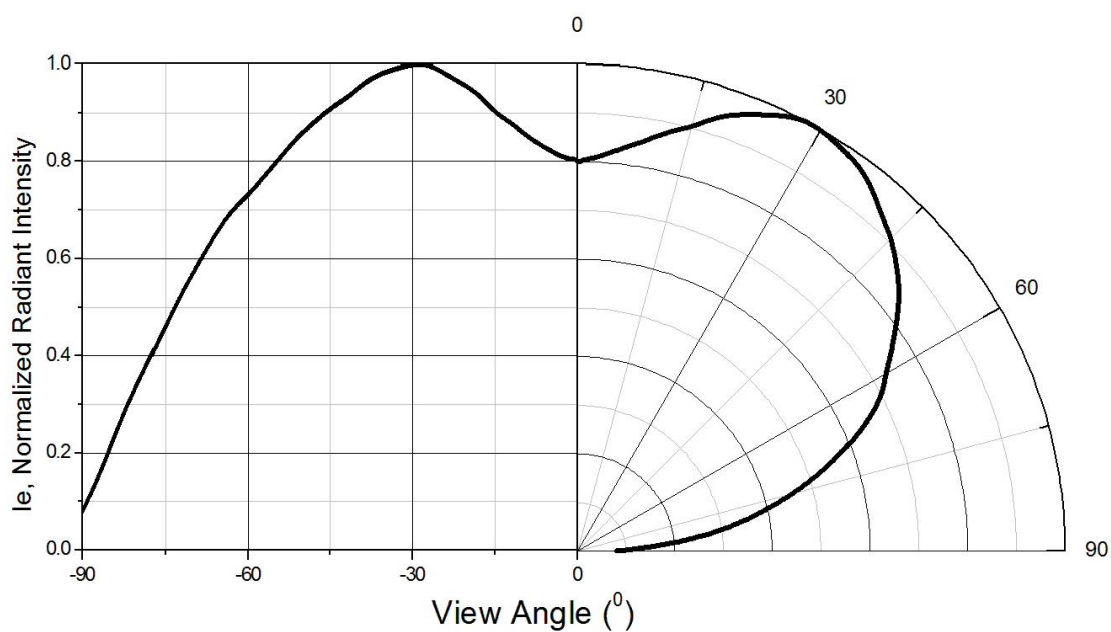


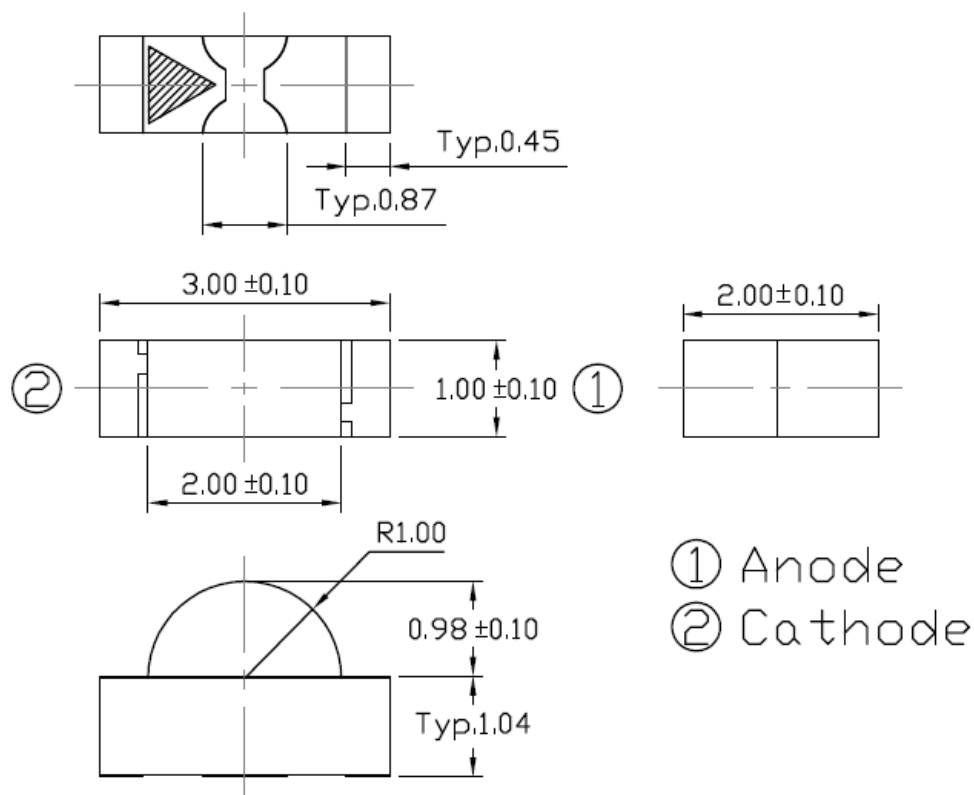
Figure 8



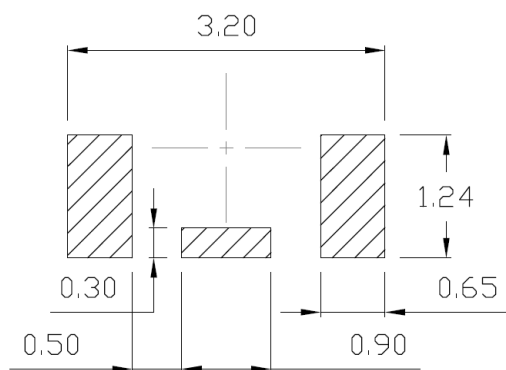
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Package Dimension *All dimensions are in mm, unless otherwise stated*



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



Ordering Information

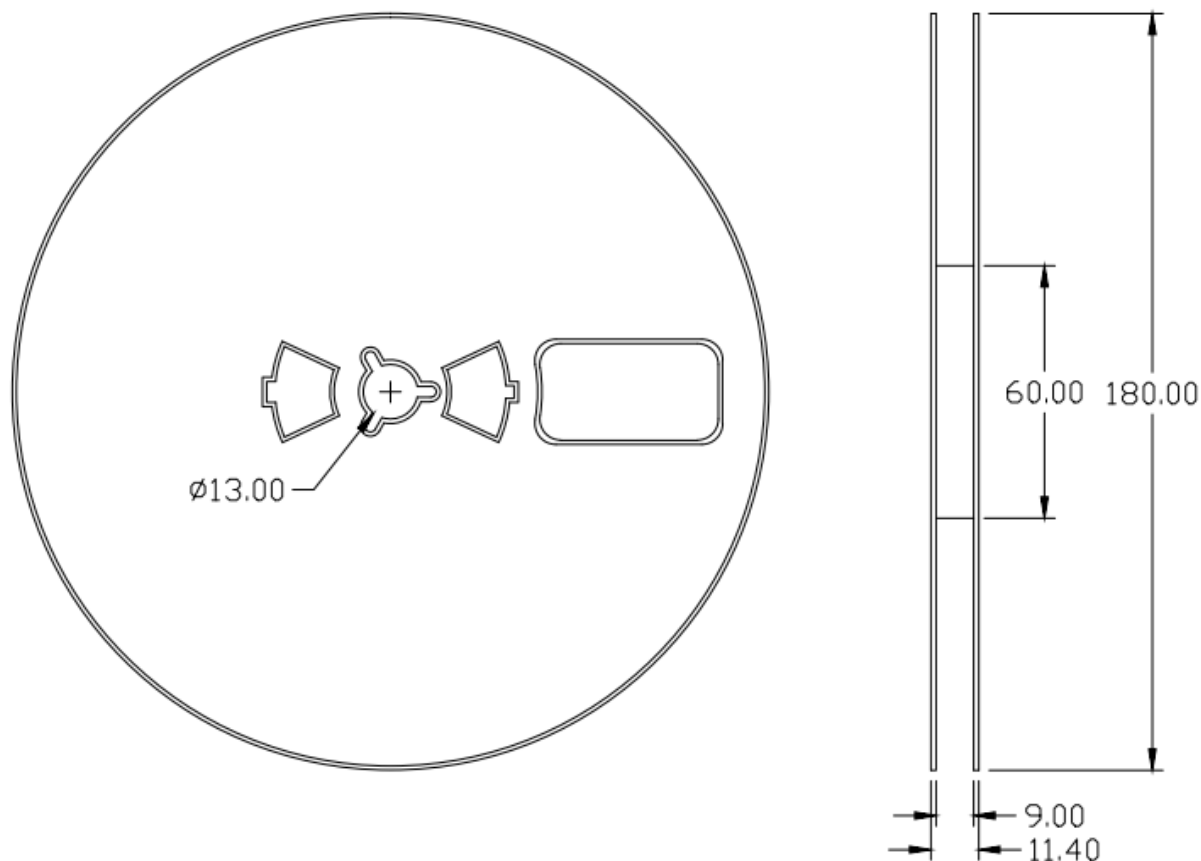
Part Number	Description	Quantity
IRP3010M20-B60	Tape & Reel	3000 pcs



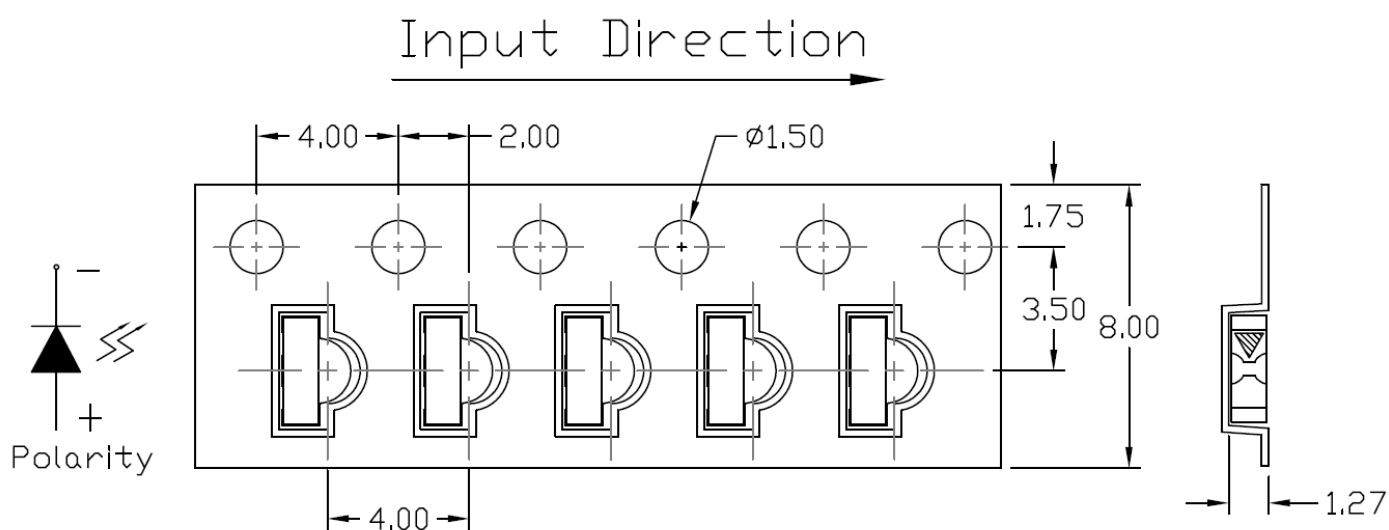
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Reel Dimension *All dimensions are in mm, unless otherwise stated*



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





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Label Form Specification

The label form is a rectangular box containing the following information:

- CT Micro International Corporation** logo and name.
- MADE IN CHINA** text.
- Part no.:** XXXXXXXXX
- Serial no.:** XX000XX
- Lot no.:** XXXXXXXXX
- Q'ty:** XXXX pcs
- Date Code:** 20XXXXX
- Bin Code:** X
- RoHS** logo.

Part no: CTM Production Number

Serial no: Production Number

Lot no: Lot number

Q'ty: Packing Quantity

Date Code: Manufacture Date

Bin Code: 1e Ranks

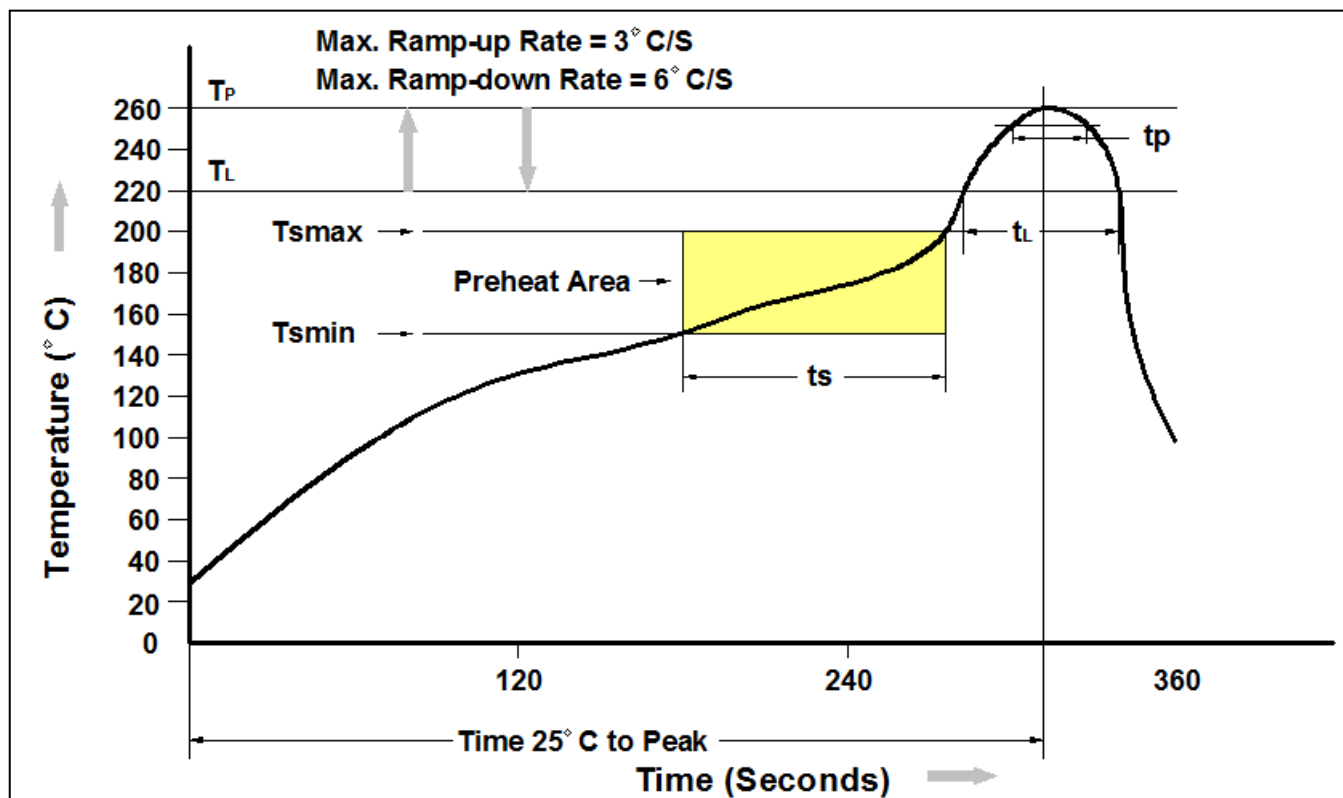
MADE IN CHINA: Production Place

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_{smin})	150°C
Temperature Max. (T_{smax})	200°C
Time (t_s) from (T_{smin} to T_{smax})	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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- 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.*