



**IRP3016W24-G0**

## **SMD Type 940nm Infrared Emitter**

### **Features**

- Small double-end package
- Viewing Angle =  $\pm 30^\circ$
- High reliability
- Good spectral matching to Si photo detector
- RoHS compliance

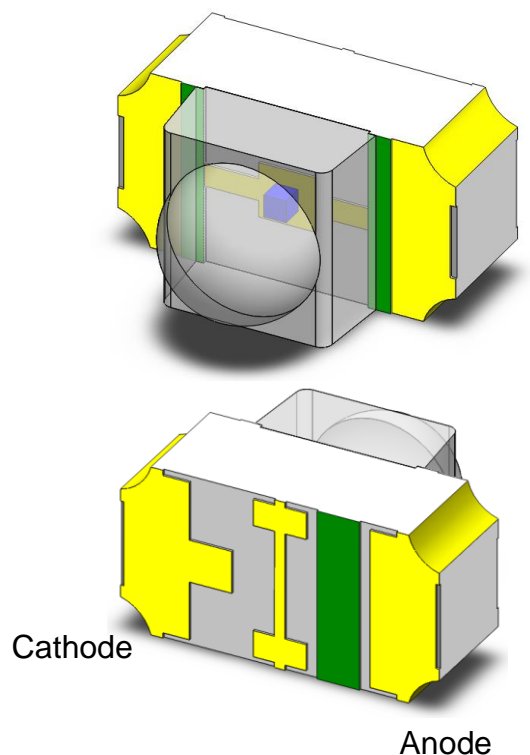
### **Applications**

- Infrared sensor
- Infrared Touch Panel Solutions

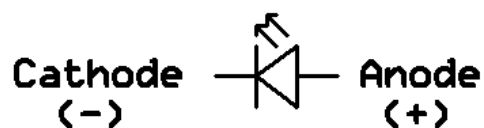
### **Description**

The IRP3016W24-G0 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**



**IRP3016W24-G0****SMD Type 940nm Infrared Emitter****Absolute Maximum Rating at 25°C**

<b>Symbol</b>	<b>Parameters</b>	<b>Ratings</b>	<b>Units</b>	<b>Notes</b>
I <sub>F</sub>	Continuous Forward Current	70	mA	
I <sub>FP</sub>	Peak Forward Current	0.7	A	1
V <sub>R</sub>	Reverse Voltage	5	V	
T <sub>opr</sub>	Operating Temperature	-40 ~ +85	°C	
T <sub>stg</sub>	Storage Temperature	-40 ~ +100	°C	
T <sub>sol</sub>	Soldering Temperature	260	°C	2
P <sub>D</sub>	Power Dissipation at(or below) 25°C Free Air Temperature	133	mW	
R <sub>THJA</sub>	Junction to Ambient Thermal Resistance	540	°C/W	

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

<b>Symbol</b>	<b>Parameters</b>	<b>Test Conditions</b>	<b>Min</b>	<b>Typ</b>	<b>Max</b>	<b>Units</b>	<b>Notes</b>
I <sub>e</sub>	Radiant Intensity	I <sub>F</sub> =20mA	5.5	6.4	10.5	mW/sr	3
		I <sub>F</sub> =70mA	-	22	-		
λ <sub>p</sub>	Peak Wavelength	I <sub>F</sub> =20mA	-	940	-	nm	
Δλ	Spectral Bandwidth	I <sub>F</sub> =20mA	-	30	-	nm	
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =20mA	-	±30	-	deg	

**Electrical Characteristics**

<b>Symbol</b>	<b>Parameters</b>	<b>Test Conditions</b>	<b>Min</b>	<b>Typ</b>	<b>Max</b>	<b>Units</b>	<b>Notes</b>
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =20mA	1.1	1.30	1.6	V	
		I <sub>F</sub> =70mA	1.2	1.37	1.9		
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	10	μA	

**Notes:**

1. I<sub>FP</sub> Conditions--Pulse Width ≤ 100μs and Duty ≤ 1%.
2. Soldering time ≤ 5 seconds.
3. I<sub>e</sub> Bin Rank : (Tolerance of Radiant Intensity : ±10%)

Bin Code	Gd	Hd
Min	5.5	7.5
Max	7.5	10.5



## Typical Characteristic Curves

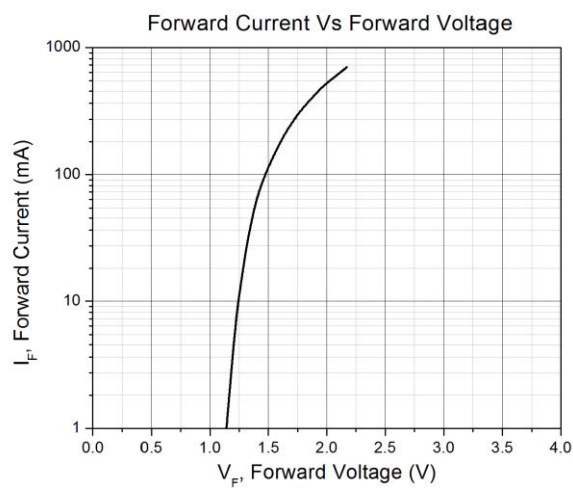


Figure 1

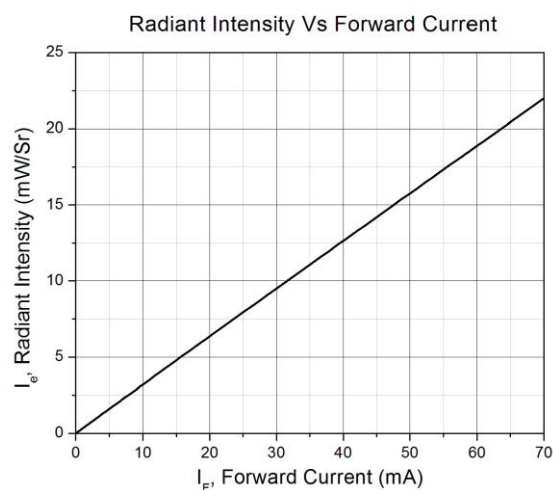


Figure 2

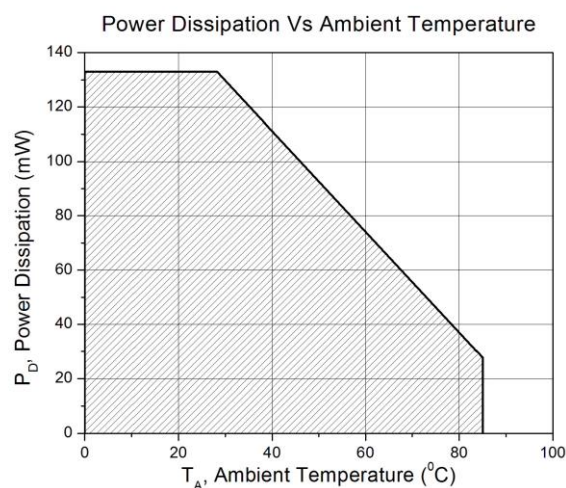


Figure 3

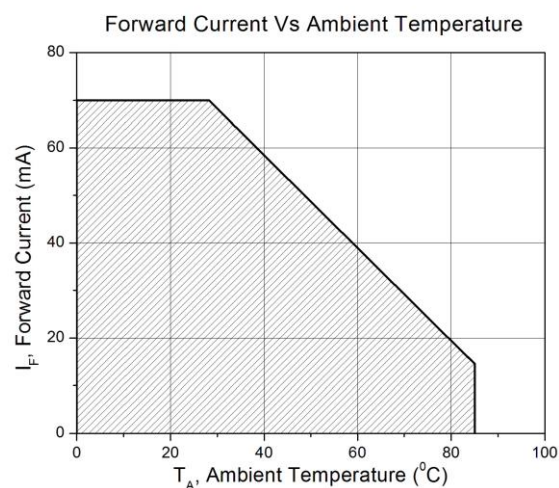


Figure 4

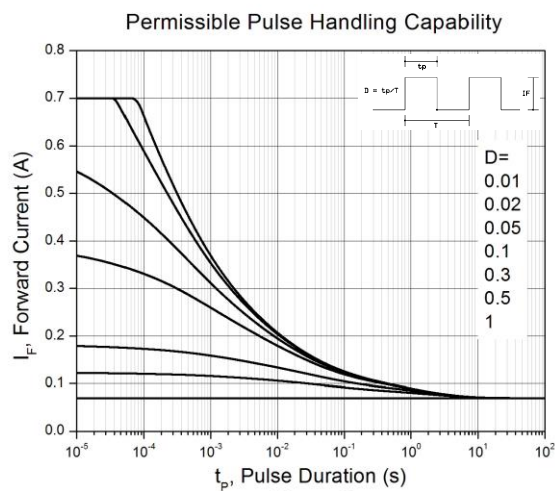


Figure 5

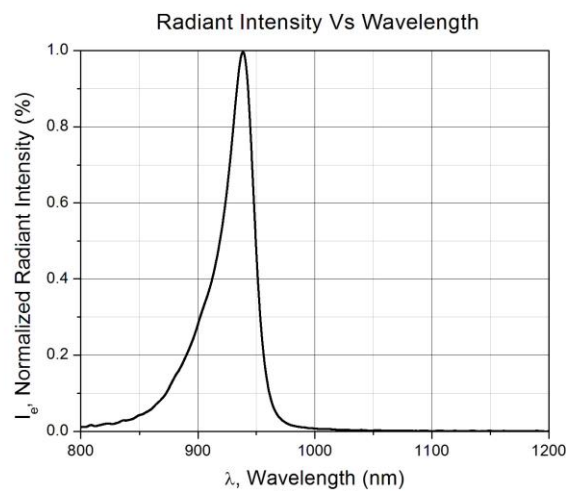
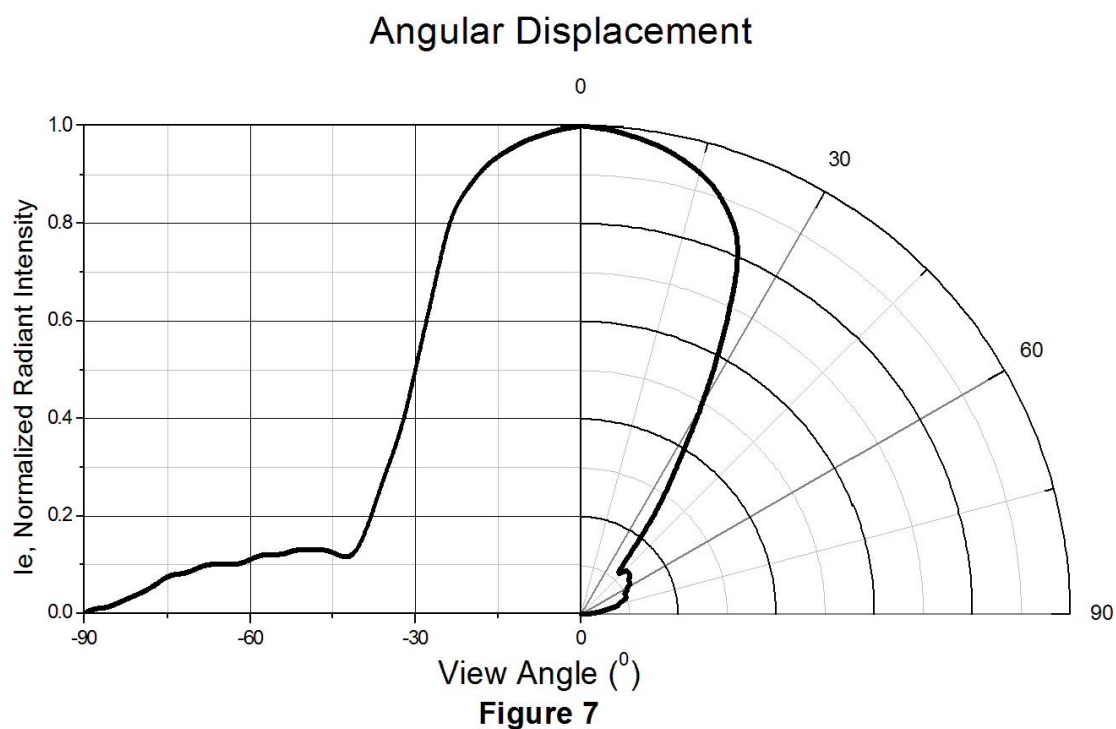


Figure 6



## Typical Characteristic Curves

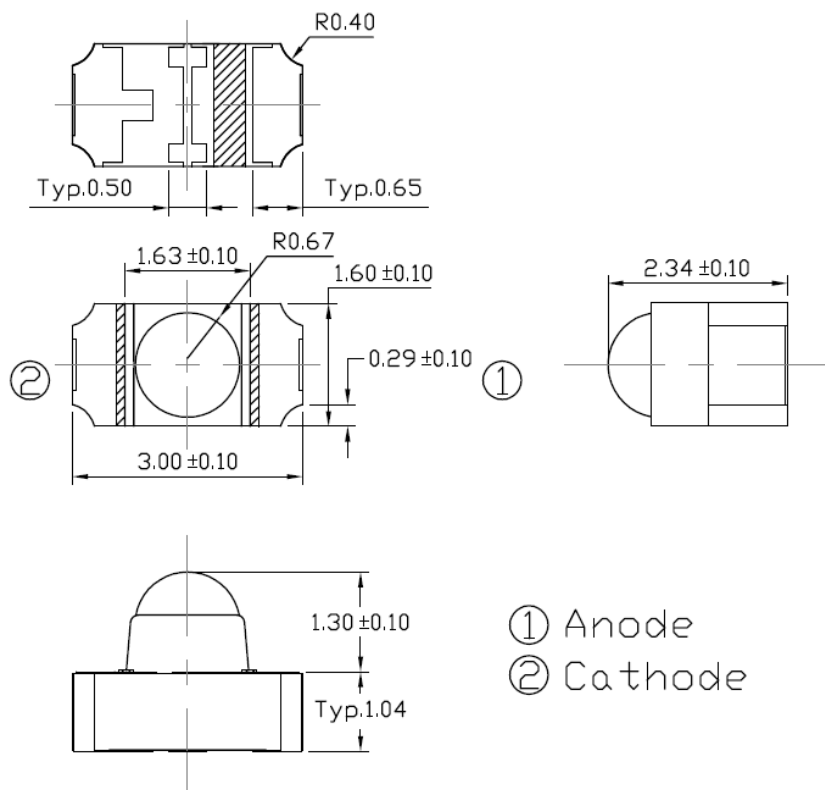




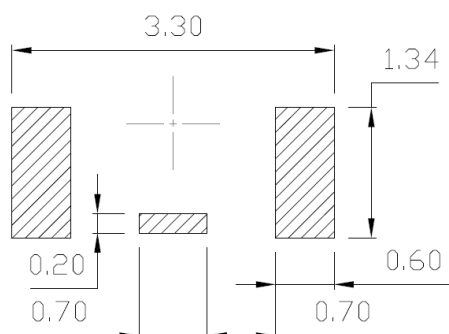
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## SMD Type 940nm Infrared Emitter

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



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



### Ordering Information

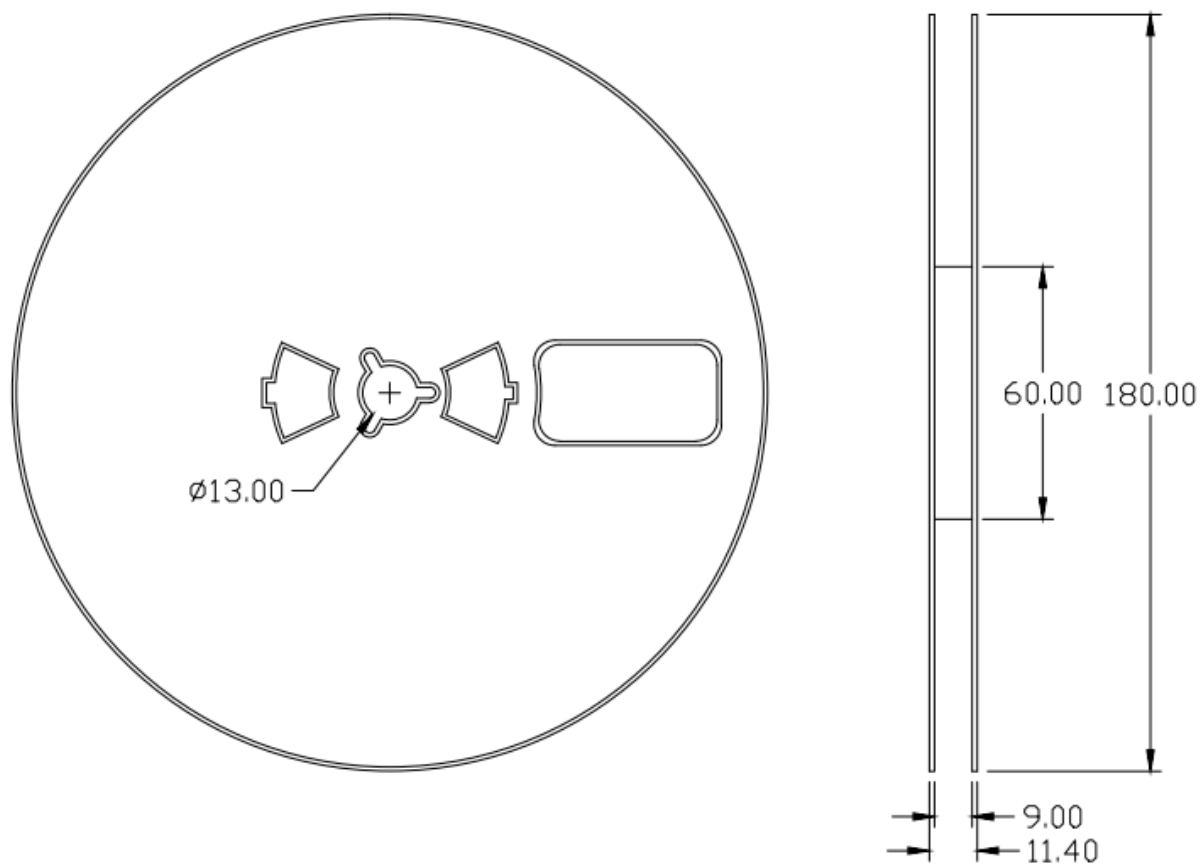
Part Number	Description	Quantity
IRP3016W24-G0	Tape & Reel	2500 pcs



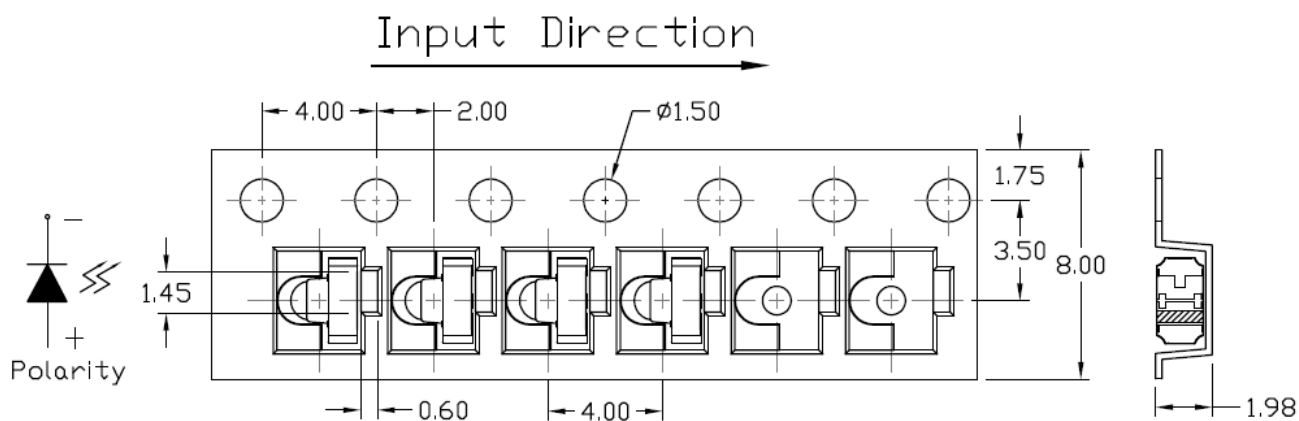
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## SMD Type 940nm Infrared Emitter

### 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

CT Micro  
International Corporation

MADE IN CHINA

Part no.: XXXXXXXXX  
Serial no.: XX000XX  
Lot no.: XXXXXXXXX  
Q'ty: XXXX pcs  
Date Code: 20XXXXX

Bin Code: X

Pb  
RoHS

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

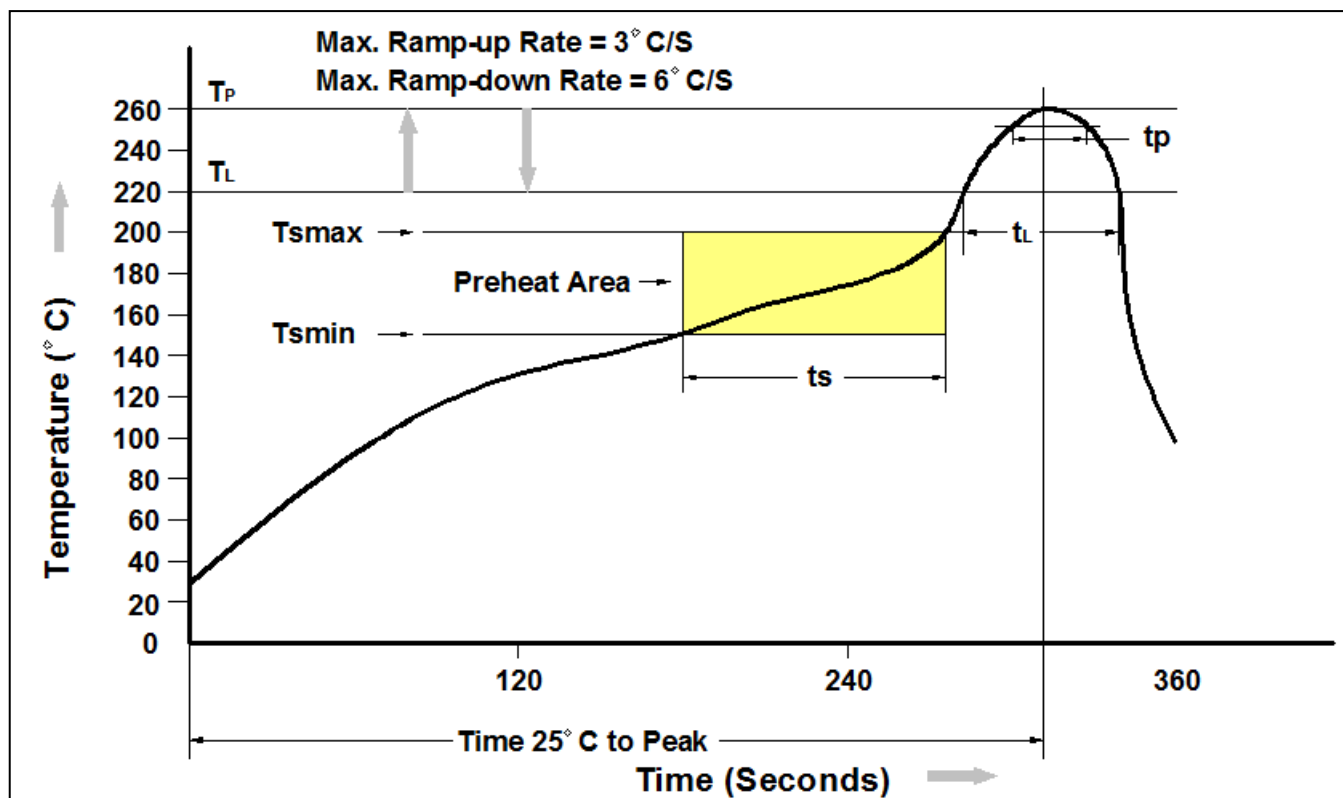
MADE IN CHINA: Production Place

## 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. (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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