IRP1608T08-B50

SMD Type 940nm Infrared Emitter

Features

- Small double-end package
- Viewing Angle = $\pm 75^0$
- High reliability
- Good spectral matching to Si photo detector
- RoHS compliance

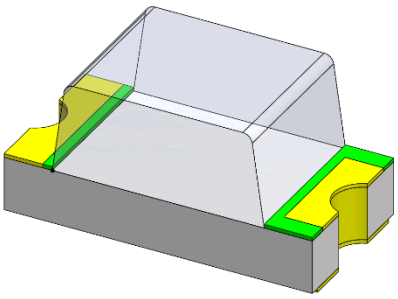
Description

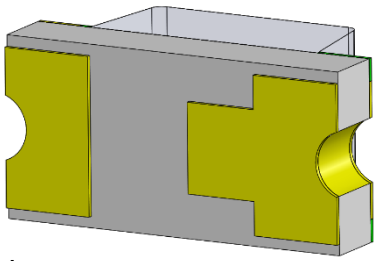
The IRP1608T08-B50 is a GaAlAs infrared LED housed in a miniature SMD package. The device has a peak wavelength of 940nm LED spectrally matched with phototransistor or photodiode.

Applications

- Infrared sensor

Package Outline

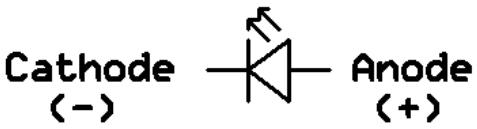




Anode

Cathode

Schematic



Absolute Maximum Rating at 25^{0}C

Symbol	*Parameters*	*Ratings*	*Units*	*Notes*
I_F	Continuous Forward Current	70	mA	
I_{FP}	Peak Forward Current	0.7	A	1
V_R	Reverse Voltage	5	V	
T_{opr}	Operating Temperature	-40 ~ +85	^{0}C	
T_{stg}	Storage Temperature	-40 ~ +100	^{0}C	
T_{sol}	Soldering Temperature	260	^{0}C	2
P_D	Power Dissipation at(or below) 25℃ 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*
Ie	Radiant Intensity	I_F=20mA	0.4	0.8	-	mW/sr	
		I_F=70mA	-	2.5	-		
λp	Peak Wavelength	I_F=20mA	-	940	-	nm	
Δλ	Spectral Bandwidth	I_F=20mA	-	50	-	nm	
θ1/2	Angle of Half Intensity	I_F=20mA	-	±75	-	deg	

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.

Typical Characteristic Curves

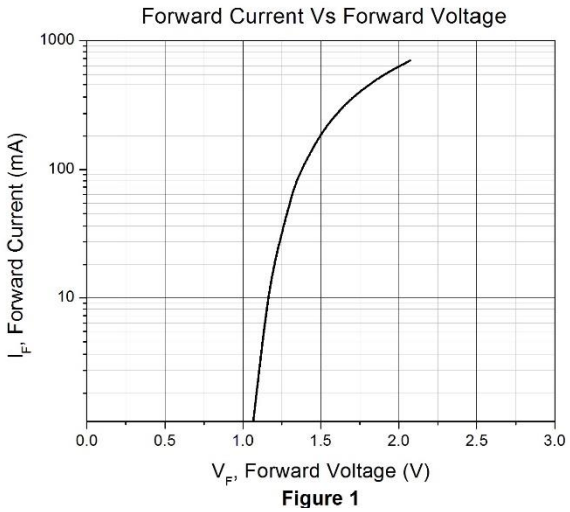


Figure 1

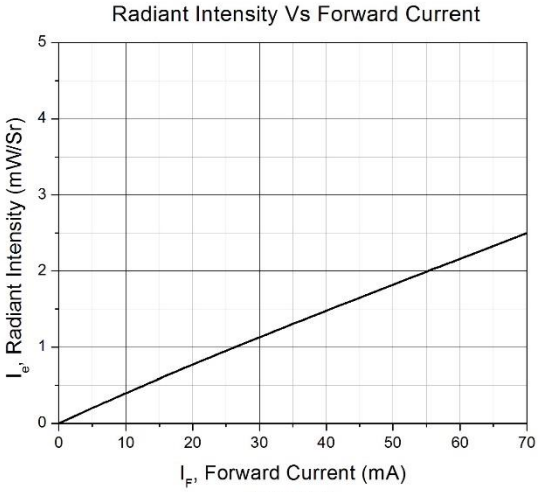


Figure 2

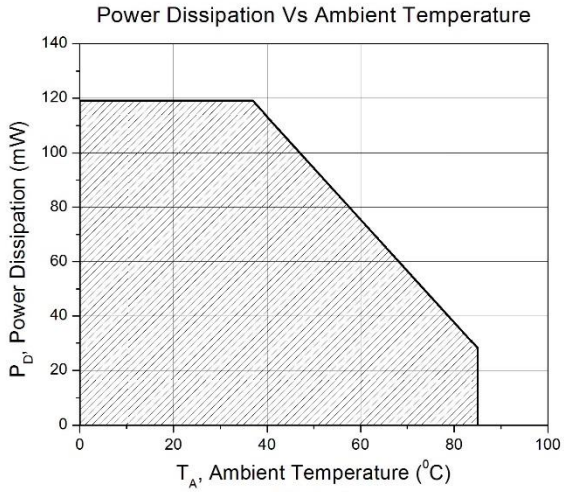


Figure 3

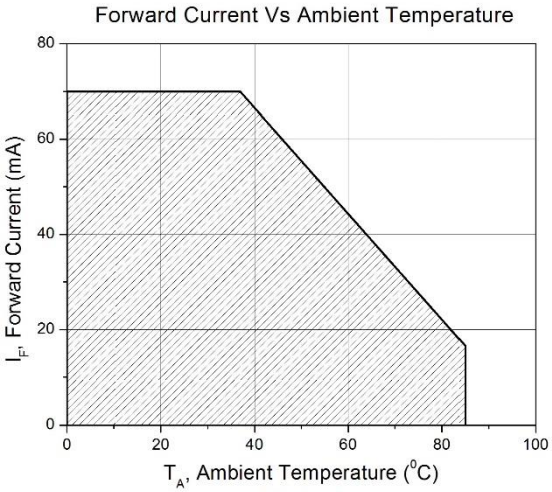


Figure 4

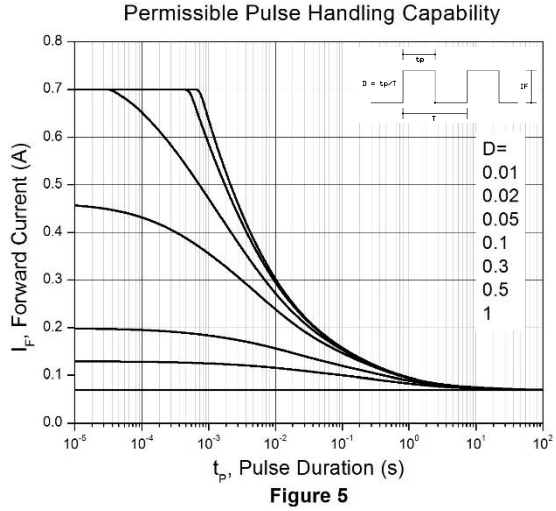


Figure 5

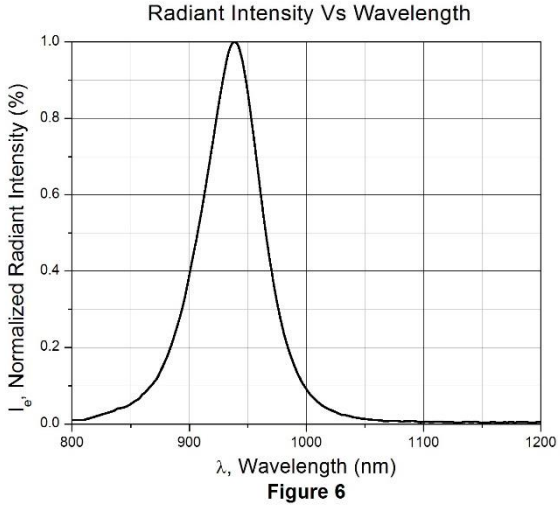


Figure 6

Typical Characteristic Curves

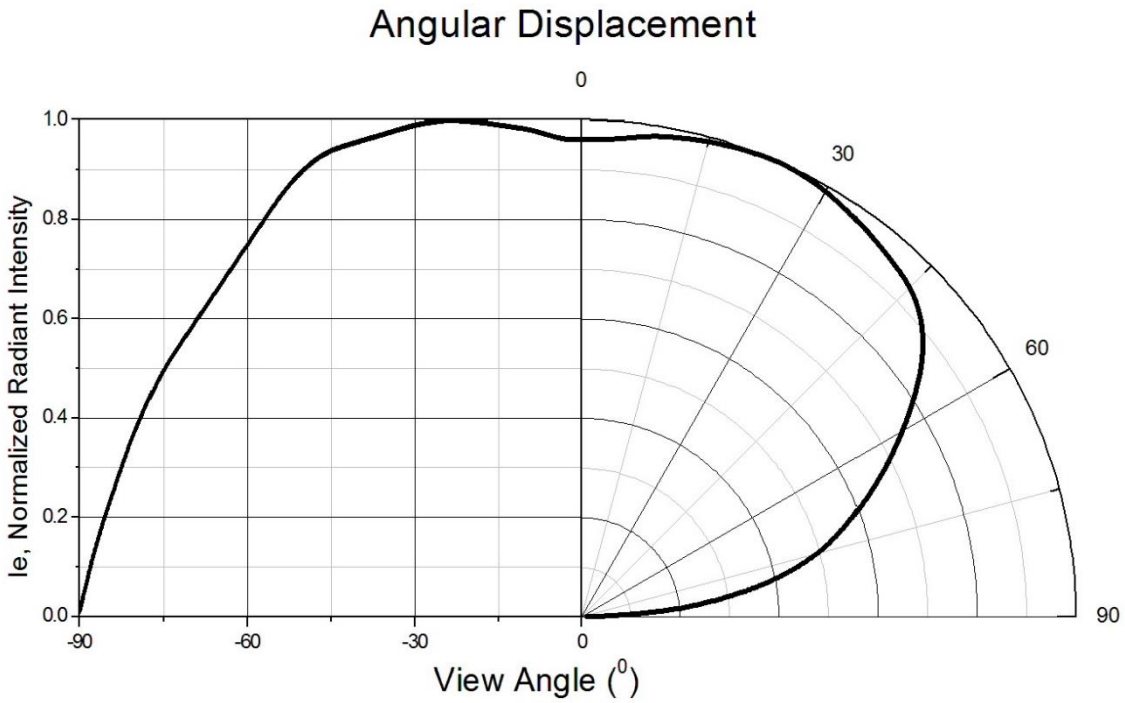
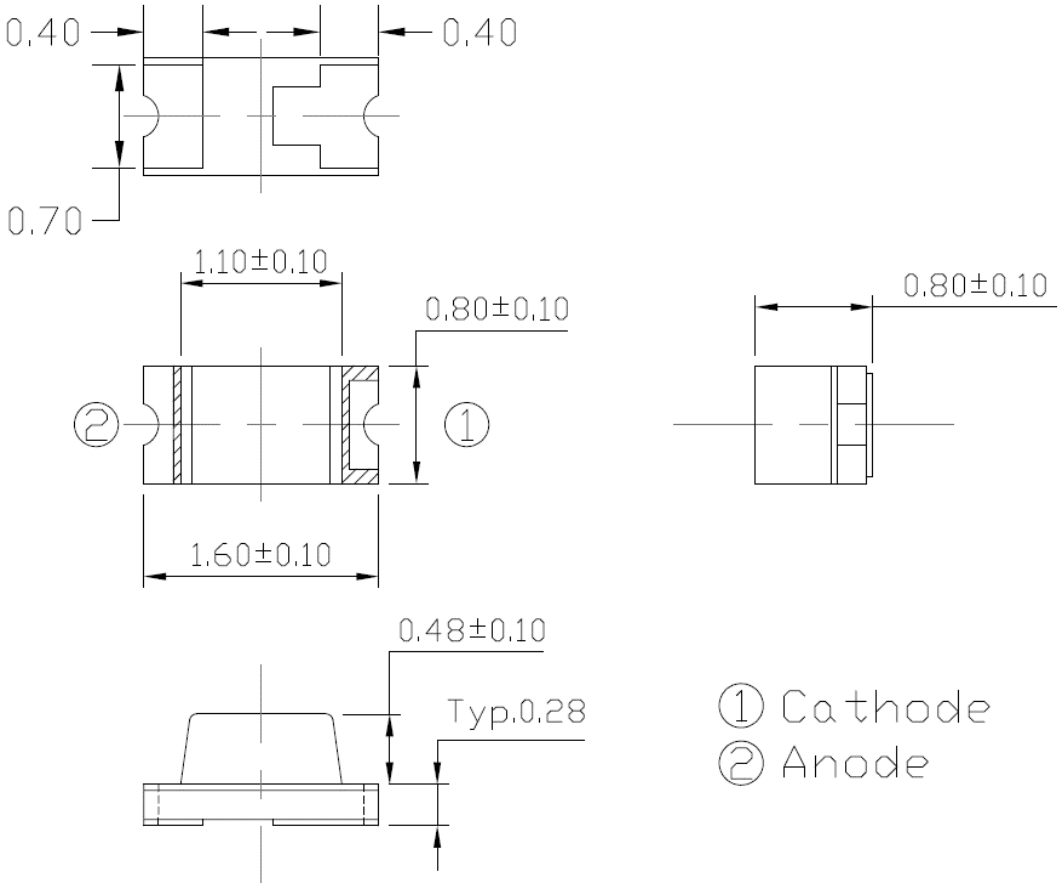
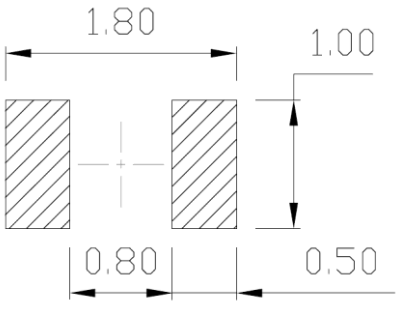


Figure 7

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



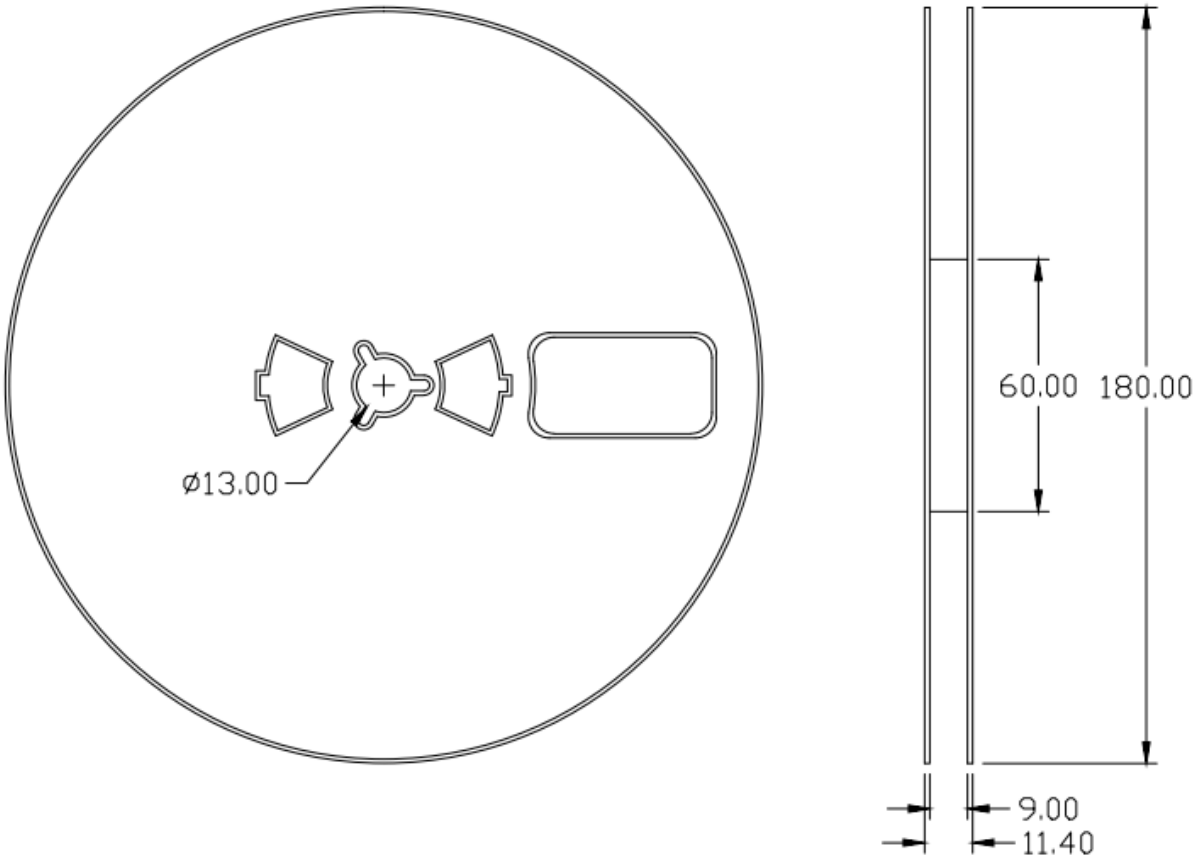
Recommended Soldering Mask *All dimensions are in mm, unless otherwise stated*



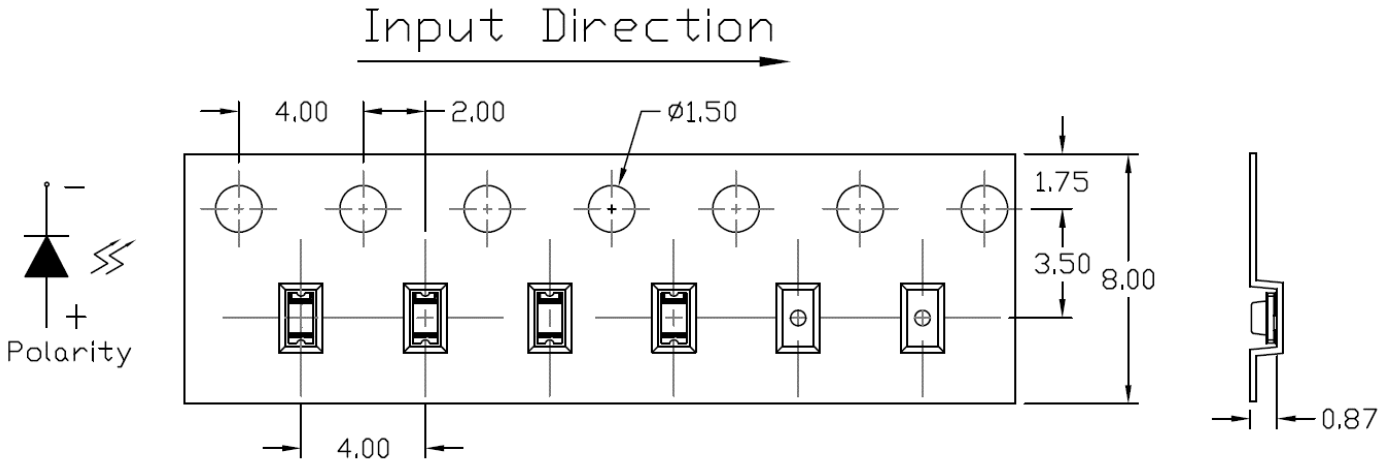
Ordering Information

Part Number	*Description*	*Quantity*
IRP1608T08-B50	Tape & Reel	4000 pcs

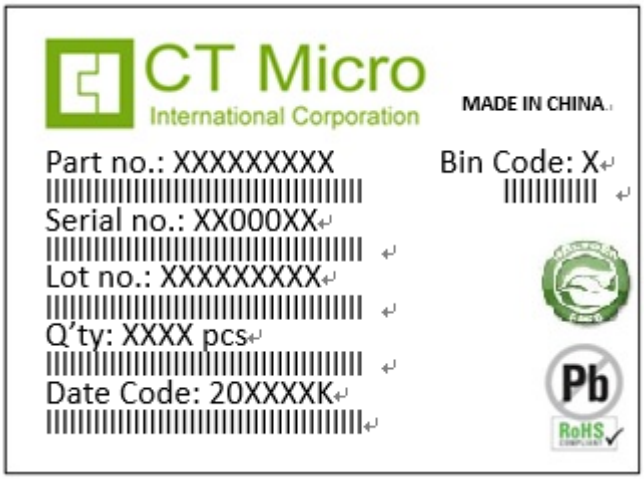
Reel Dimension *All dimensions are in mm, unless otherwise stated*



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

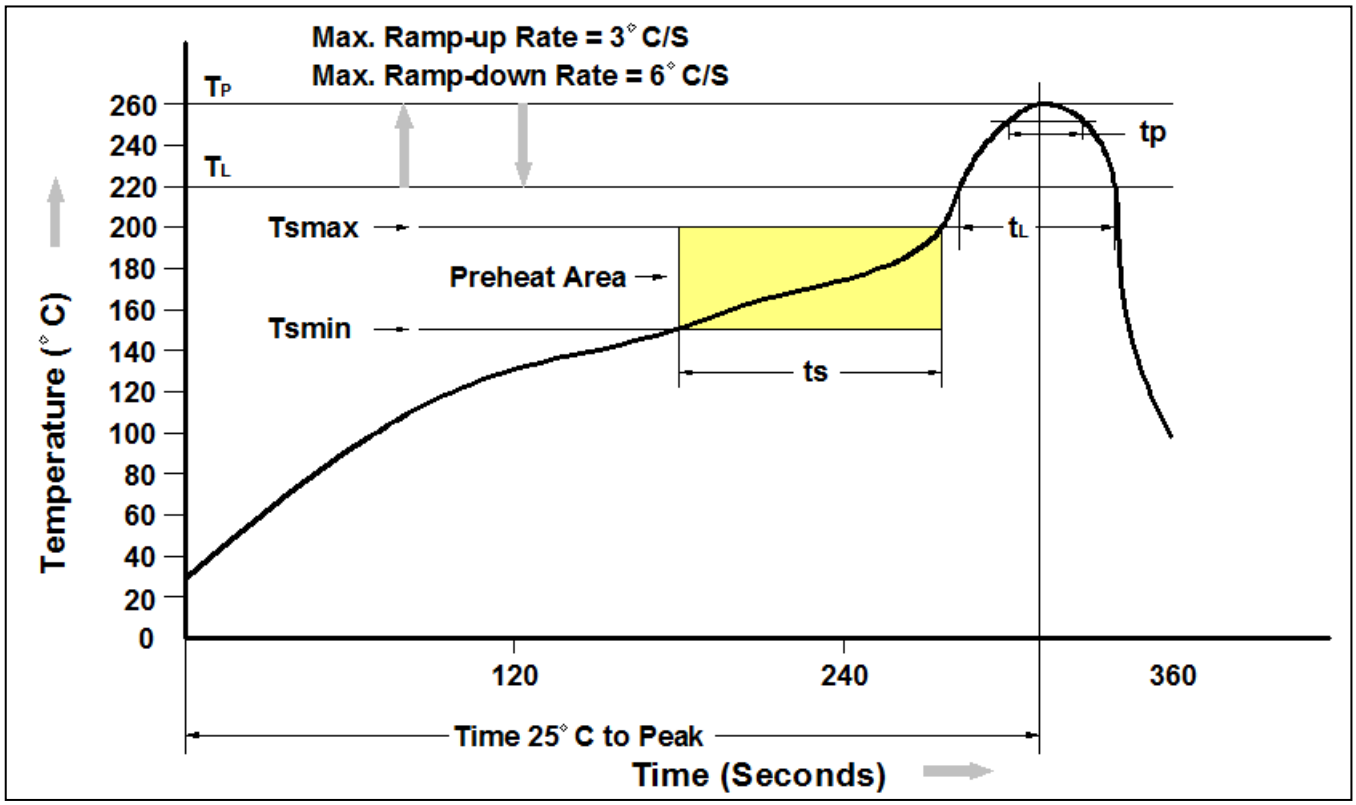
Bin Code: Ie Ranks

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 (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.*