SRP1615X07-B20

Dual Wavelength SMD Type Infrared Emitter

Features

- Small double-end package
- Dual peak wavelength.
  (SIR=880nm, R=620nm)
- High reliability
- Good spectral matching to Si photo detector
- RoHS compliance

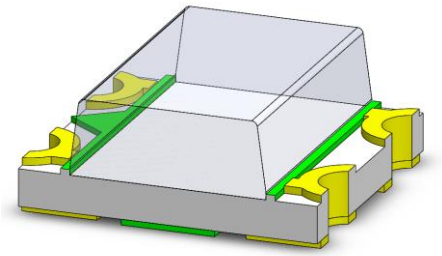
Description

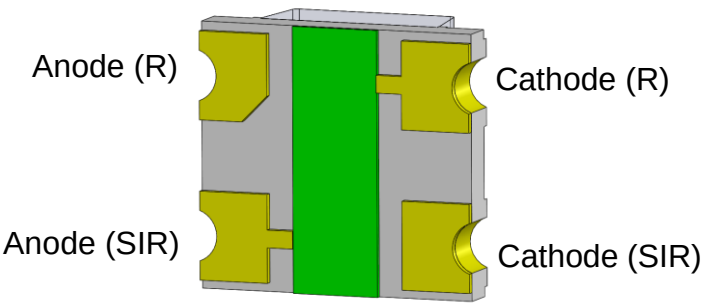
The SRP1615X07-B20 is a GaAlAs infrared LED housed in a miniature SMD package. The device has a peak wavelength of 880nm and 620nm LED spectrally matched with phototransistor or photodiode.

Applications

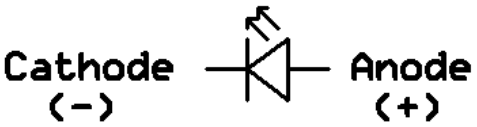
- Infrared sensor

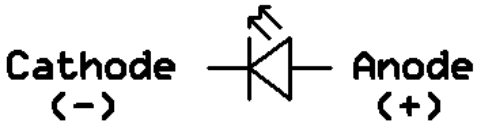
Package Outline





Schematic





Absolute Maximum Rating at 25^{0}C

Symbol	*Parameters*		*Ratings*	*Units*	*Notes*
I_F	Continuous Forward Current	$SIR_{(880)}$	70	mA	
		$R_{(620)}$	50		
I_{FP}	Peak Forward Current	$SIR_{(880)}$	0.7	A	1
		$R_{(620)}$	0.1		
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	$SIR_{(880)}$	140	mW	
		$R_{(620)}$	160		

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

Optical Characteristics ($SIR_{(880)}$)

Symbol	*Parameters*	*Test Conditions*	*Min*	*Typ*	*Max*	*Units*	*Notes*
Ie	Radiant Intensity	I_F=20mA	1.4	2.4	-	mW/sr	
		I_F=70mA	-	8.0	-		
λp	Peak Wavelength	I_F=20mA	-	880	-	nm	
Δλ	Spectral Bandwidth	I_F=20mA	-	30	-	nm	
θ1/2	Angle of Half Intensity	I_F=20mA	-	±60	-	deg	

Optical Characteristics ($R_{(620)}$)

Symbol	*Parameters*	*Test Conditions*	*Min*	*Typ*	*Max*	*Units*	*Notes*
Ie	Radiant Intensity	I_F=20mA	1.4	2.6	-	mW/sr	
		I_F=50mA	-	6.0	-		
Iv	Luminous Intensity	I_F=20mA	-	730	-	mcd	
λp	Peak Wavelength	I_F=20mA	-	620	-	nm	
λd	Dominant Wavelength	I_F=20mA	-	614	-	nm	
Δλ	Spectral Bandwidth	I_F=20mA	-	15	-	nm	
θ1/2	Angle of Half Intensity	I_F=20mA	-	±60	-	deg	

Electrical Characteristics ($SIR_{(880)}$)

Symbol	*Parameters*	*Test Conditions*	*Min*	*Typ*	*Max*	*Units*	*Notes*
V_F	Forward Voltage	I_F=20mA	1.20	1.40	1.7	V	
		I_F=70mA	1.30	1.55	2.0		
I_R	Reverse Current	V_R=5V	-	-	10	μA	

Electrical Characteristics ($R_{(620)}$)

Symbol	*Parameters*	*Test Conditions*	*Min*	*Typ*	*Max*	*Units*	*Notes*
V_F	Forward Voltage	I_F=20mA	1.8	2.2	2.6	V	
		I_F=50mA	2.3	2.7	3.2		
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

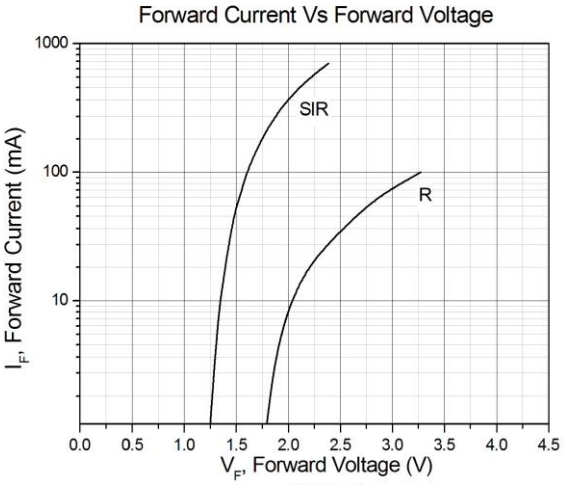


Figure 1

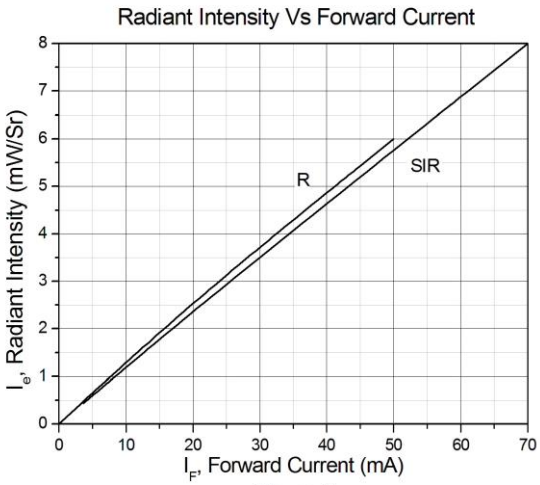


Figure 2

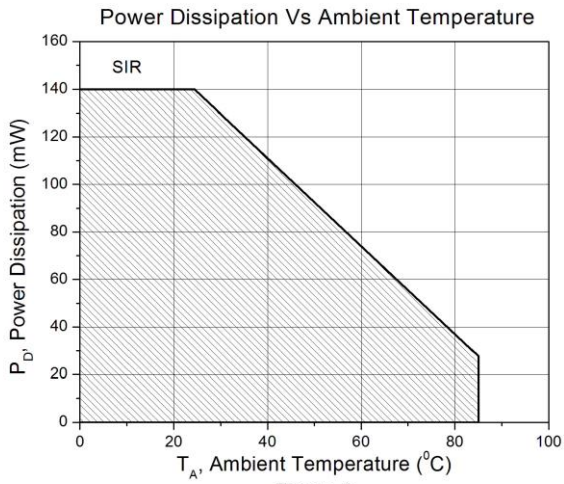


Figure 3

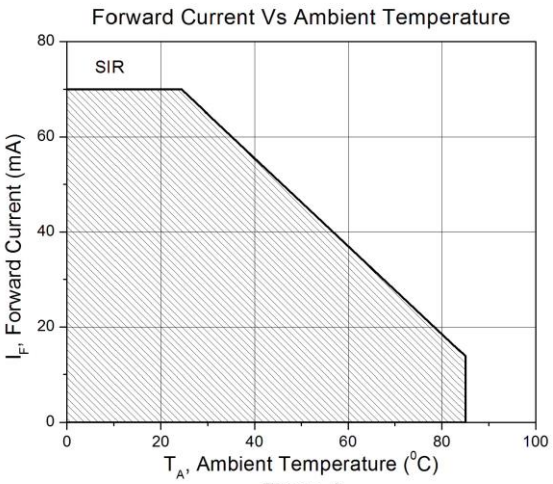


Figure 4

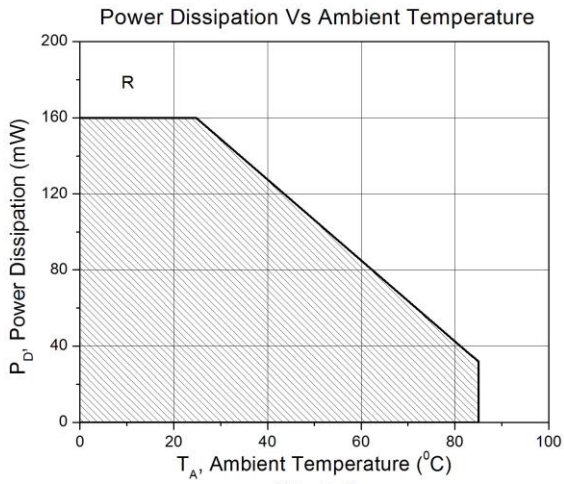


Figure 5

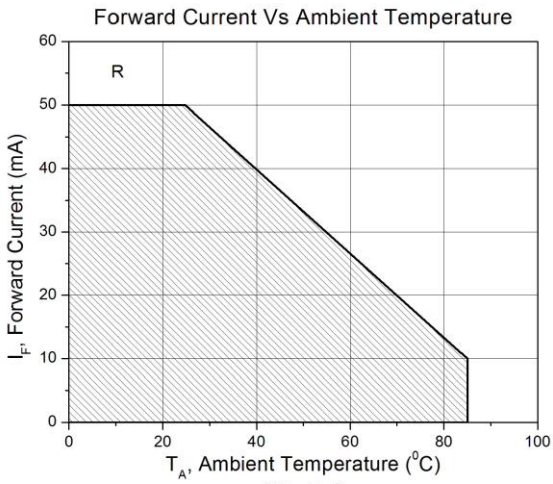


Figure 6

Typical Characteristic Curves

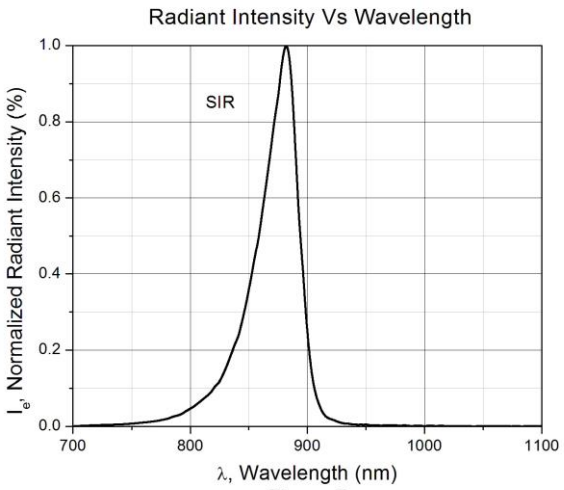


Figure 7

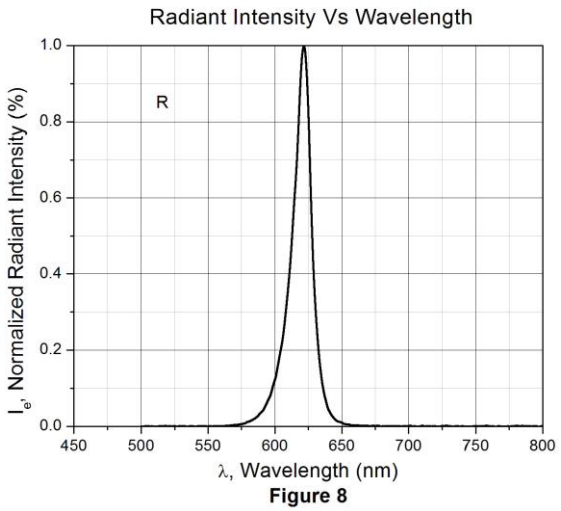


Figure 8

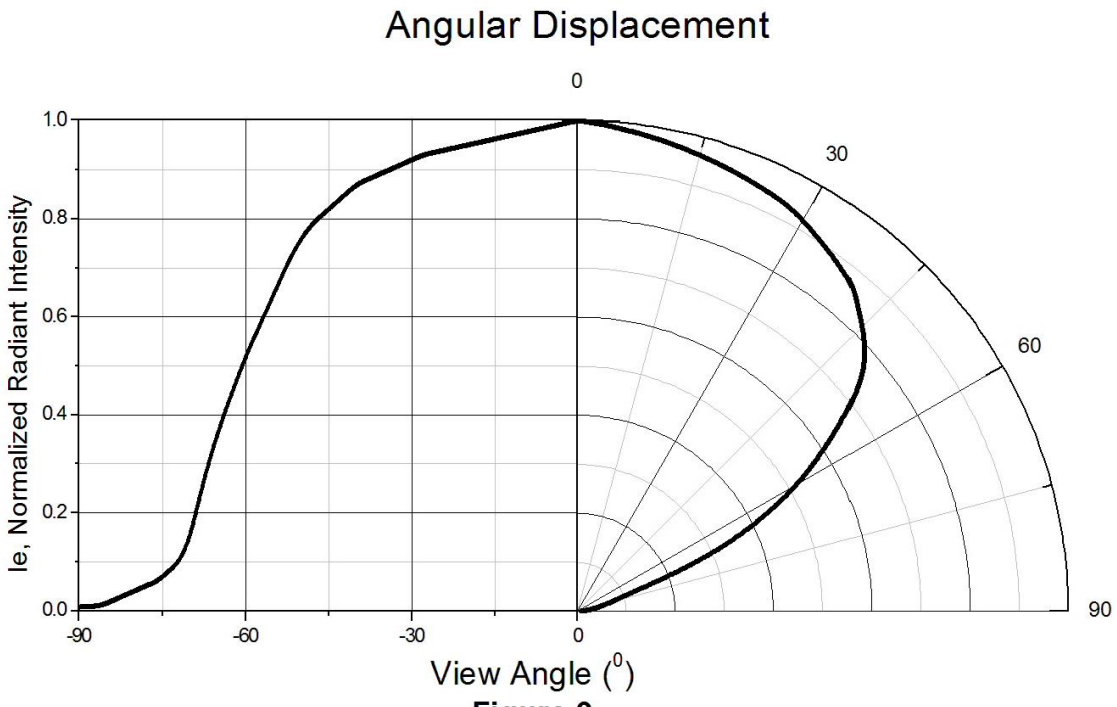
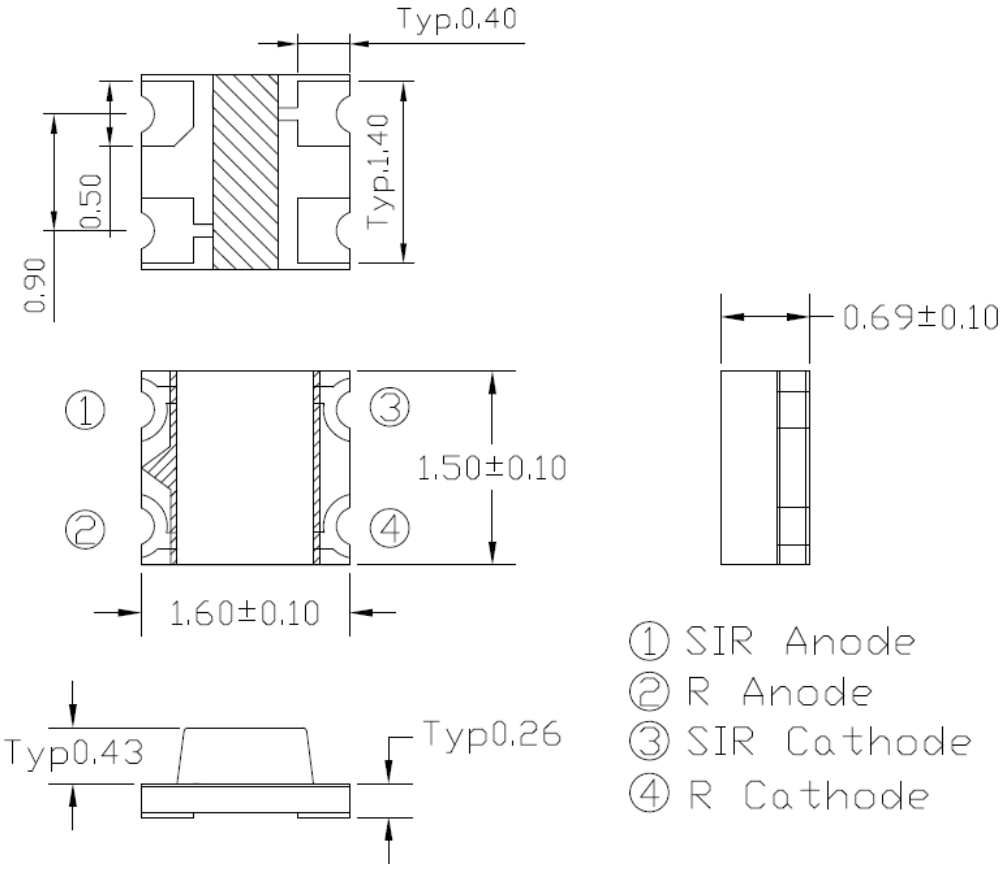
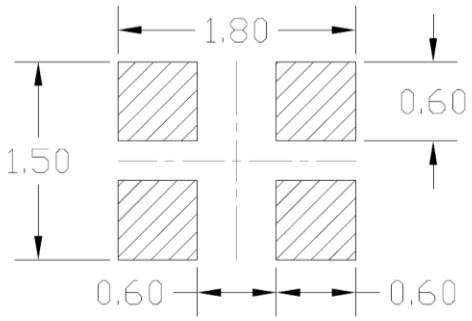


Figure 9

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



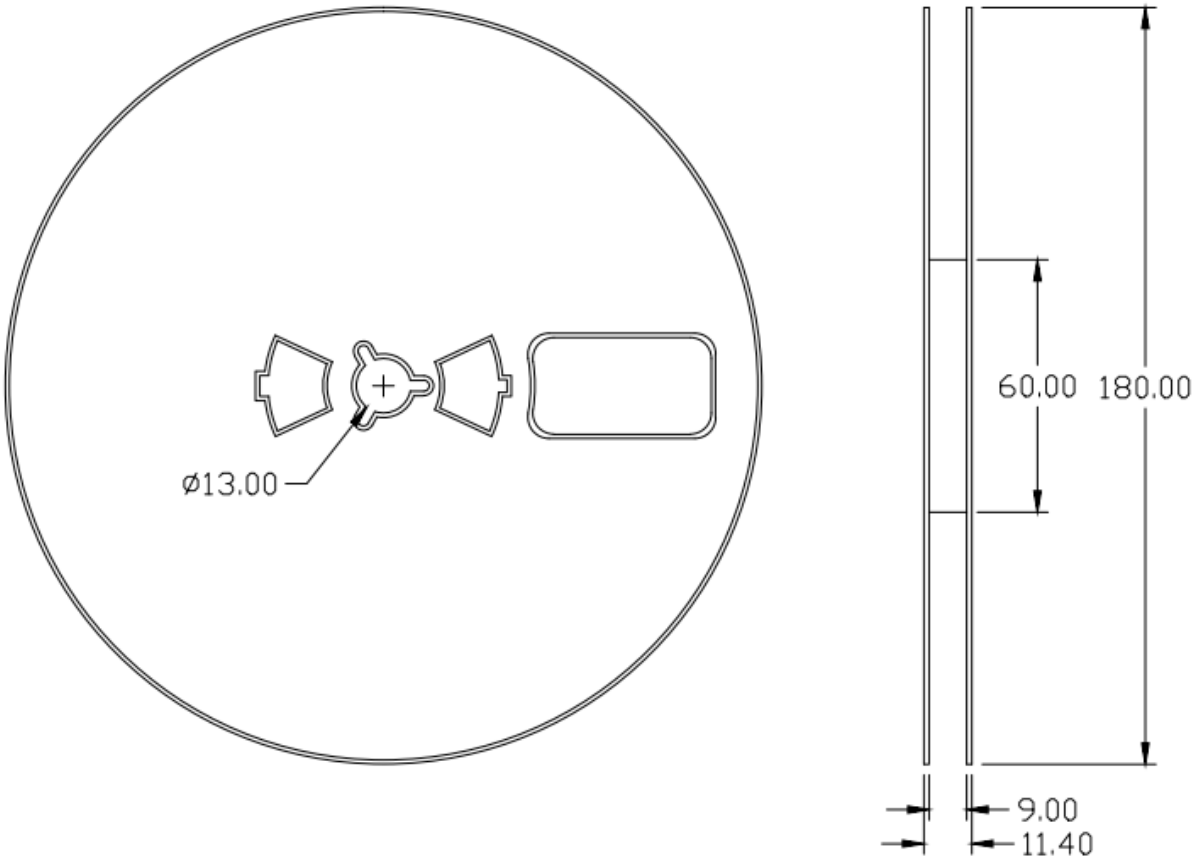
Recommended Soldering Mask *All dimensions are in mm, unless otherwise stated*



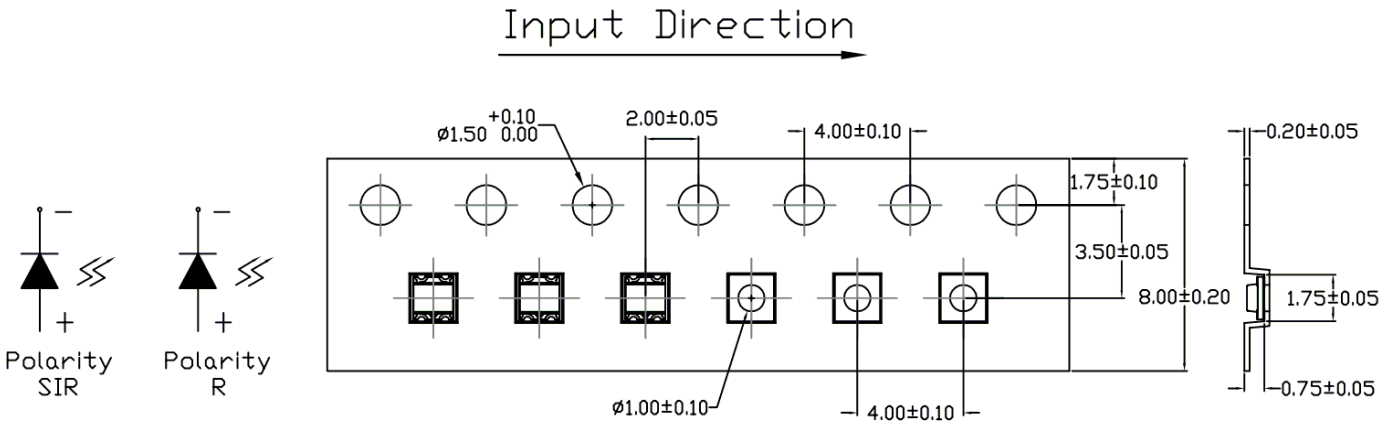
Ordering Information

Part Number	*Description*	*Quantity*
SRP1615X07-B20	Tape & Reel	4000 Pcs

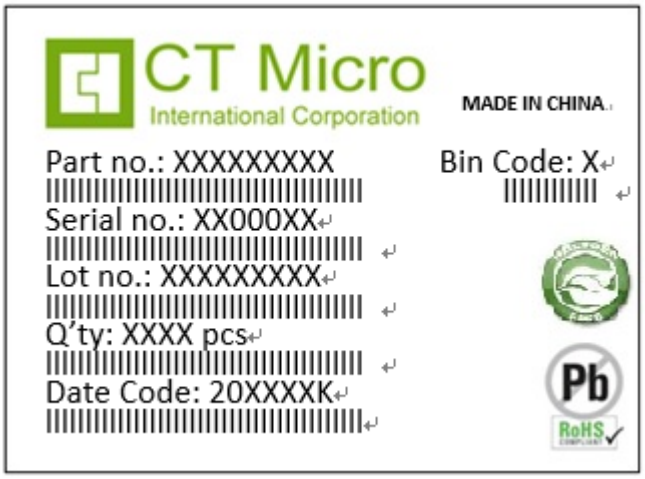
Reel Dimension *All dimensions are in mm, unless otherwise stated*



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

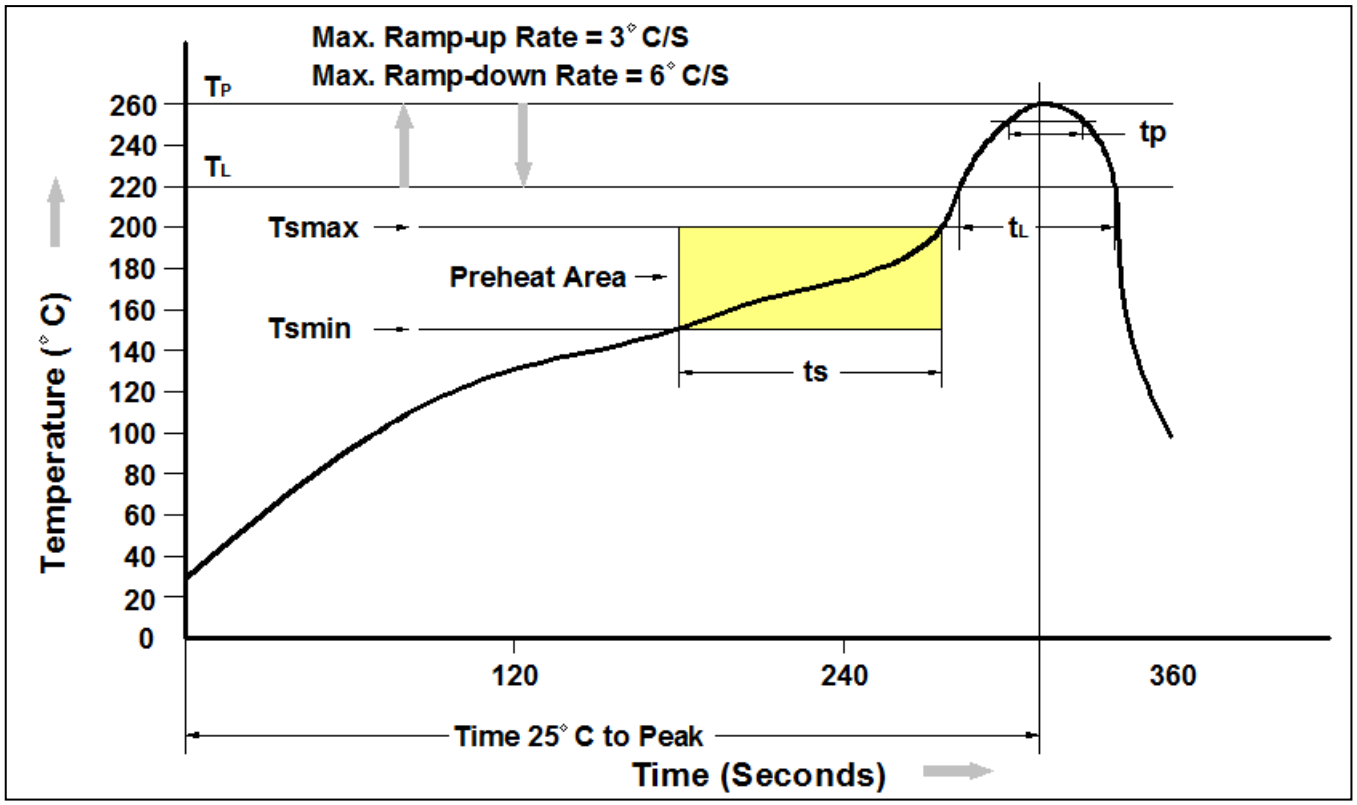
Bin Code: Ie Ranks

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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