



Dual Wavelength SMD Type Infrared Emitter

Features

- Small double-end package
- Dual peak wavelength (IR=940nm, G=520nm)
- High reliability
- Good spectral matching to Si photo detector
- RoHS compliance

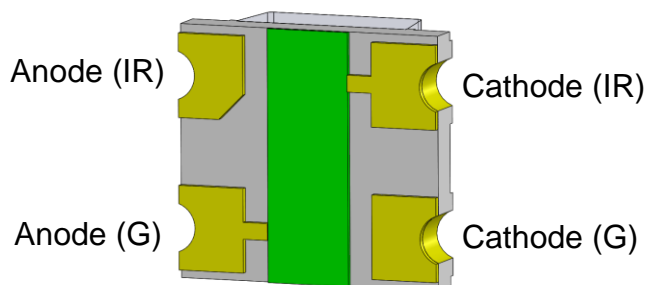
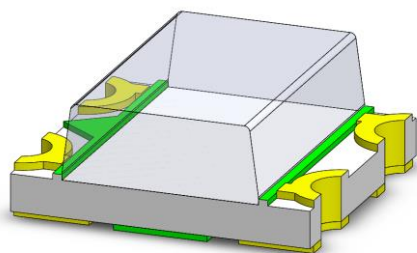
Applications

- Infrared sensor

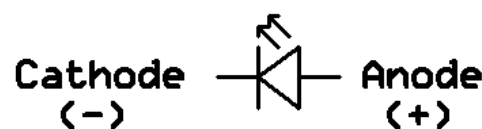
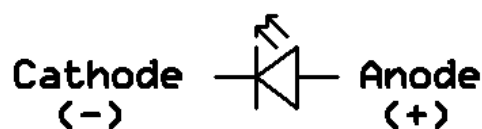
Description

The GIRP1615X07-B20 is a double LED housed in a miniature SMD package. The device has a peak wavelength of 940nm and 520nm LED spectrally matched with phototransistor or photodiode.

Package Outline



Schematic





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Absolute Maximum Rating at 25°C

Symbol	Parameters		Ratings	Units	Notes
I _F	Continuous Forward Current	IR ₍₉₄₀₎	70	mA	
		G ₍₅₂₀₎	20		
I _{FP}	Peak Forward Current	IR ₍₉₄₀₎	0.7	A	1
		G ₍₅₂₀₎	0.1		
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	IR ₍₉₄₀₎	119	mW	
		G ₍₅₂₀₎	66		

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

Optical Characteristics (IR₍₉₄₀₎)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _e	Radiant Intensity	I _F =20mA	1.2	2.0	-	mW/sr	
		I _F =70mA	-	7.0	-		
λ _p	Peak Wavelength	I _F =20mA	-	940	-	nm	
Δλ	Spectral Bandwidth	I _F =20mA	-	30	-	nm	
θ _{1/2}	Angle of Half Intensity	I _F =20mA	-	±60	-	deg	

Optical Characteristics (G₍₅₂₀₎)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _v	Luminous Intensity	I _F =20mA	600	1100	-	mcd	
λ _p	Peak Wavelength	I _F =20mA	-	520	-	nm	
λ _d	Dominant Wavelength	I _F =20mA	-	525	-	nm	
Δλ	Spectral Bandwidth	I _F =20mA	-	30	-	nm	
θ _{1/2}	Angle of Half Intensity	I _F =20mA	-	±60	-	deg	



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Electrical Characteristics (IR₍₉₄₀₎)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =20mA	1.0	1.27	1.5	V	
		I _F =70mA	1.1	1.40	1.7		
I _R	Reverse Current	V _R =5V	-	-	10	μA	

Electrical Characteristics (G₍₅₂₀₎)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =20mA	2.2	2.7	3.3	V	
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

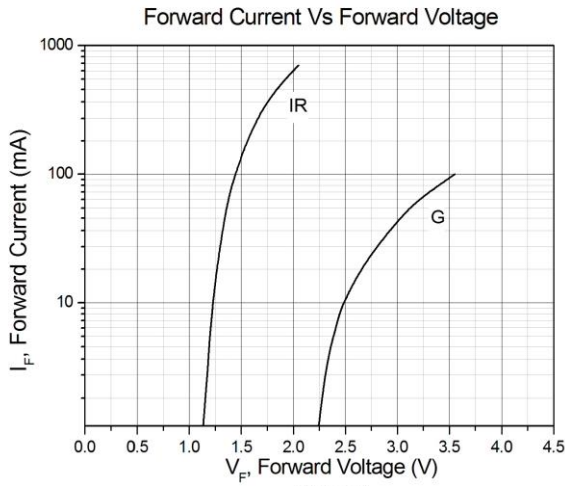


Figure 1

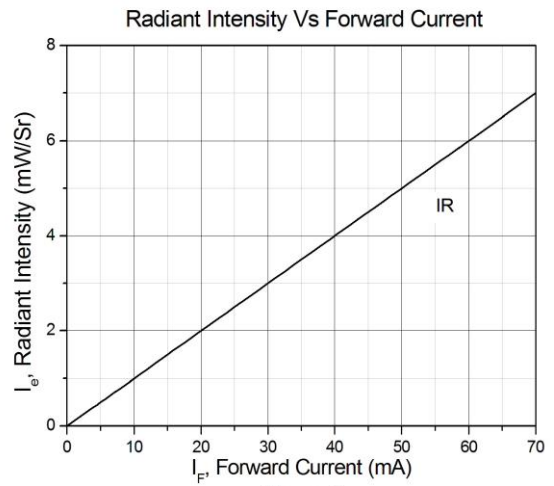


Figure 2

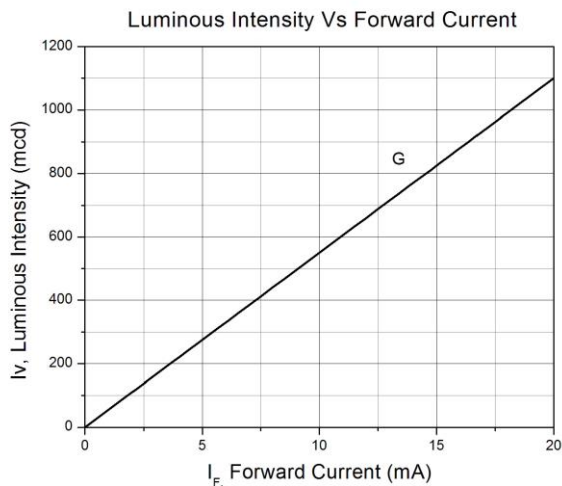


Figure 3

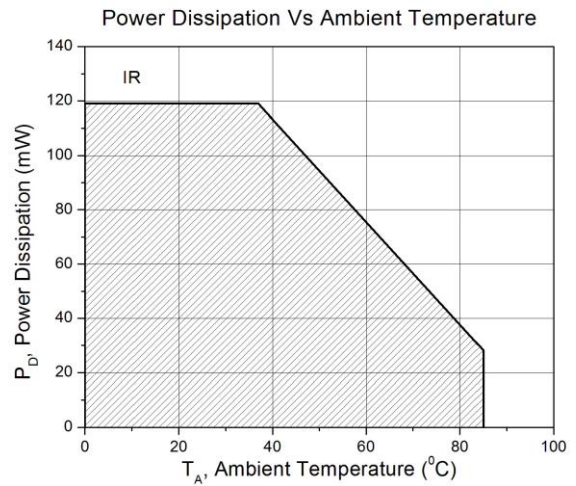


Figure 4

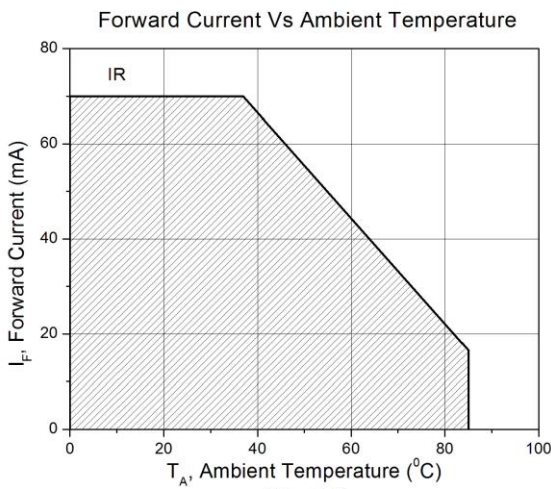


Figure 5

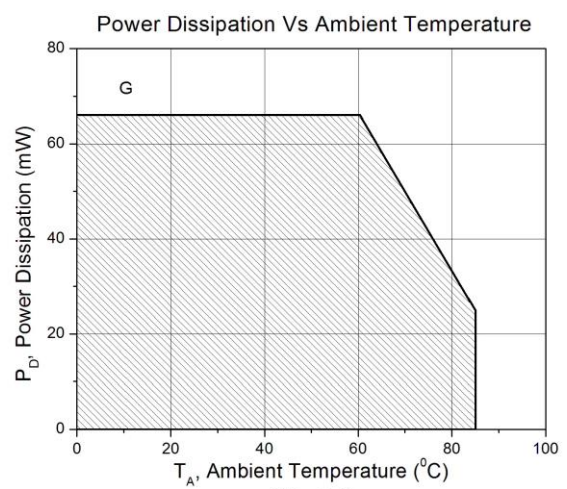
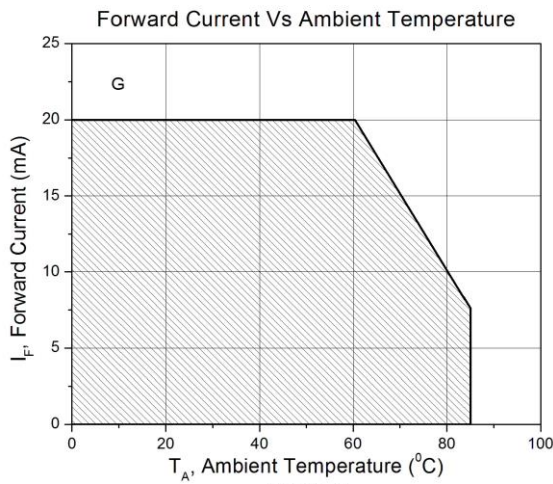


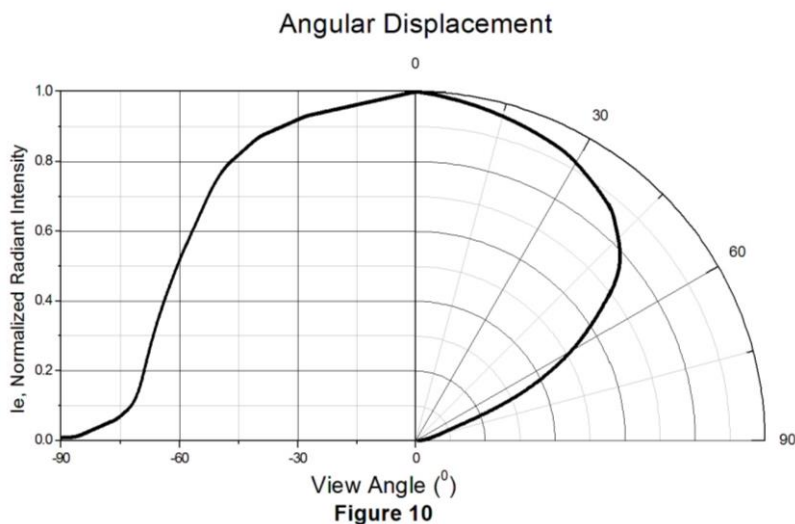
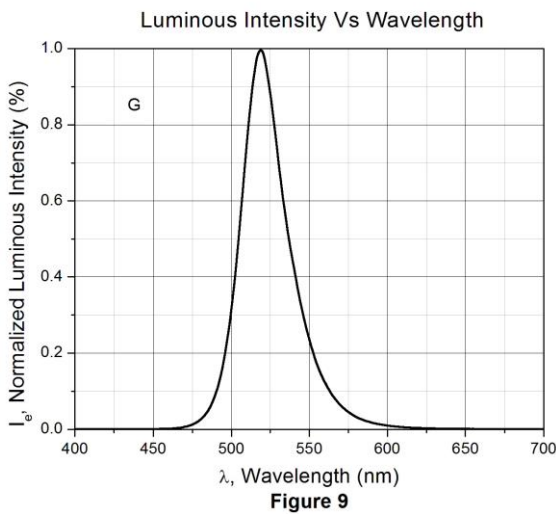
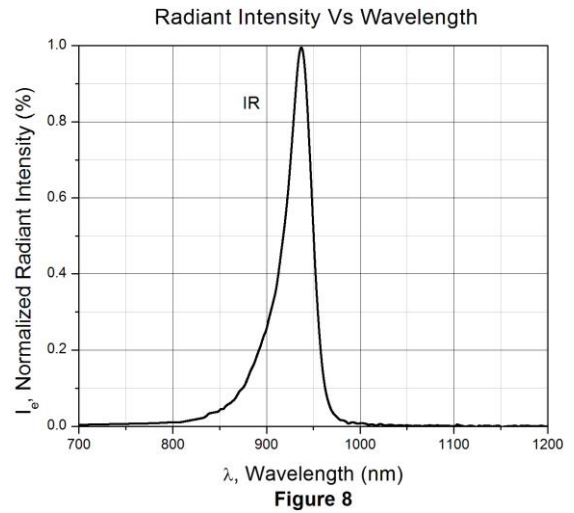
Figure 6



Typical Characteristic Curves



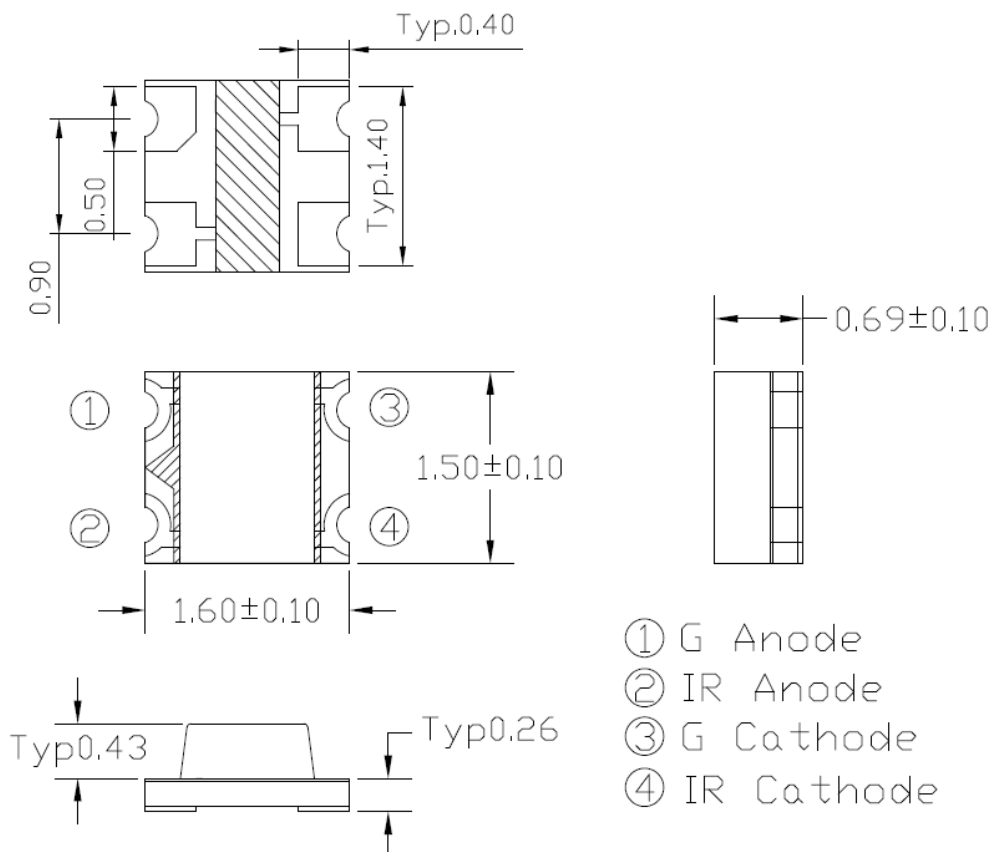
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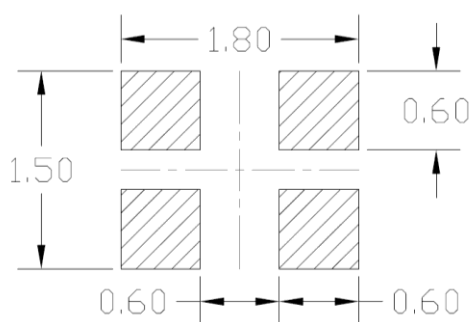


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Package Dimension *All dimensions are in mm, unless otherwise stated*



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

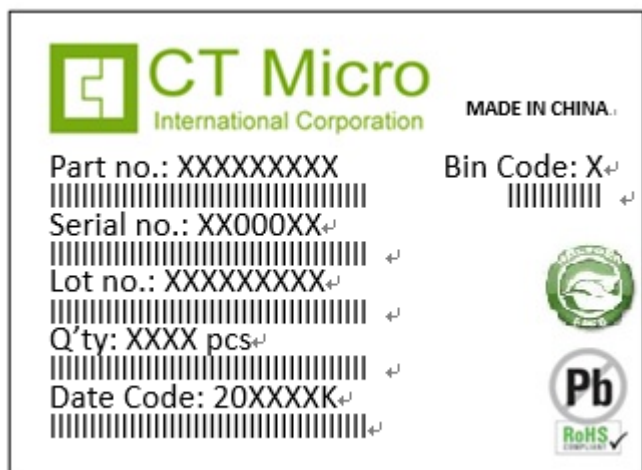


Ordering Information

Part Number	Description	Quantity
GIRP1615X07-B20	Tape & Reel	4000 Pcs



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: 1e Ranks
 MADE IN CHINA: Production Place

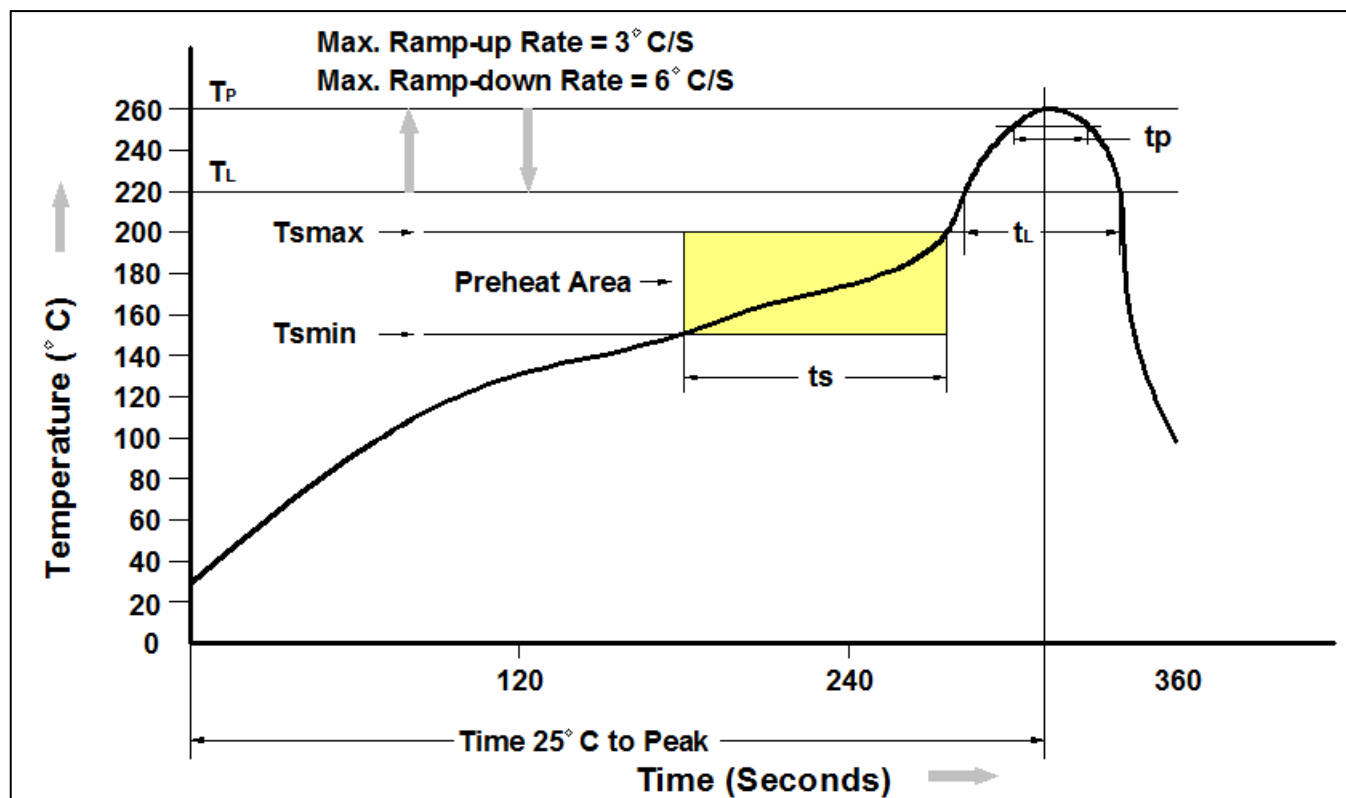
Storage Condition

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.



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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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