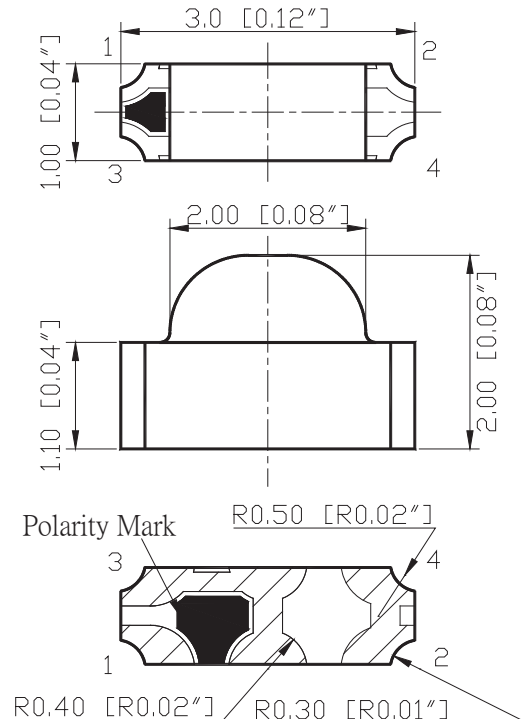


**SPECIFICATIONS** **CSRB124G2R2C**

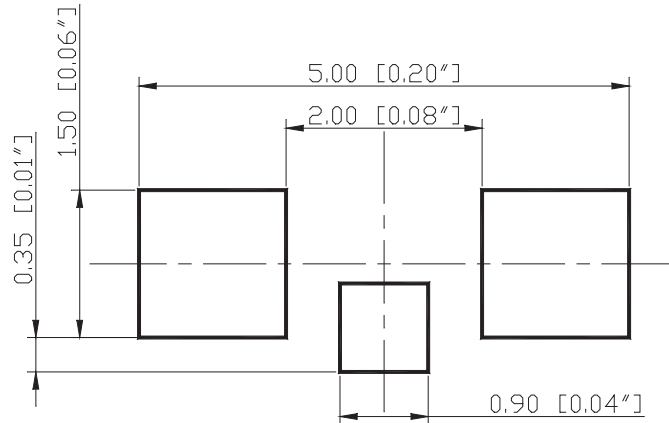
### OUTLINES DIMENSIONS



Technical drawings showing outlines and dimensions of the LED package. Dimensions are provided in millimeters (mm) and inches (").

- Top view: Overall width 3.0 [0.12"], mounting holes at 1.00 [0.04"] from edges.
- Side view: Total height 2.00 [0.08"], lens height 1.10 [0.04"], lens diameter 2.00 [0.08"], base diameter 2.00 [0.08"].
- Cross-section: Shows lens curvature with radii R0.50 [R0.02"], R0.40 [R0.02"], and R0.30 [R0.01"]. A polarity mark is indicated on the top surface.

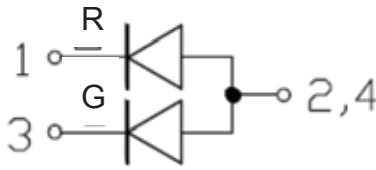
### RECOMMENDED PAD LAYOUT



Recommended pad layout dimensions:

- Overall width: 5.00 [0.20"]
- Pad width: 2.00 [0.08"]
- Pad height: 1.50 [0.06"]
- Pad spacing: 0.35 [0.01"]
- Internal pad width: 0.90 [0.04"]

Item	Materials	
Resin (mold)	Epoxy	
Lens Color	Water Transparent	
Dice	Red	AlGaInP/GaAs
	Green	AlGaInP



Circuit diagram showing the LED package connected to pins 1, 2, 3, and 4. Pin 1 is labeled 'R' (Red) and pin 3 is labeled 'G' (Green). Pins 2 and 4 are connected to a common ground.

**Notes:**

- All Dimensions are in millimeters (inches).
- Tolerance is  $\pm 0.25\text{mm}$  (0.01") unless otherwise noted.
- Specifications are subject to change without notice.

Part Number	Chip Material	Color of Emission	Lens Type	Viewing Angle
CSRB124G2R2C	InGaAlP	Red	Water Clear	150°
	InGaAlP	Green		



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**ABSOLUTE MAXIMUM RATINGS - RED (InGaAlP)**
**(TA=25°C)**

Parameter	Symbol	Max Rating	Unit
Power Dissipation	PD	75	mW
Pulse Forward Current	IFP	125	mA
Continuous Forward Current	IF	30	mA
Reverse Voltage	VR	5	V
Operating Temperature Range	TOPR	-40~+80	°C
Storage Temperature Range	TSTG	-40~+85	°C
IFP = Pulse Width ≤ 10 ms, Duty Ratio ≤ 1/10. Soldering Condition: 260 °C/ 5sec			

**OPTICAL-ELECTRICAL CHARACTERISTICS - RED (InGaAlP)**
**(TA=25°C)**

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Luminous Intensity	IV	IF = 20mA	80	150	-	mcd
Forward Voltage	VF	IF = 20mA	-	2.0	2.5	V
Reverse Leakage Current	IR	VR = 40V	-	-	10	µA
Peak Wavelength	λP	IF = 20mA	-	630	-	nm
Dominant Wavelength	λD	IF = 20mA	-	620	-	nm
Spectral Radiation Bandwidth	Δλ	IF = 20mA	-	18	-	nm



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**ABSOLUTE MAXIMUM RATINGS - GREEN (InGaAlP)**
**(TA=25°C)**

Parameter	Symbol	Max Rating	Unit
Power Dissipation	PD	75	mW
Pulse Forward Current	IFP	125	mA
Continuous Forward Current	IF	30	mA
Reverse Voltage	VR	5	V
Operating Temperature Range	TOPR	-40~+80	°C
Storage Temperature Range	TSTG	-40~+85	°C
IFP = Pulse Width ≤ 10 ms, Duty Ratio ≤ 1/10. Soldering Condition: 260 °C/ 5sec			

**OPTICAL-ELECTRICAL CHARACTERISTICS - GREEN (InGaAlP)**
**(TA=25°C)**

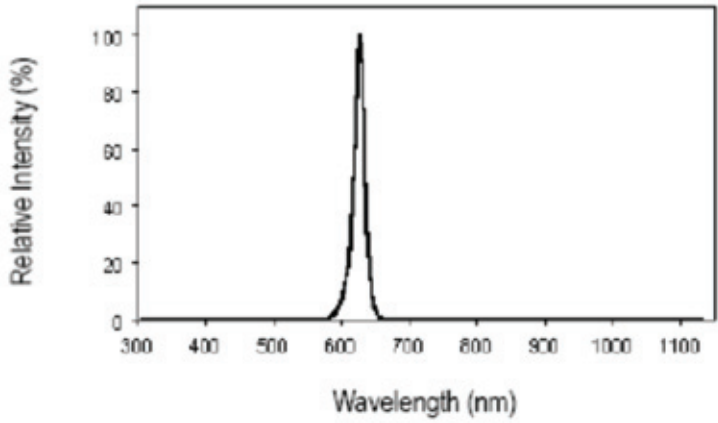
Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Luminous Intensity	IV	IF = 20mA	40	70	-	mcd
Forward Voltage	VF	IF = 20mA	-	2.0	2.5	V
Reverse Leakage Current	IR	VR = 40V	-	-	10	µA
Peak Wavelength	λP	IF = 20mA	-	575	-	nm
Dominant Wavelength	λD	IF = 20mA	-	570	-	nm
Spectral Radiation Bandwidth	Δλ	IF = 20mA	-	17	-	nm



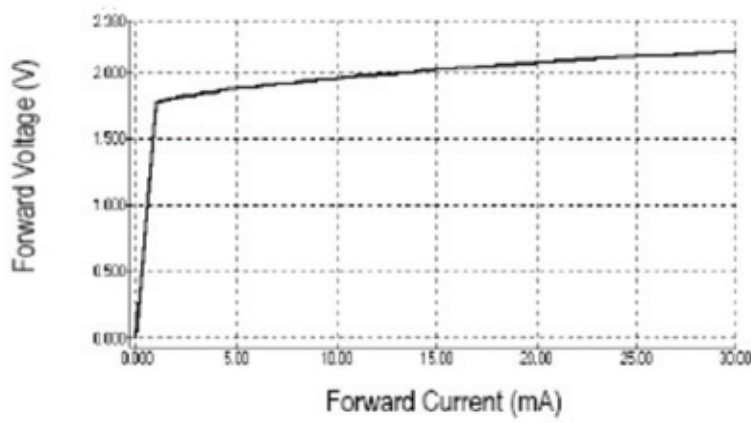
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## OPTICAL CHARACTERISTIC CURVES - RED

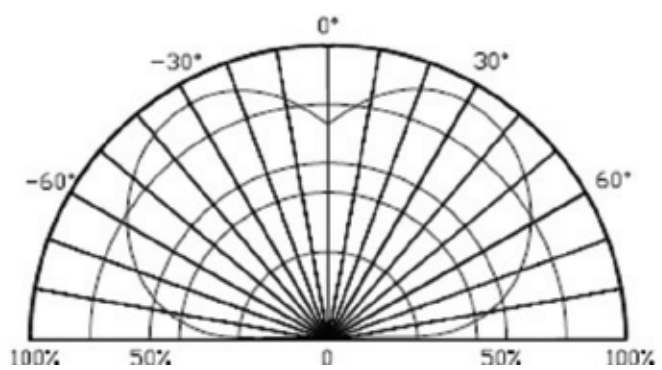
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



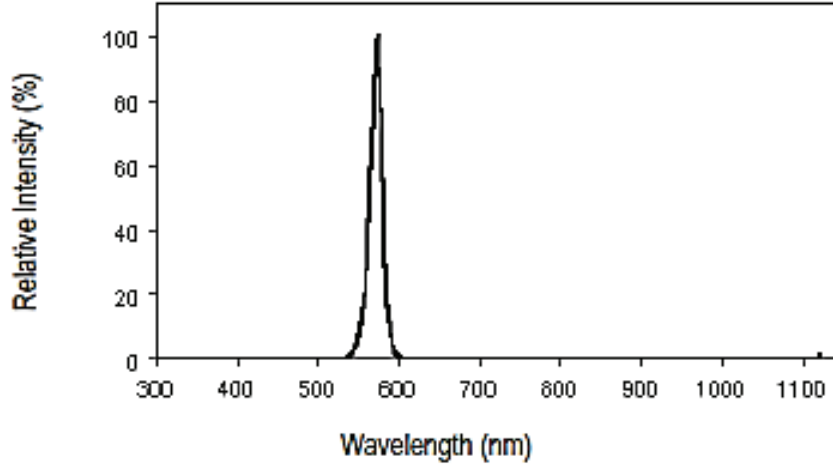
Directive Characteristics



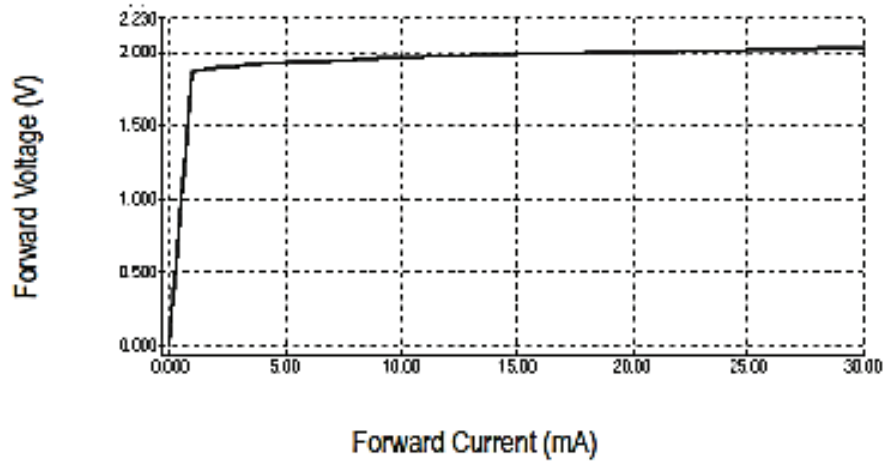
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**OPTICAL CHARACTERISTIC CURVES - GREEN**

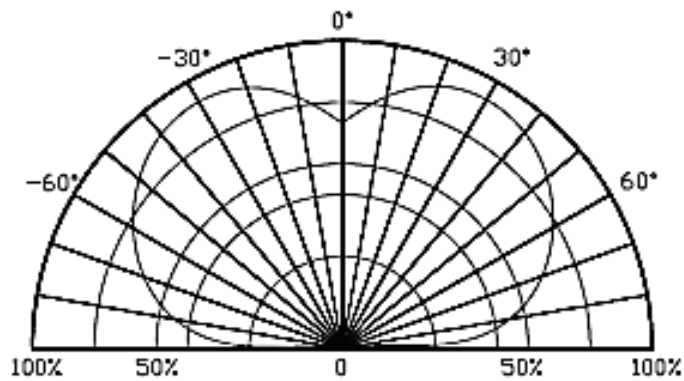
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



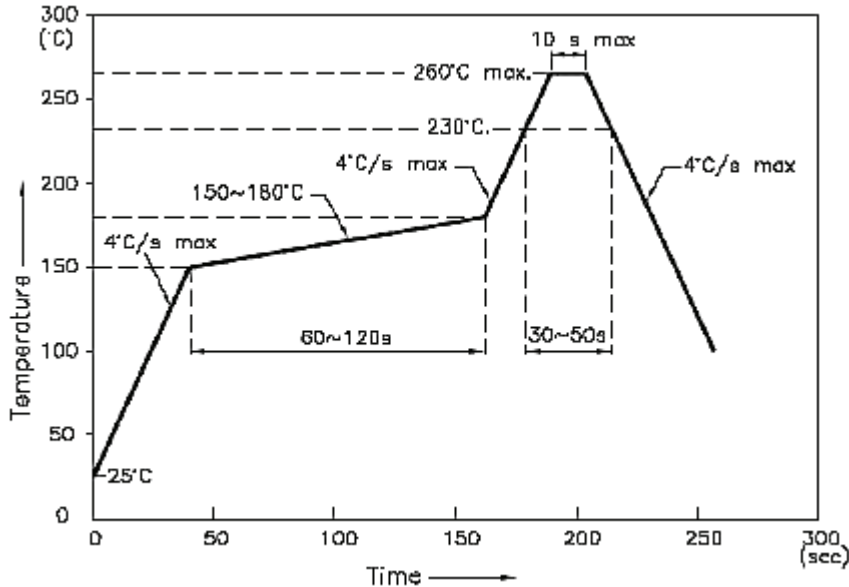
Directive Characteristics



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## RECOMMENDED SOLDERING PROFILE

### REFLOW PROFILE



#### Notes:

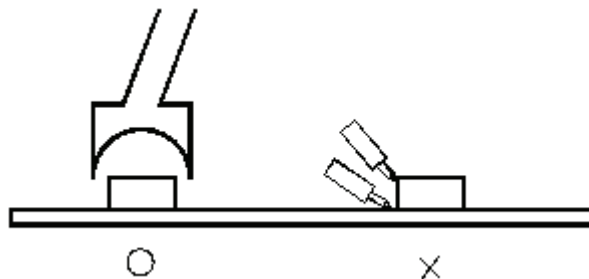
1. We recommend the reflow temperature 245°C ( $\pm 5^\circ\text{C}$ ). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

#### • Soldering Iron

Basic spec is  $\leq 5\text{sec}$  when 260°C. If temperature is higher, time should be shorter (+10°C  $\rightarrow$  -1sec). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C.

#### • Rework

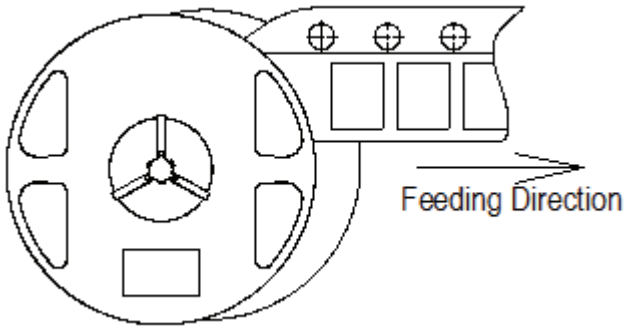
1. Customer must finish rework within 5 sec under 260°C.
2. The head of iron cannot touch copper foil.
3. Twin-head type is preferred.



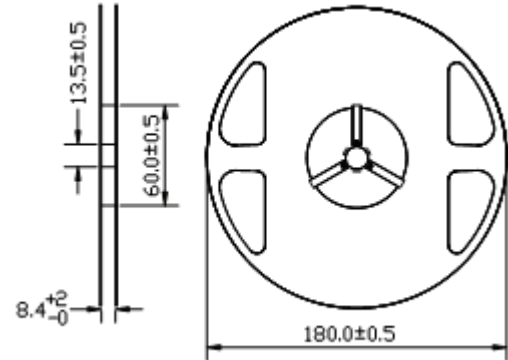
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## PACKAGING SPECIFICATIONS

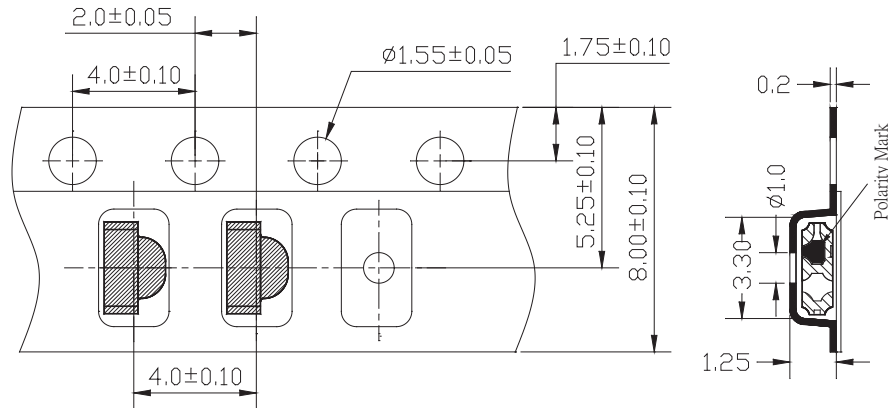
### Feeding Direction



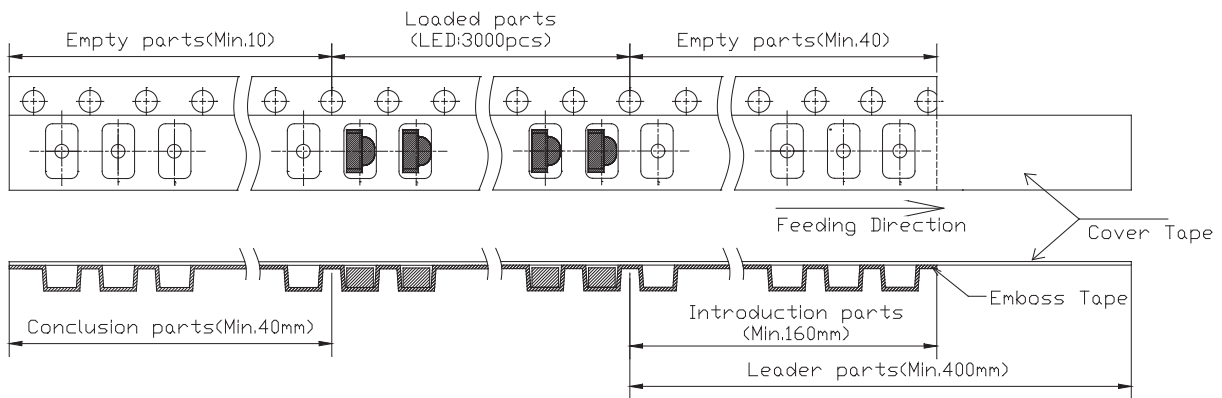
### Dimensions of Reel (Unit: mm)



### Dimensions of Tape (Unit: mm)



### Arrangement of Tape



### Notes:

1. Empty component pockets are sealed with top cover tape.
2. The maximum number of missing lamp is two.
3. The polarity mark is oriented towards the tape sprocket hole.
4. 3,000 pcs/Reel



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