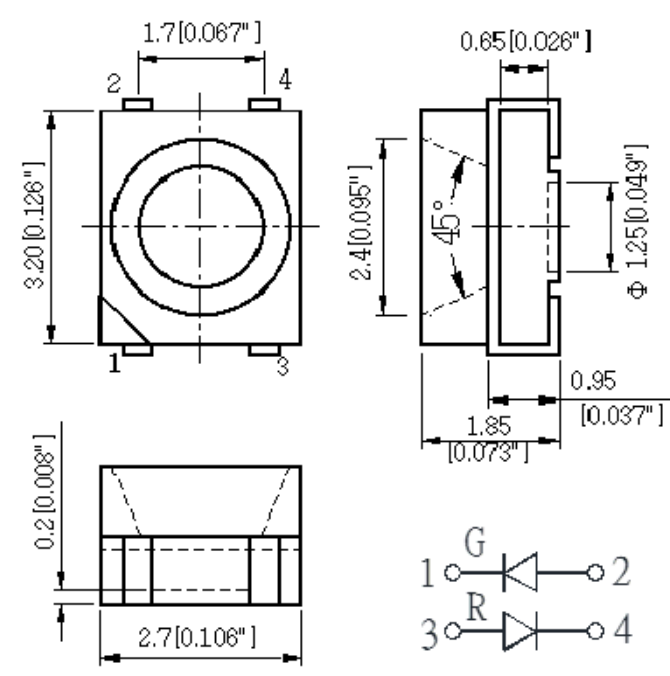


SPECIFICATIONS **CSP1311R2G2C**

OUTLINES DIMENSIONS

PACKAGE OUTLINES

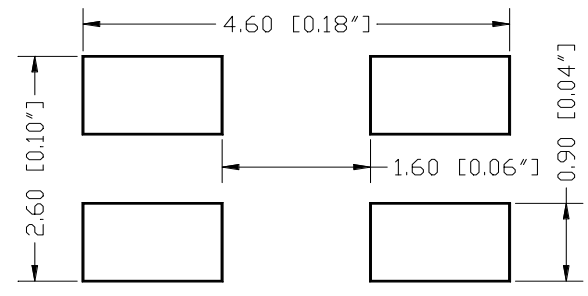


Technical drawings showing package outlines with dimensions in millimeters (inches):

- Top view: 1.7 [0.067"] width, 3.20 [0.126"] height, pins 1, 2, 3, 4.
- Side view: 0.65 [0.026"] top width, 2.4 [0.095"] height, 45° angle, 1.25 [0.049"] diameter, 0.95 [0.037"] bottom width, 1.85 [0.073"] total width.
- Bottom view: 0.2 [0.008"] height, 2.7 [0.106"] width.

Pin configuration: 1 (G), 2 (R), 3 (R), 4 (G).

RECOMMEND PAD LAYOUT



Recommended pad layout dimensions:

- Pin width: 1.60 [0.06"]
- Pin pitch: 4.60 [0.18"]
- Pin height: 0.90 [0.04"]
- Pin spacing: 2.60 [0.10"]

ITEM	MATERIALS	
Resin	Silicon	
Lens color	Water transparent	
Dice	Red	AlGaInP/GaAs
	Green	AlGaInP/GaAs

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
CSP1311R2G2C	InGaAIP	Red	Water Clear	120°
	InGaAIP	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	50	110	-	mcd
Forward Voltage	VF	IF = 20mA	-	2.0	2.5	V
Reverse Leakage Current	IR	VR = 40V	-	-	10	µA
Peak Wavelength	λP	IF = 20mA	-	640	-	nm
Dominant Wavelength	λD	IF = 20mA	-	630	-	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)

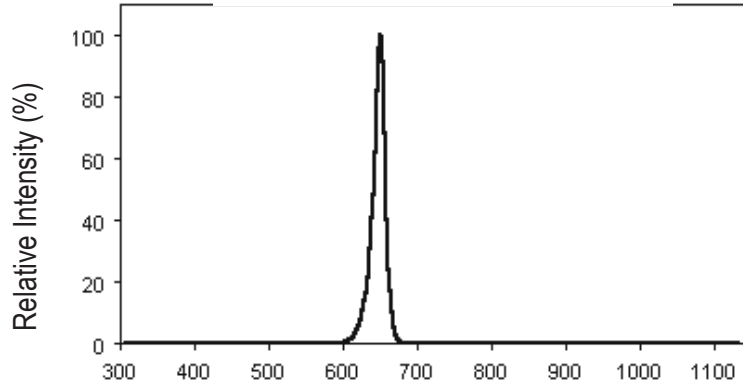
Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Luminous Intensity	IV	IF = 20mA	40	90	-	mcd
Forward Voltage	VF	IF = 20mA	-	2.0	2.5	V
Reverse Leakage Current	IR	VR = 40V	-	-	10	µA
Peak Wavelength	λP	IF = 20mA	-	572	-	nm
Dominant Wavelength	λD	IF = 20mA	-	570	-	nm
Spectral Radiation Bandwidth	Δλ	IF = 20mA	-	18	-	nm



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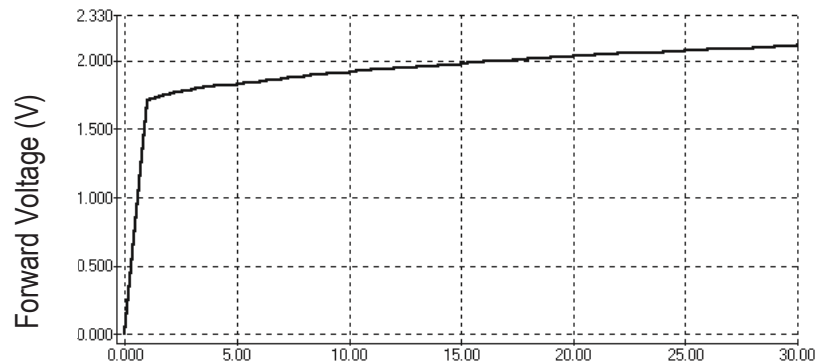
OPTICAL CHARACTERISTIC CURVES - RED

Relative Intensity vs. Wavelength



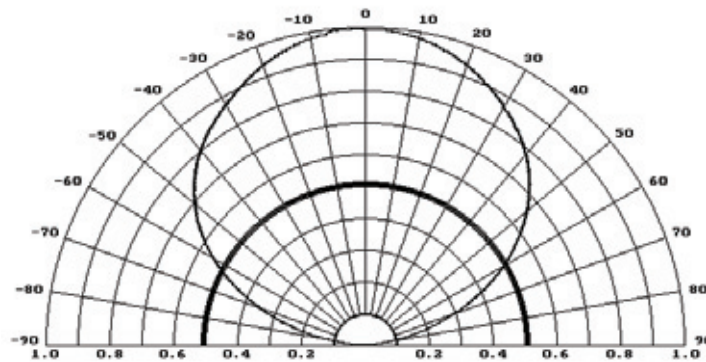
Wavelength (nm)

Forward Current vs. Forward Voltage



Forward Current (mA)

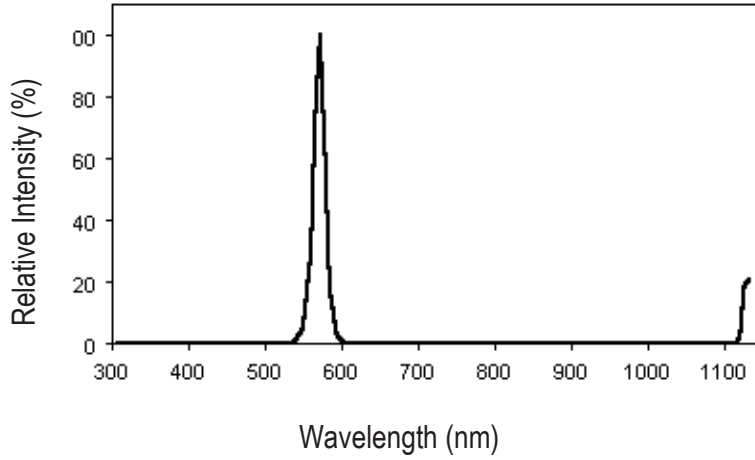
Directive Characteristics



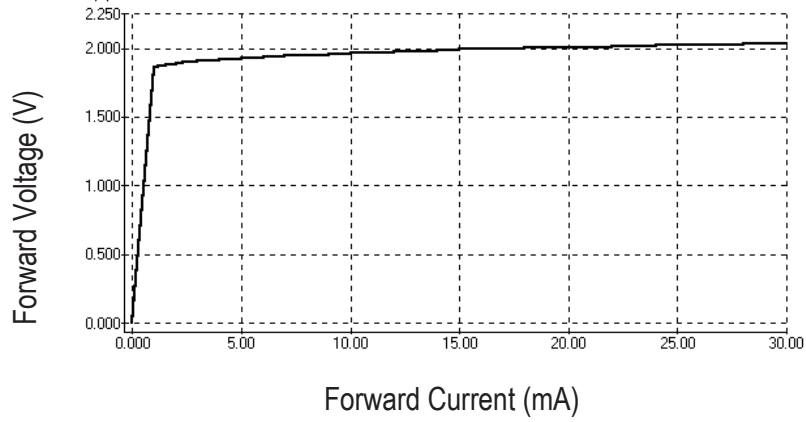
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OPTICAL CHARACTERISTIC CURVES - GREEN

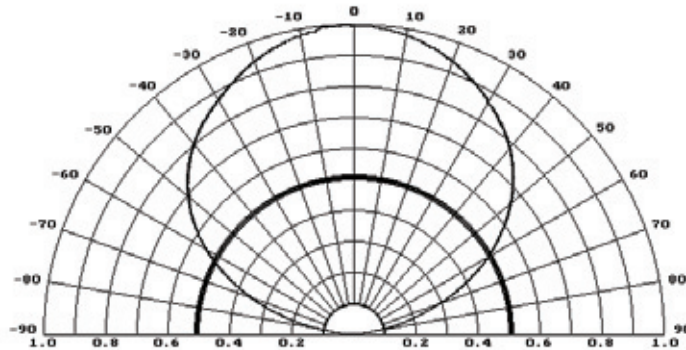
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



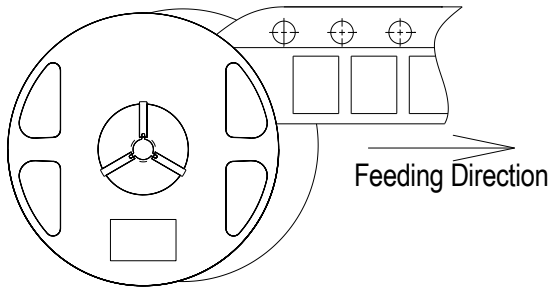
Directive Characteristics



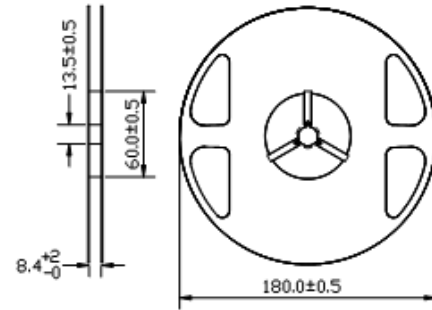
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PACKAGING SPECIFICATIONS

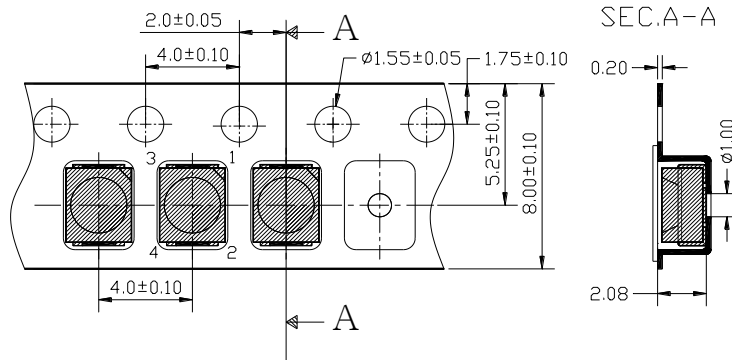
● Feeding Direction



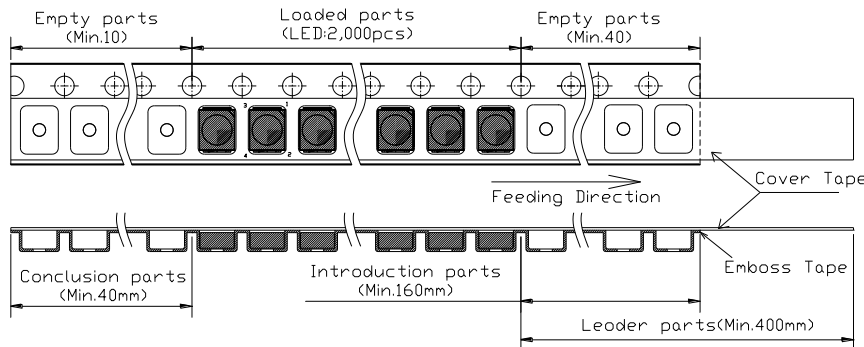
● Dimensions of Reel (Unit: mm)



● Dimensions of Tape (Unit: mm)



● Arrangement of Tape



Notes:

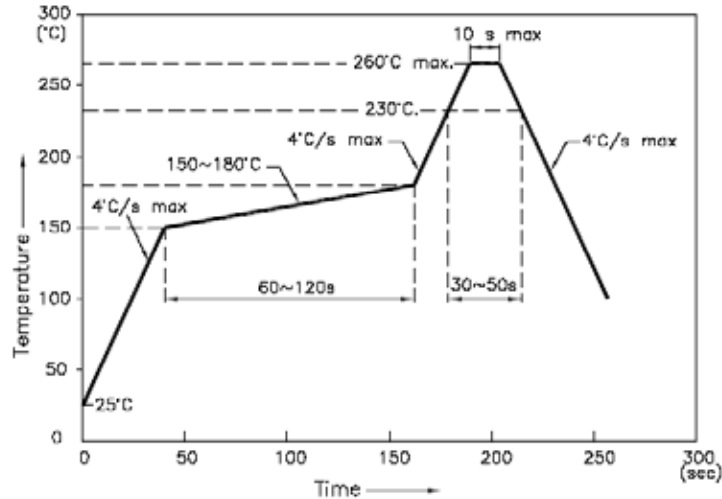
1. Empty component pockets are sealed with top cover tape.
2. The maximum number of missing lamps is two.
3. 2,000pcs/Reel



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RECOMMENDED SOLDERING PROFILE

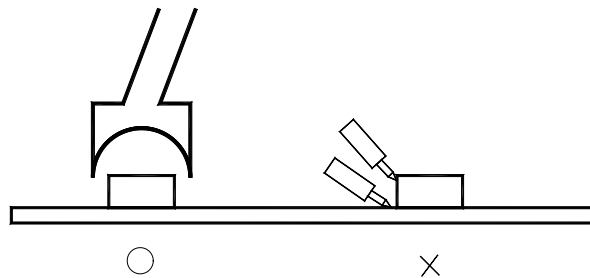
REFLOW PROFILE



1. We recommend the reflow temperature 245°C ($\pm 5^\circ\text{C}$). The maximum soldering temperature should be limited to 260°C.
2. Do not 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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