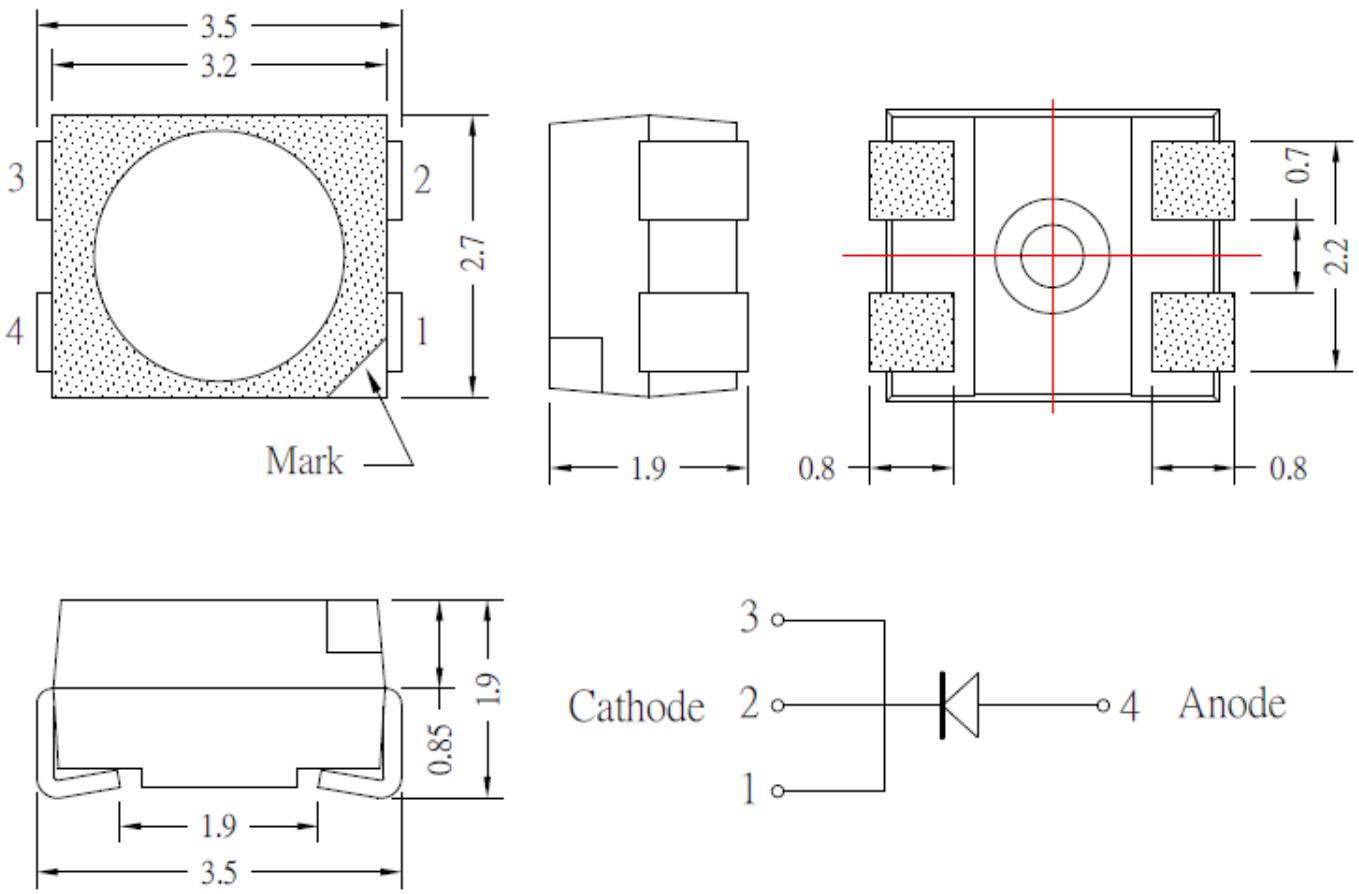


**SPECIFICATION** **CSP1311R3C-4**

**PACKAGE OUTLINES**



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

Part Number	Chip Material	Color of Emission	Lens Type	Viewing Angle
CSP1311R3C-4	InGaAlP	Red	Water Clear	120°



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**ABSOLUTE MAXIMUM RATINGS**
**(TA=25°C)**

Parameter	Symbol	Max Rating	Unit
Forward Current	IF	70	mA
Reverse Current @ 5V	IR	10	μA
Power Dissipation	Pd	150	mW
Operating Temperature Range	TOP	-30~+100	°C
Storage Temperature Range	TSTG	-40~+100	°C
Peak Pulsing Current (1/10 duty f = 10KHz)	IFP	100	mA
Soldering Temperature	TSOL	Max 265°C for 10 sec Max	

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

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Luminous Intensity	Iv	IF = 50mA	1500	2200	-	mcd
Forward Voltage	VF	IF = 50mA	-	2.4	3.0	V
Reverse Leakage Current	IR	VR = 5V	-	-	10	μA
Viewing Angle at 50% Iv	2θ1/2	IF = 50mA	-	120	-	Deg
Peak Wavelength	λP	IF = 50mA	-	635	-	nm
Dominant Wavelength	λD	IF = 50mA	615	625	635	nm

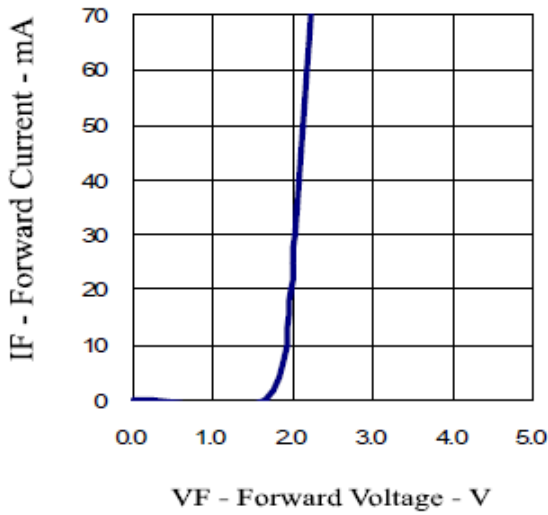
\*Tolerance of viewing angle: -10 / +5 deg.



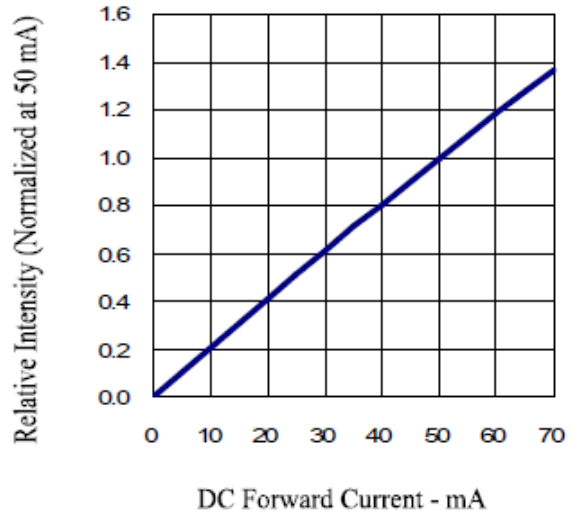
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## OPTICAL CHARACTERISTIC CURVES

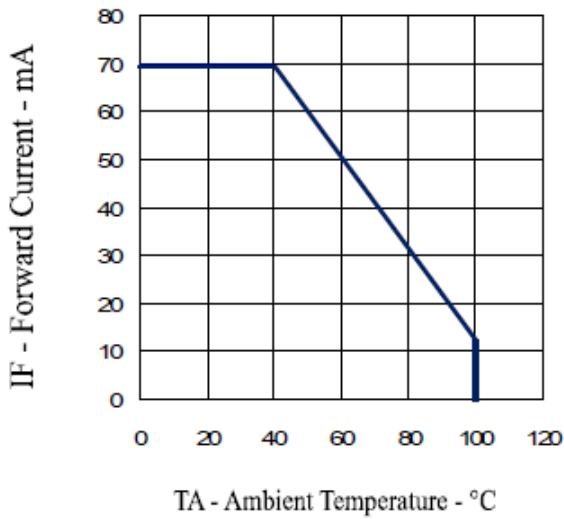
Forward Current vs. Forward Voltage



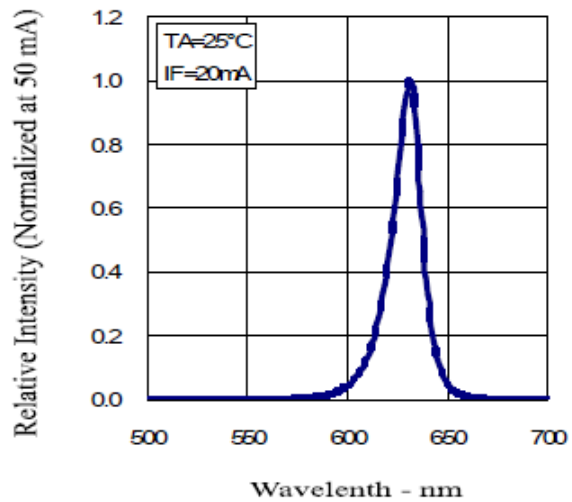
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



Relative Intensity vs. Wavelength

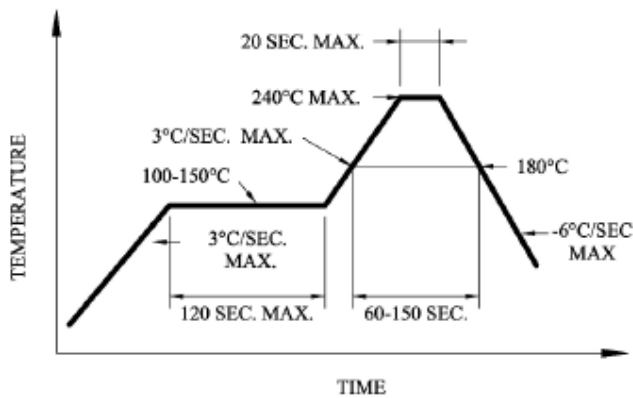
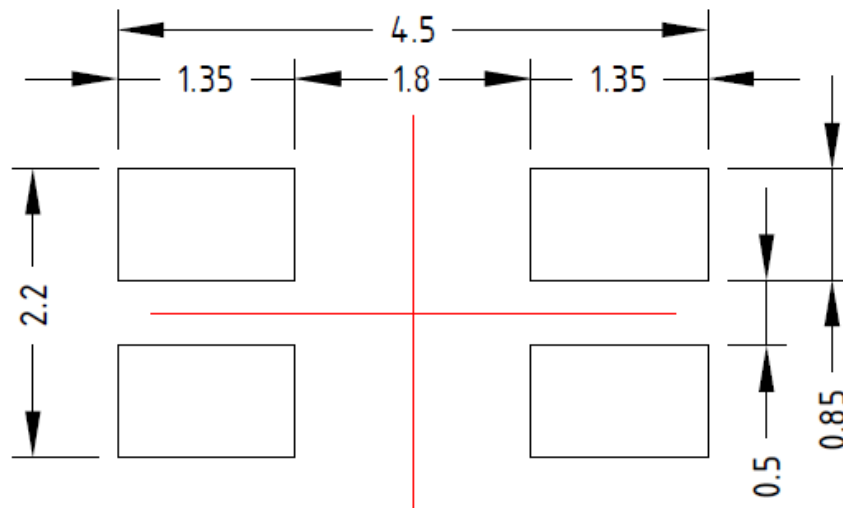


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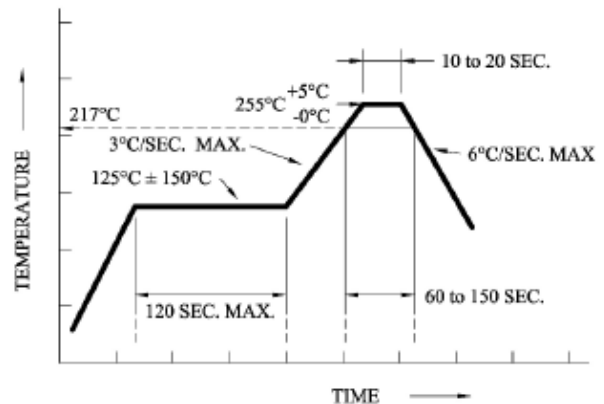


## SOLDERING CONDITIONS

### RECOMMENDED SOLDERING PAD PATTERN



**Recommended reflow soldering profile**



**Recommended Pb-free reflow soldering profile.**

- ☒ Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- ☒ Reflow soldering should not be done more than two times.
- ☒ When soldering, do not put stress on the LEDs during heating.
- ☒ After soldering, do not warp the circuit board



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