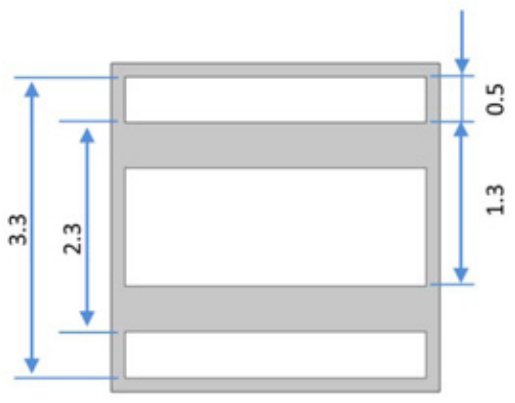
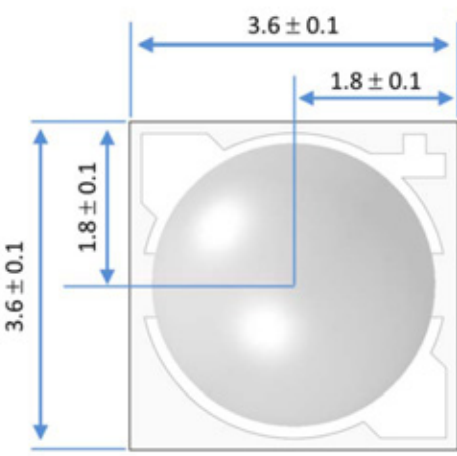
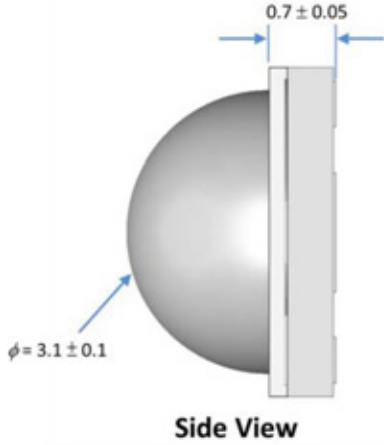
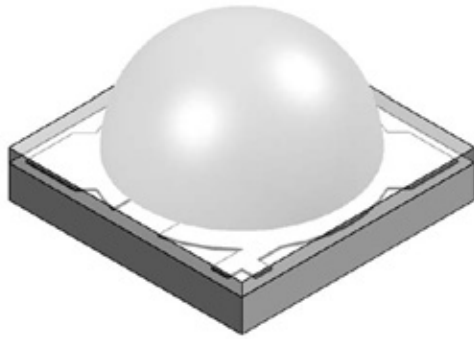


SPECIFICATION **CSHD1414RR2C**
PACKAGE OUTLINES


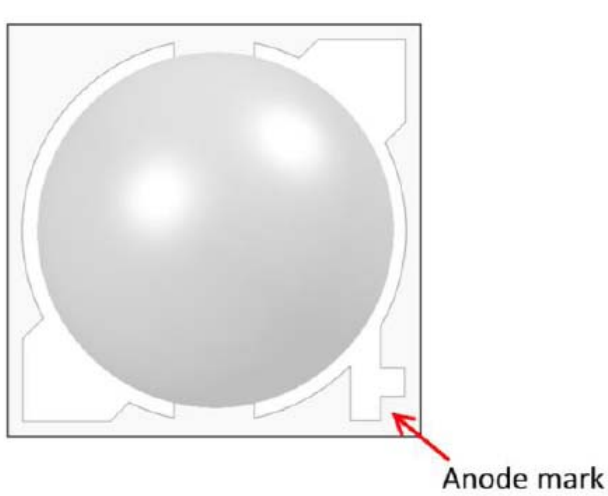
- Notes:
1. All dimensions are in millimeters (inches).
 2. Tolerance is $\pm 0.25\text{mm}$ (0.01") unless otherwise noted.
 3. Specifications are subject to change without notice.

Part Number	Chip Material	Color of Emission	Lens Type	Viewing Angle
CSHD1414RR2C	InGaAlP	Red	Water Clear	130°

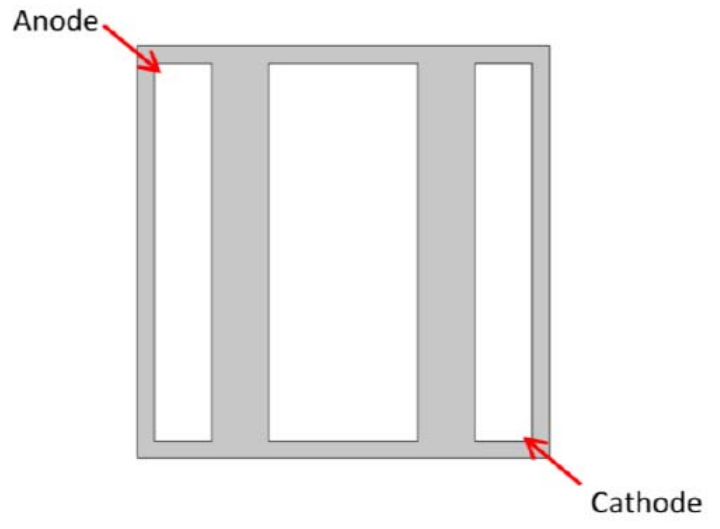


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RECOMMENDED SOLDER PADS

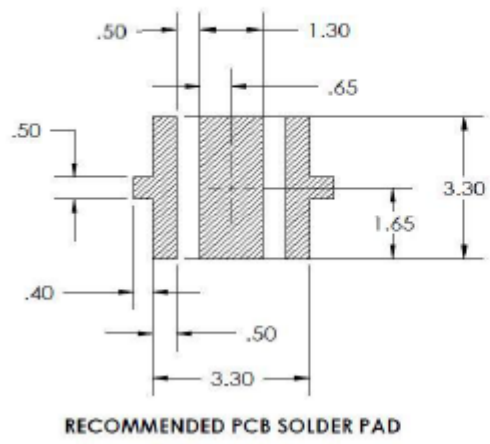


Top View

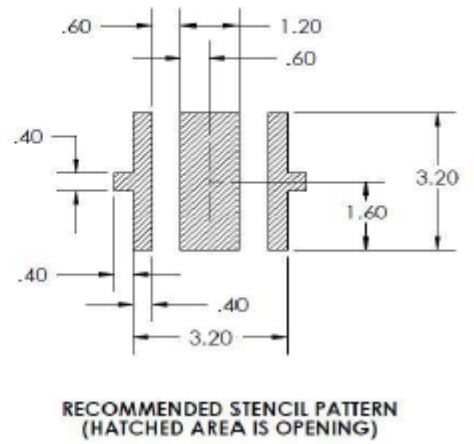


Bottom View

Recommended PCB solder pad:



Recommended stencil pattern:



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ABSOLUTE MAXIMUM RATINGS (TA=25°C)

Parameter	Symbol	Max Rating	Unit
Forward Current	IF	700	mA
Reverse Voltage	VR	5	V
Operating Temperature Range	TOP	-40~+85	°C
Storage Temperature Range	TSTG	-40~+100	°C
Peak Pulsing Current (1/10 duty f = 10KHz)	IFP	1000	mA
Soldering Temperature	TSOL	Max 240°C for 5 sec Max	

OPTICAL-ELECTRICAL CHARACTERISTICS (TA=25°C)

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Luminous Intensity	Iv	IF = 350mA	-	28	-	lm
Forward Voltage	VF	IF = 350mA	-	2.4	-	V
Reverse Leakage Current	IR	VR = 5V	-	-	10	µA
Viewing Angle at 50% Iv	2θ1/2	IF = 350mA	-	130	-	Deg
Wavelength	λD	IF = 350mA	650	-	660	nm

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

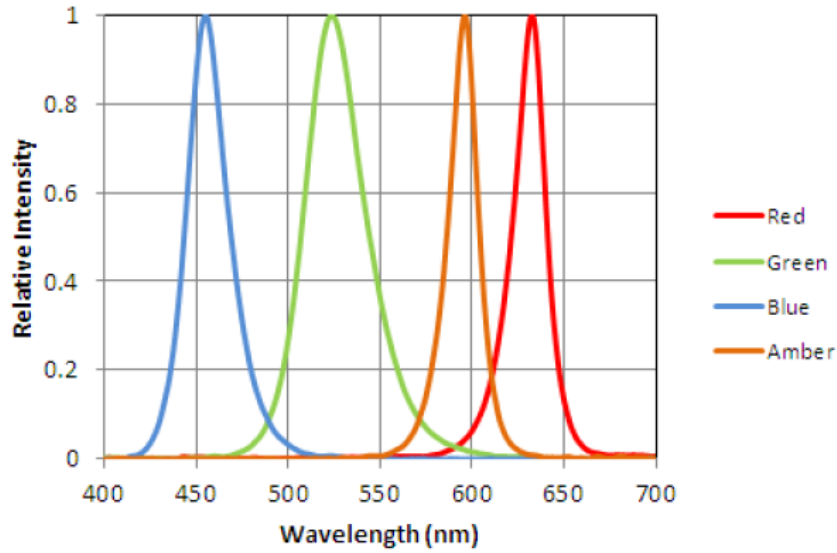


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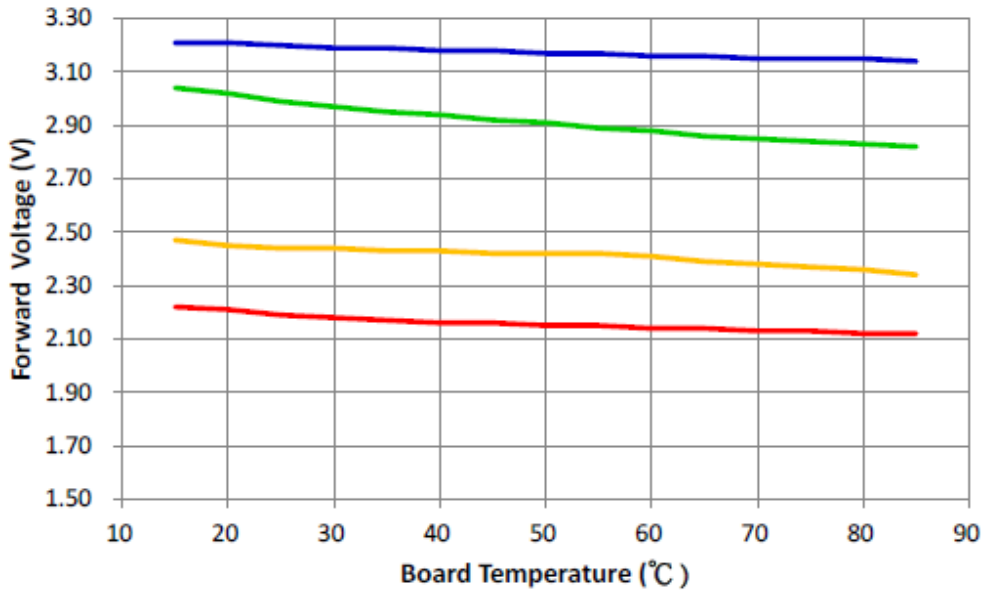
OPTICAL CHARACTERISTIC CURVES

Relative Spectral Distribution vs. Wavelength Characteristics

Nominal Red/Green/Blue/Amber - Thermal Pad Temperature = 25°C



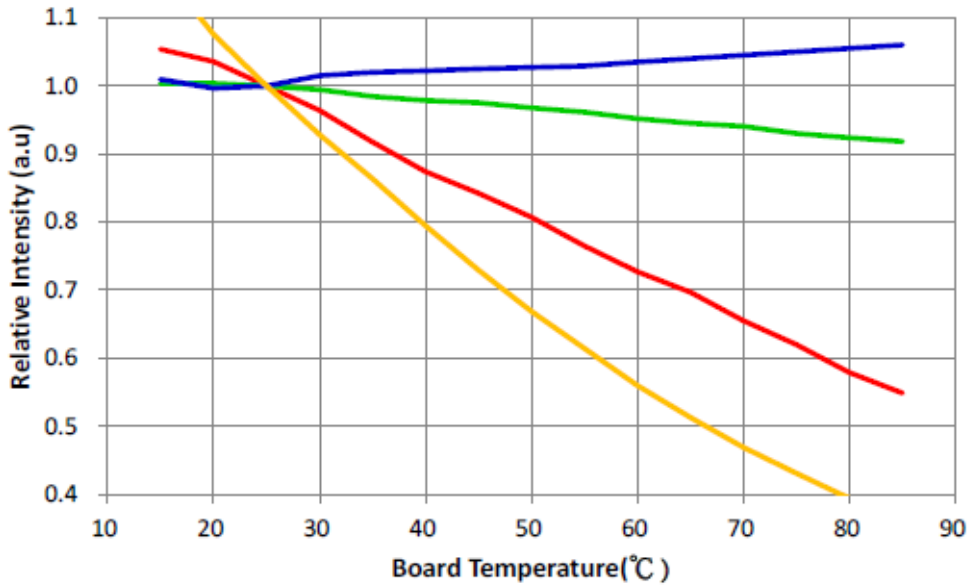
Forward Voltage vs. Thermal Pad Temperature @350mA



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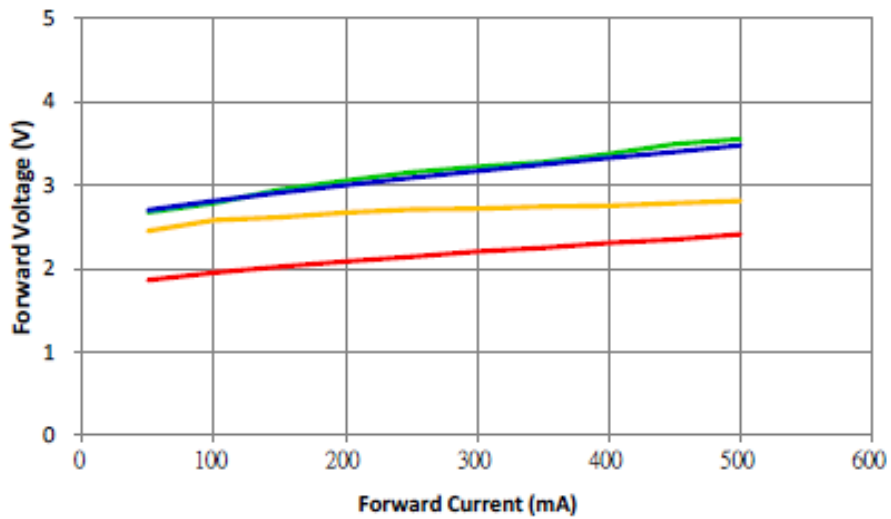
OPTICAL CHARACTERISTIC CURVES

Typical Efficacy vs. Thermal Pad Temperature @350mA

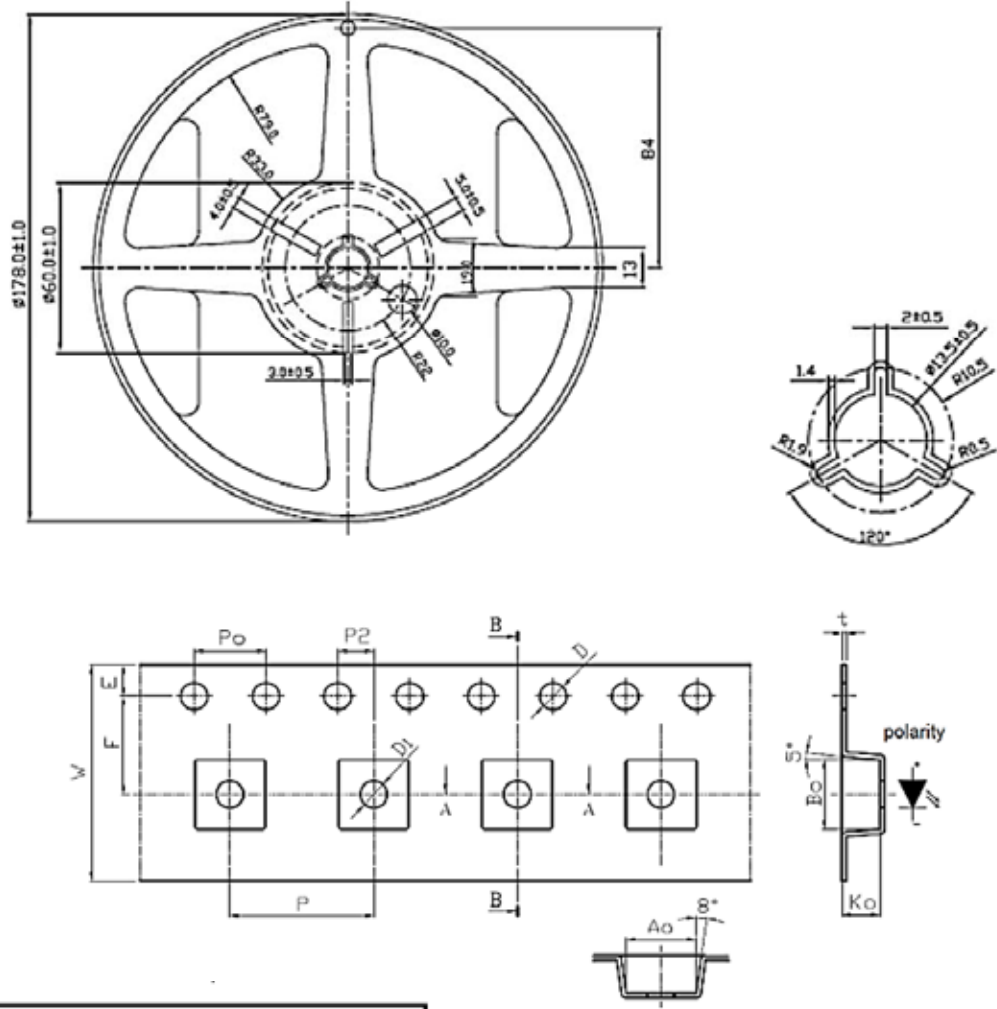


Typical Forward Current Characteristics

Thermal Pad Temperature = 25°C



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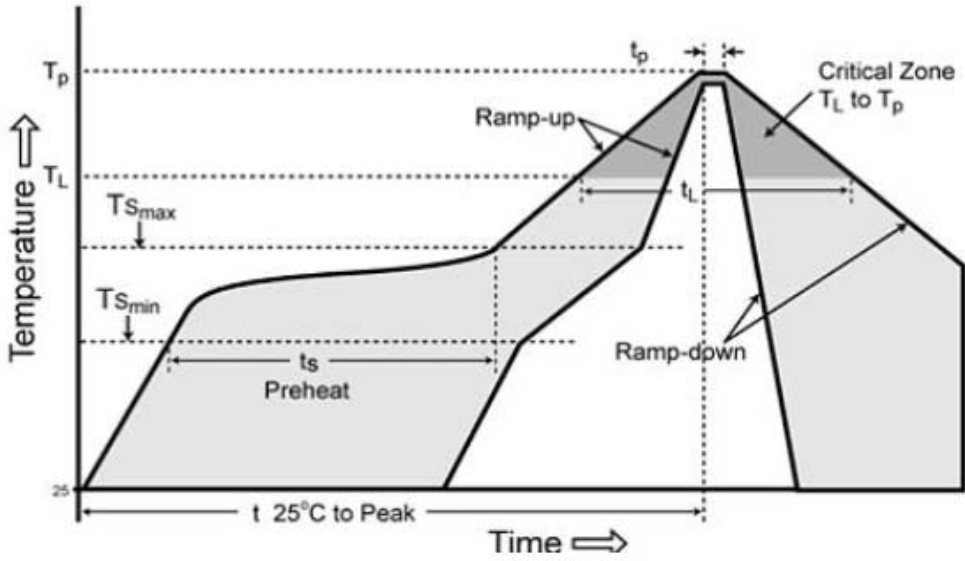
PACKAGING SPECIFICATION
TAPE & REEL DIMENSIONS


Symbol	Dimension
W	12.00±0.10
P	8.00±0.10
E	1.75±0.10
F	5.50±0.05
P2	2.00±0.05
D	1.50+0.10 or 1.50-0.00
D1	1.50±0.10
Po	4.00±0.10
10Po	40.00±0.20
Ao	3.90±0.10
Bo	3.90±0.10
Ko	2.15±0.1
t	0.26±0.05



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SOLDERING CONDITIONS



Profile Feature	Pb-Free Assembly
Average ramp-up rate (TL to TP)	3°C/second max.
Preheat	
Temperature Min (T _{smin})	150°C
Temperature Max (T _{smax})	200°C
Time (min to max) (t _s)	60-180 seconds
Time maintained above:	
Temperature (T _L)	217°C
Time (t _L)	60-150 seconds
Peak/Classification Temperature (T _p)	240°C
Time within 5°C of actual Peak Temperature (t _p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.



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