

# HSMF-C150/C15A

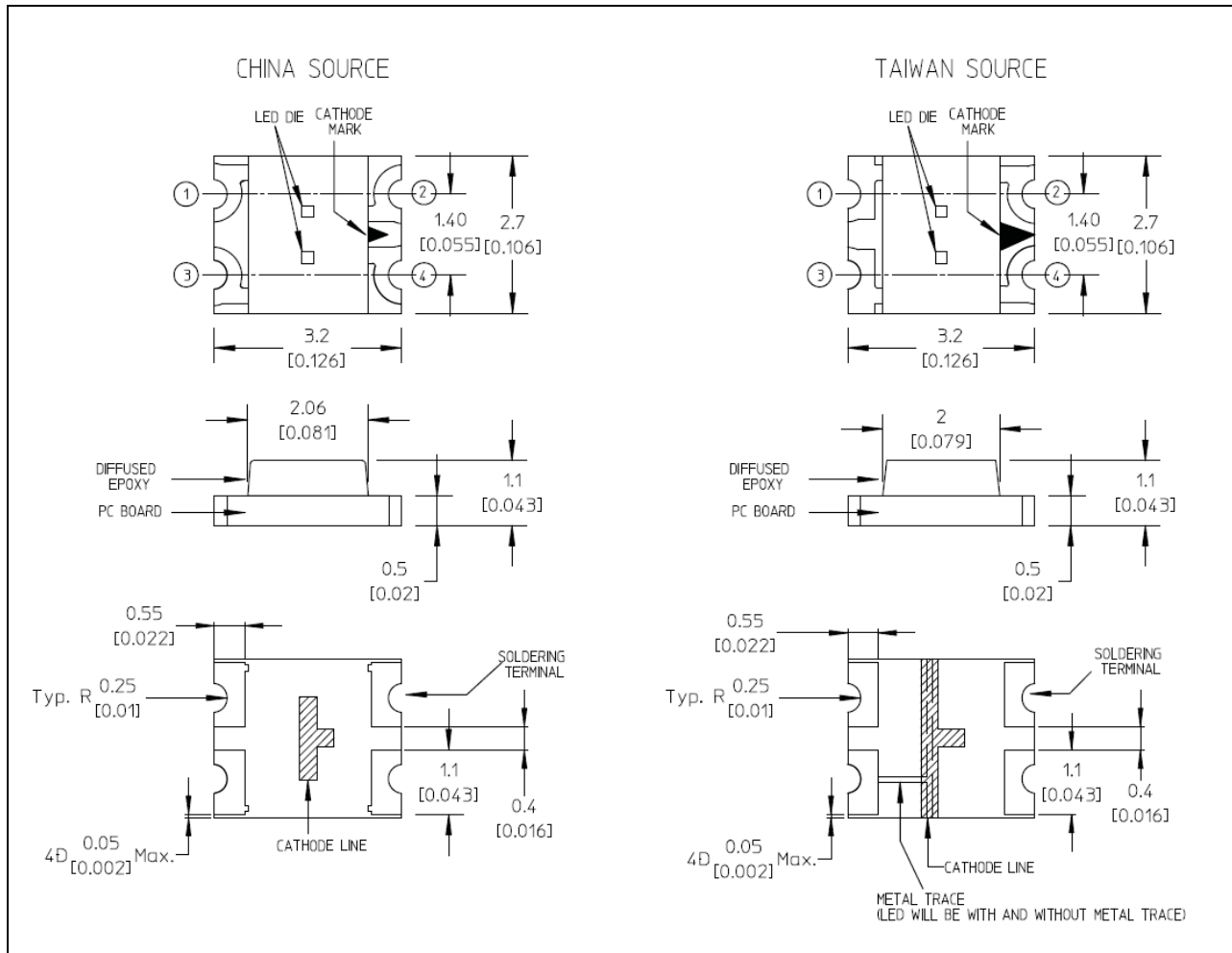
## Bi Color Surface Mount ChipLED

### Data Sheet



Caution: This LED is Class 1A ESD sensitive. Please observe appropriate precautions during handling and processing.

#### Package Dimensions



Polarity	HSMF-C150	HSMF-C15A
① — — ②	Green	Amber
③ — — ④	Red	Red

- All dimensions are in mm(inches).
- Tolerance  $\pm 0.1\text{mm}(\pm 0.004\text{in})$  unless otherwise specified.

### Device Selection Guide

Part Number	Color	Package description
HSMF-C150	AllnGaP Red / AllnGaP Green	Untinted, Diffused
HSMF-C15A	AllnGaP Red / AllnGaP Amber	Untinted, Diffused

### Absolute Maximum Value at T<sub>A</sub>=25°C

Parameter	AllnGaP Red	AllnGaP Green	AllnGaP Amber	Unit
Forward current	25	20	25	mA
Power dissipation	60	48	60	mW
Operating temperature	-40 to 85			°C
Storage temperature	-40 to 85			°C

### Optical Characteristics at T<sub>A</sub>=25°C, I<sub>f</sub>=20mA

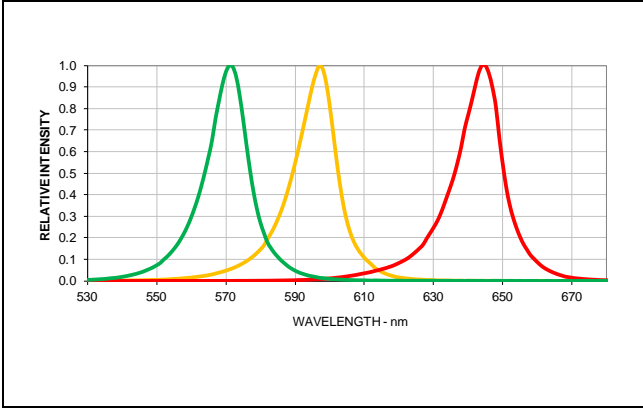
Color	Luminous intensity I <sub>v</sub> (mcd)		Peak wavelength λ <sub>p</sub> (nm)	Dominant wavelength λ <sub>d</sub> (nm)	Viewing angle 2θ <sub>1/2</sub> (°)
	Min	Typ	Typ	Typ	Typ
AllnGaP Red	18.0	79.0	644	632	170
AllnGaP Green	18.0	45.0	570	572	170
AllnGaP Amber	28.50	55.0	595	592	170

- Luminous intensity tolerance ±15%.

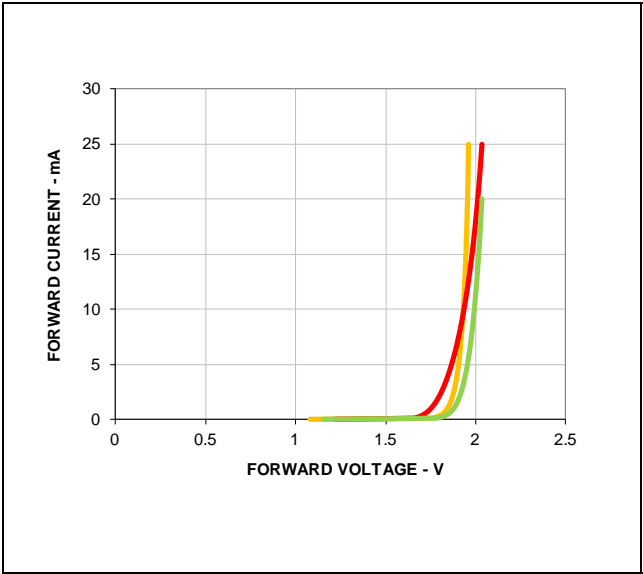
### Electrical Characteristics at T<sub>A</sub>=25°C, I<sub>f</sub>=20mA

Color	Forward voltage V <sub>f</sub> (V)		Reverse voltage V <sub>r</sub> (V) at I <sub>r</sub> =100μA	Thermal resistance R <sub>θjp</sub> (°C/W)
	Typ	Max	Min	Typ
AllnGaP Red	2.0	2.4	5	325
AllnGaP Green	2.1	2.4	5	325
AllnGaP Amber	1.9	2.4	5	325

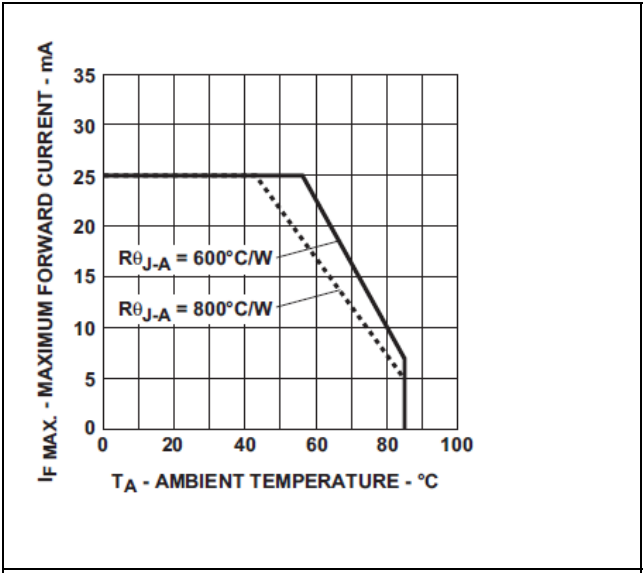
- Forward voltage tolerance 0.1V.
- Reverse voltage Indicates product final testing, long terms reverse bias is not recommended.



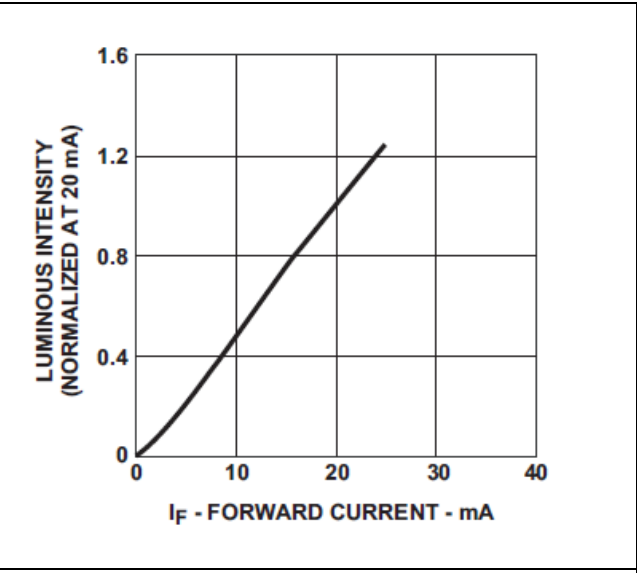
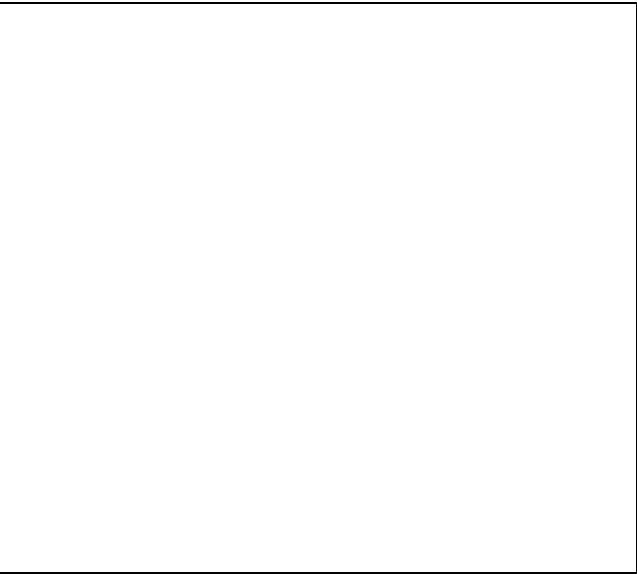
Spectrum



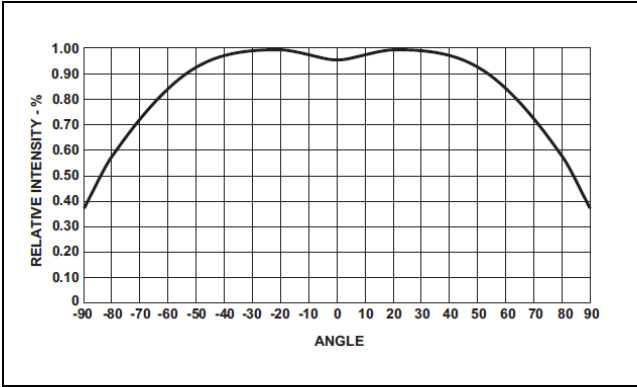
Forward current vs Forward voltage



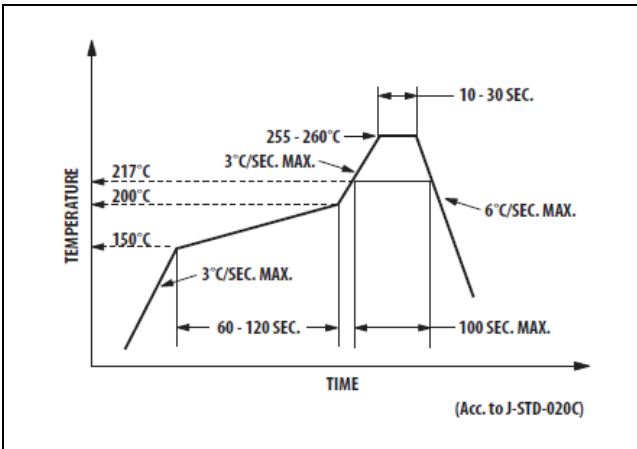
Forward current vs Ambient temperature



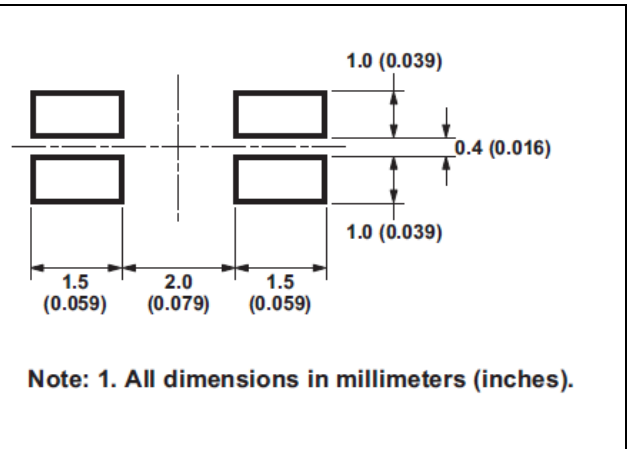
Relative luminous intensity vs Forward current



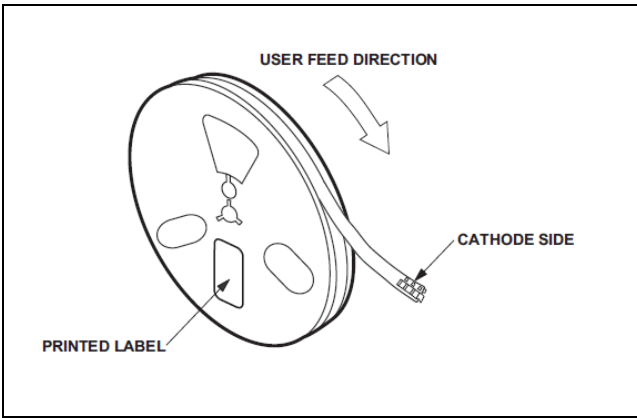
Radiation pattern



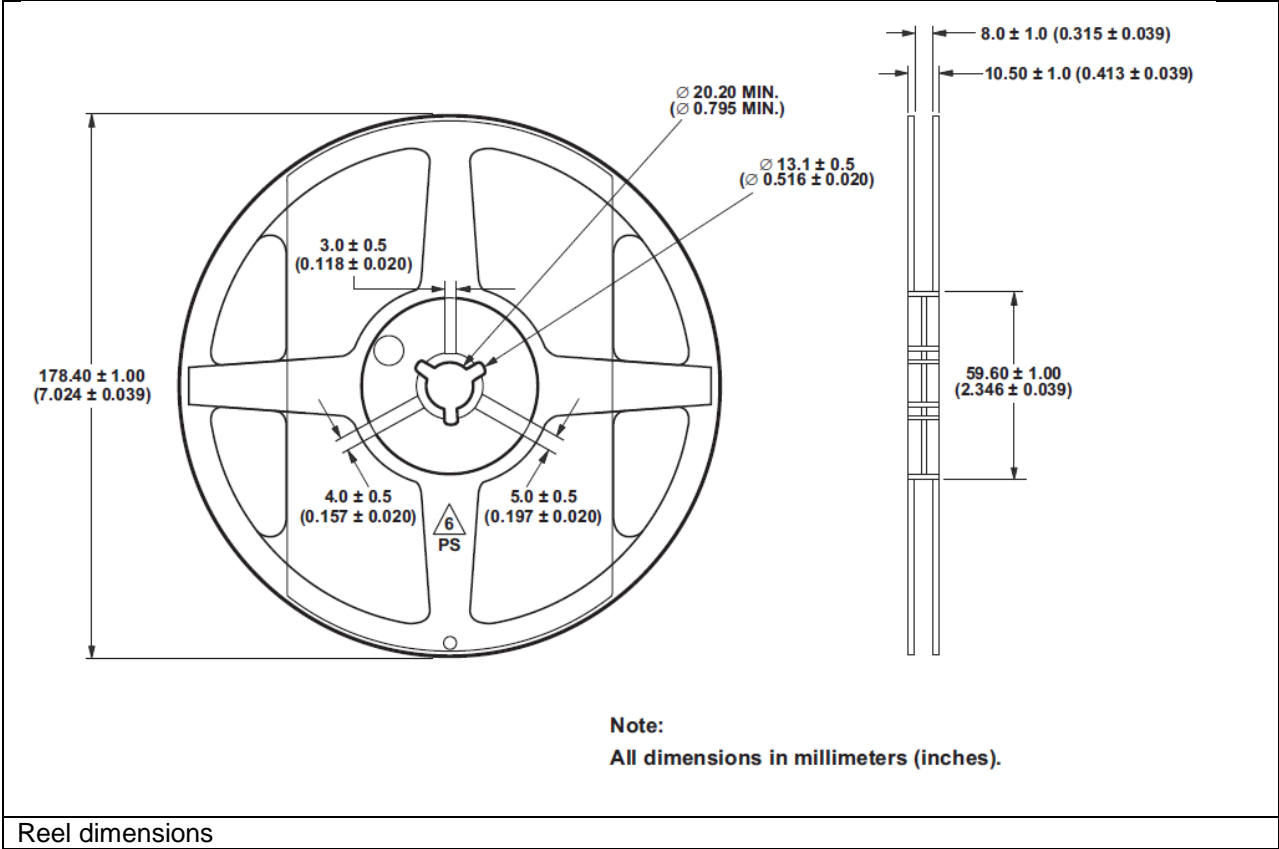
Recommended Pb free reflow solder profile



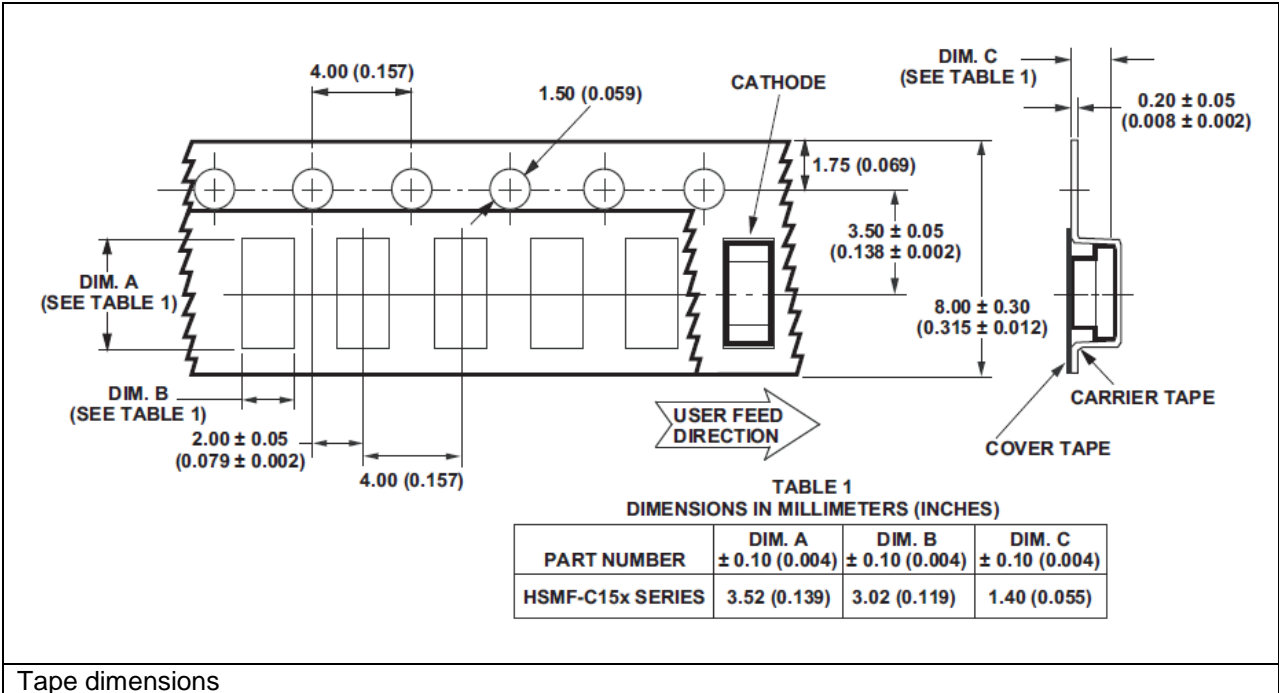
Note: 1. All dimensions in millimeters (inches).



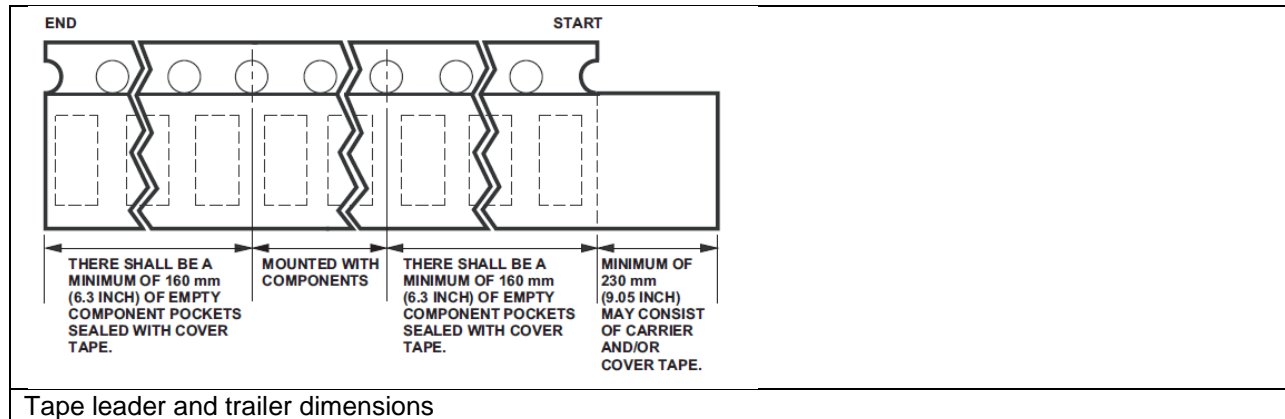
Reeling orientation



Reel dimensions



Tape dimensions



**Storage condition:**

5 to 30°C @60% RH max

Baking is required under the condition

(a) Humidity indicator card is >10% when read at 23±5°C.

(b) Device exposed to factory conditions <30°C/60% RH more than 672 hours.

Baking recommended condition: 60±5°C for 20 hours.

**Luminous Intensity Bin**

Bin	Min(mcd)	Max(mcd)
M	18.0	28.5
N	28.5	45.0
P	45.0	71.5
Q	71.5	112.5
R	112.5	180.0
S	180.0	285.0

Tolerance ±15%

**Red color bin**

Bin	Min(nm)	Max(nm)
-	620.0	635.0

Tolerance ±1nm

**Green color bin**

Bin	Min(nm)	Max(nm)
A	561.5	564.5
B	564.5	567.5
C	567.5	570.5
D	570.5	573.5
E	573.5	576.5

Tolerance ±0.5nm

**Amber color bin**

Bin	Min(nm)	Max(nm)
A	582.0	584.5
B	584.5	587.0
C	587.0	589.5
D	589.5	592.0
E	592.0	594.5
F	594.5	597.0

Tolerance ±0.5nm

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