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***CMDA37 Series Power LED (2.5 Watt) on Star PCB***  
***CMDA38 Series Power LED (2.5 Watt) on Square PCB***

**- Features**

- Super high flux output and high luminance
- Designed for high current operation
- Low thermal resistance
- SMT solder compatible
- Lead (Pb) Free Product – RoHS Compliant

**- Applications**

- General Illumination
  - Outdoor & Indoor Architectural Lighting
  - Decorative Lighting
  - Portable Lighting / Flash Light (Torch) Lamps
  - Reading Lamps and Task Lighting
  - Traffic Signaling

**- Description**

These packaged LED's on metal PCB's are designed for high current operation and high flux output applications. The package design features better thermal management characteristics than other LED solutions. Because of these advantages, this product has many applications such as internal & external lighting, automobile lighting, large size LCD backlight, etc.



**CML**

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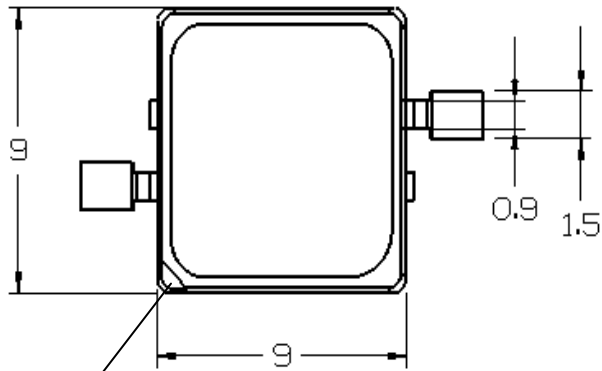
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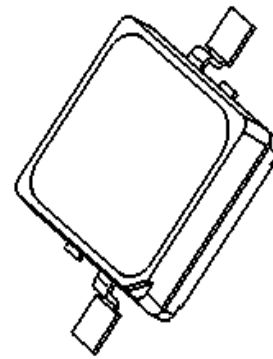
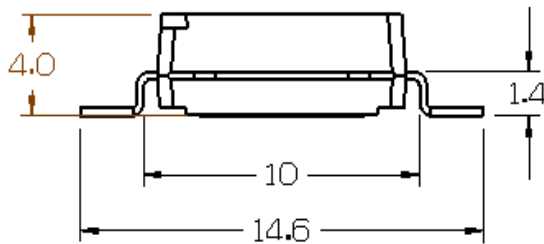
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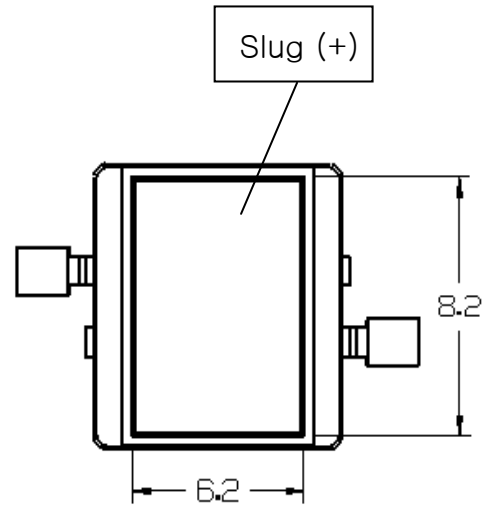
**1. Outline Dimensions**



Cathode  
Mark



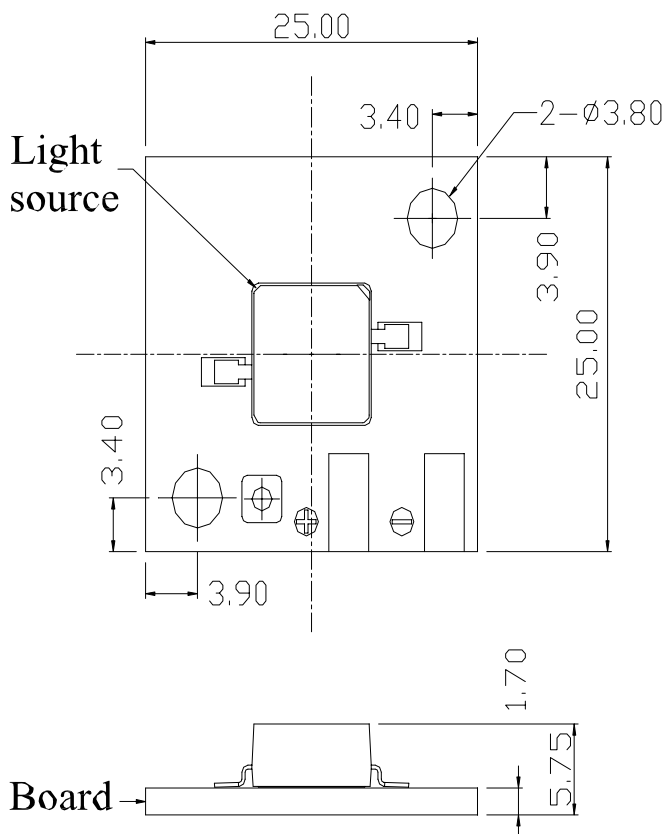
Isometric view  
Scale: None



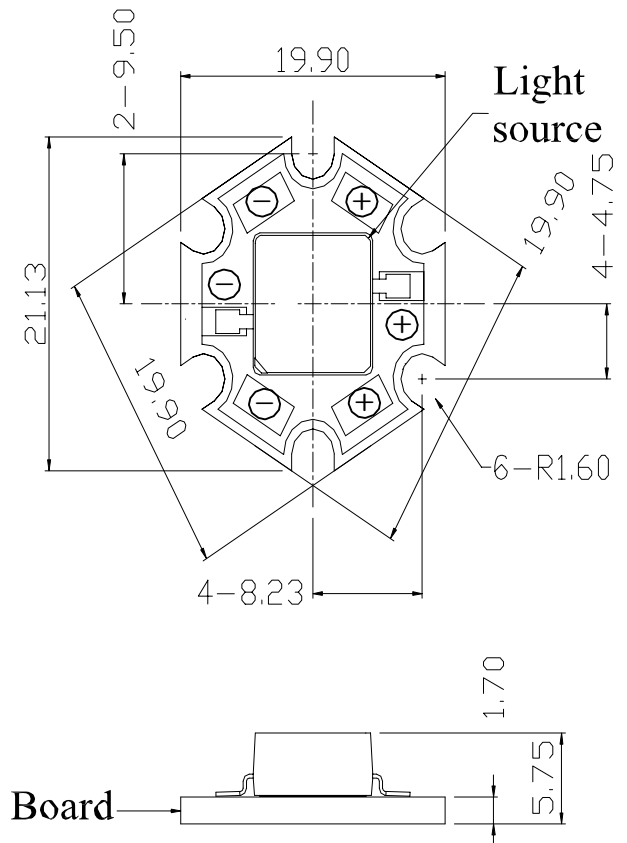
Rear view

- Notes : 1. All dimensions are in millimeters.  
2. Scale : none  
3. This drawing is reference only for engineering

## 2. Metal Outline Dimensions



CMDA38xx15D13L  
Square Configuration



CMDA37xx15D13L  
Star Configuration

- Note :
1. All dimensions are in millimeters
  2. Scale : none
  3. This drawing is reference only engineering.



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**3. Electro-Optical Characteristics (at IF=350mA, TA=25°C)**

**CMDA37xx15D13L Star PCB series**

P/N	Description	Luminous Flux Min./Typ. (lm)	Correlated Color Temperature (Kelvin)	CRI	Dominant Wavelength (nm) Min./Typ./Max.	Forward Voltage (volts) Min./Typ./Max.	View Angle (degrees)	Thermal resistance (°C /W)
	Symbol	ΦV [1]	CCT [3]	Ra	λD	V	2Θ 1/2	Rθ [4]
CMDA37CW15D13L	Pure White	70 / 103	6500	76		3.0 / 3.4 / 4.3	110	9.1
CMDA37WW15D13L	Warm White	54 / 60	3000	76		3.0 / 3.4 / 4.3	110	9.1
CMDA37CB15D13L	Blue	14 / 18			455 / 460 / 475	3.0 / 3.4 / 4.3	130	9.1
CMDA37AG15D13L	Green	54 / 93			520 / 527 / 535	3.0 / 3.4 / 4.3	130	9.1
CMDA37AR15D13L	Red	54 / 60			620 / 625 / 630	2.0 / 2.5 / 3.0	128	13
CMDA37GB15D13L	Cyan	54 / 78			500 / 505 / 510	3.0 / 3.4 / 4.3	130	9.1
CMDA37DY15D13L	Amber	54 / 75			585 / 590 / 595	2.0 / 2.5 / 3.0	128	13

**4. Absolute Maximum Ratings (at TA=25°C)**

P/N	Description	Forward Current (A)	Power Dissipation (Watts)	Junction Temperature (°C)	Operating Temperature (°C)	Storage Temperature (°C)
	Symbol	I <sub>F</sub>	P <sub>D</sub>	T <sub>j</sub>	T <sub>opr</sub>	T <sub>stg</sub>
CMDA37CW15D13L	Pure White	0.8	3.2	125	-30~+85	-40~+120
CMDA37WW15D13L	Warm White	0.8	3.2	125	-30~+85	-40~+120
CMDA37CB15D13L	Blue	0.8	3.2	125	-30~+85	-40~+120
CMDA37AG15D13L	Green	0.8	3.2	125	-30~+85	-40~+120
CMDA37AR15D13L	Red	0.8	2.4	100	-30~+85	-40~+120
CMDA37GB15D13L	Cyan	0.8	3.9	125	-30~+85	-40~+120
CMDA37DY15D13L	Amber	0.8	2.4	100	-30~+85	-40~+120

**\*Notes:**

- [1] ΦV is the total luminous flux output as measured with an integrating sphere.
- [2] Zener diode chip included to protect the LED from ESD.
- [3] Rθ is measured with a metal core PCB (25 °C ≤T<sub>J</sub> ≤ 125 °C).
- [4] CML maintains a tolerance of ± 10% on flux and power measurements.
- [5] CCT ± 5% tester tolerance.
- [6] Color Coordinate Measurement allowance is ± 0.005
- [7] A tolerance of ± 0.006V on forward voltage measurements

**-----Caution-----**  
**Please do not drive at rated current more than 5 sec. without proper heat sink**



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**5. Electro-Optical Characteristics (at IF=350mA, TA=25°C)**

**CMDA38xx15D13L Square PCB series**

P/N	Description	Luminous Flux Min./Typ. (lm)	Correlated Color Temperature (Kelvin)	CRI	Dominant Wavelength (nm) Min./Typ./Max.	Forward Voltage (volts) Min./Typ./Max.	View Angle (degrees)	Thermal resistance (°C /W)
	Symbol	ΦV [1]	CCT [3]	Ra	λD	V	2Θ 1/2	Rθ [4]
CMDA38CW15D13L	Pure White	70 / 103	6500	76		3.0 / 3.4 / 4.3	110	9.1
CMDA38WW15D13L	Warm White	54 / 60	3000	76		3.0 / 3.4 / 4.3	110	9.1
CMDA38CB15D13L	Blue	14 / 18			455 / 460 / 475	3.0 / 3.4 / 4.3	130	9.1
CMDA38AG15D13L	Green	54 / 93			520 / 527 / 535	3.0 / 3.4 / 4.3	130	9.1
CMDA38AR15D13L	Red	54 / 60			620 / 625 / 630	2.0 / 2.5 / 3.0	128	13
CMDA38GB15D13L	Cyan	54 / 78			500 / 505 / 510	3.0 / 3.4 / 4.3	130	9.1
CMDA38DY15D13L	Amber	54 / 75			585 / 590 / 595	2.0 / 2.5 / 3.0	128	13

**6. Absolute Maximum Ratings (at TA=25°C)**

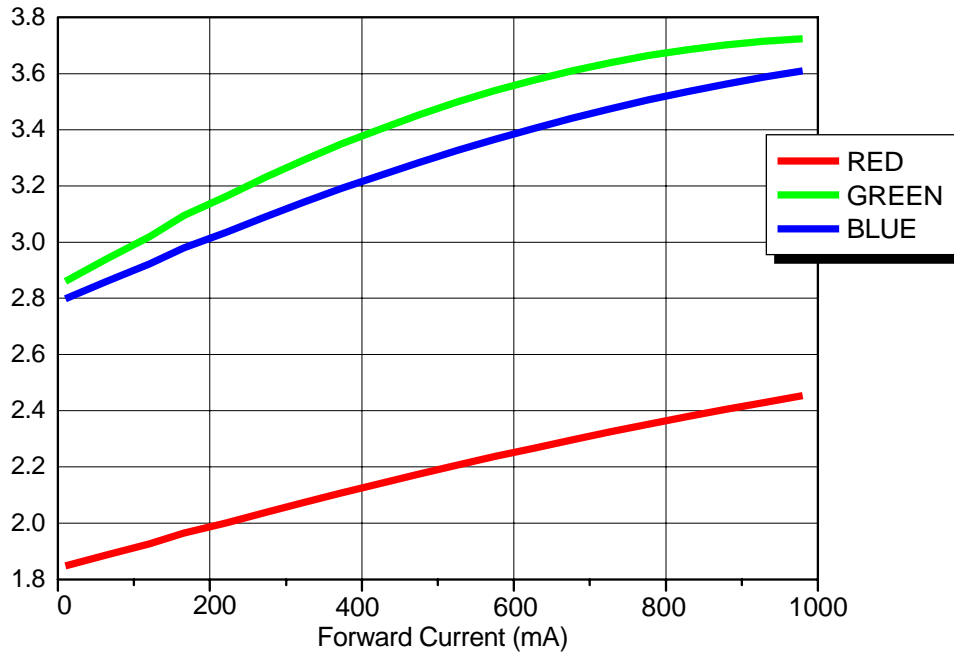
P/N	Description	Forward Current (A)	Power Dissipation (Watts)	Junction Temperat ure (°C)	Operating Temperature (°C)	Storage Temperature (°C)
	Symbol	IF	PD	Tj	Topr	Tstg
CMDA38CW15D13L	Pure White	0.8	3.2	125	-30~+85	-40~+120
CMDA38WW15D13L	Warm White	0.8	3.2	125	-30~+85	-40~+120
CMDA38CB15D13L	Blue	0.8	3.2	125	-30~+85	-40~+120
CMDA38AG15D13L	Green	0.8	3.2	125	-30~+85	-40~+120
CMDA38AR15D13L	Red	0.8	2.4	100	-30~+85	-40~+120
CMDA38GB15D13L	Cyan	0.8	3.9	125	-30~+85	-40~+120
CMDA38DY15D13L	Amber	0.8	2.4	100	-30~+85	-40~+120

**\*Notes:**

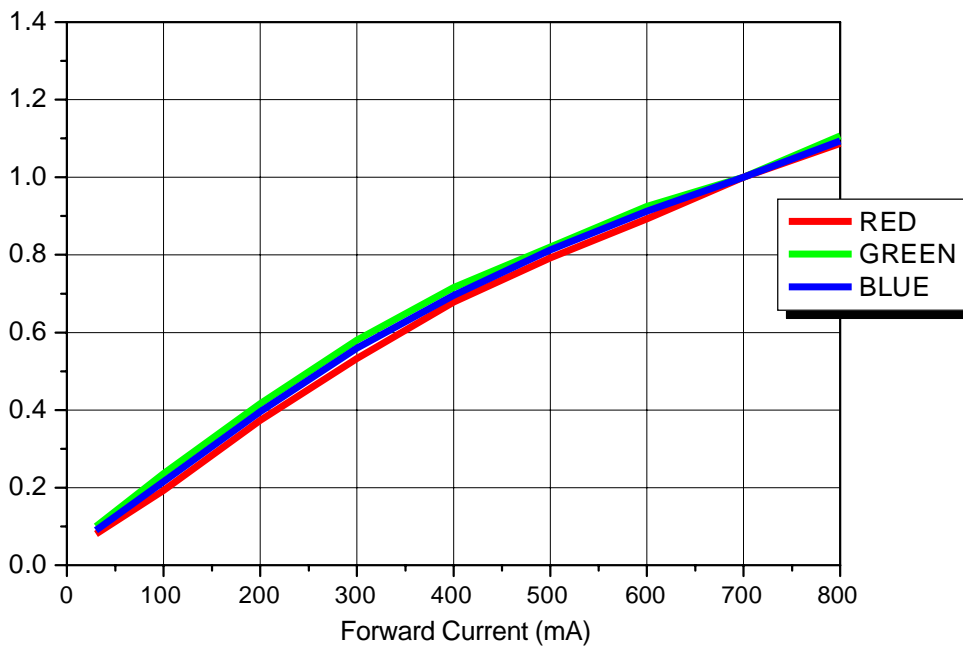
- [1] ΦV is the total luminous flux output as measured with an integrating sphere.
- [2] Zener diode chip included to protect the LED from ESD.
- [3] Rθ is measured with a metal core PCB (25 °C ≤ TJ ≤ 125 °C).
- [4] CML maintains a tolerance of ± 10% on flux and power measurements.
- [5] CCT ± 5% tester tolerance.
- [6] Color Coordinate Measurement allowance is ± 0.005
- [7] A tolerance of ± 0.006V on forward voltage measurements

**-----Caution-----**  
**Please do not drive at rated current more than 5 sec. without proper heat sink**

**7. Forward Voltage vs. Forward Current (Ta=25 °C)**



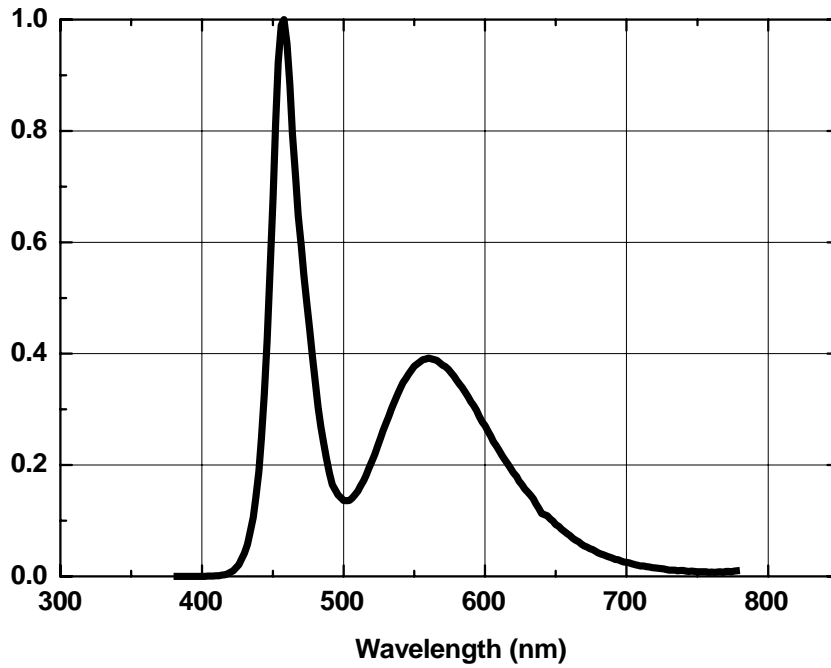
**8. Forward Current vs. Normalized Relative Luminous Flux (Ta=25 °C)**



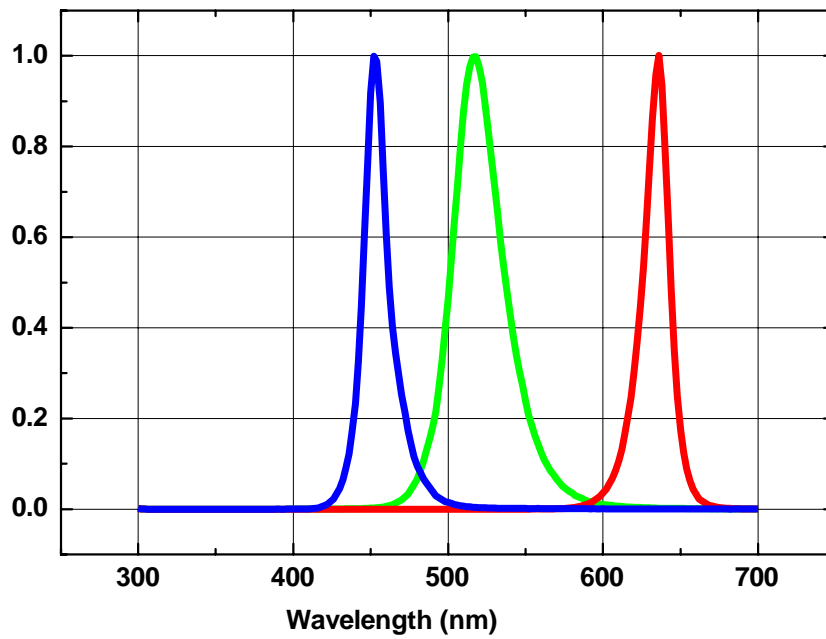
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### 9. White Color spectrum of Typical CCT (Ta=25°C)



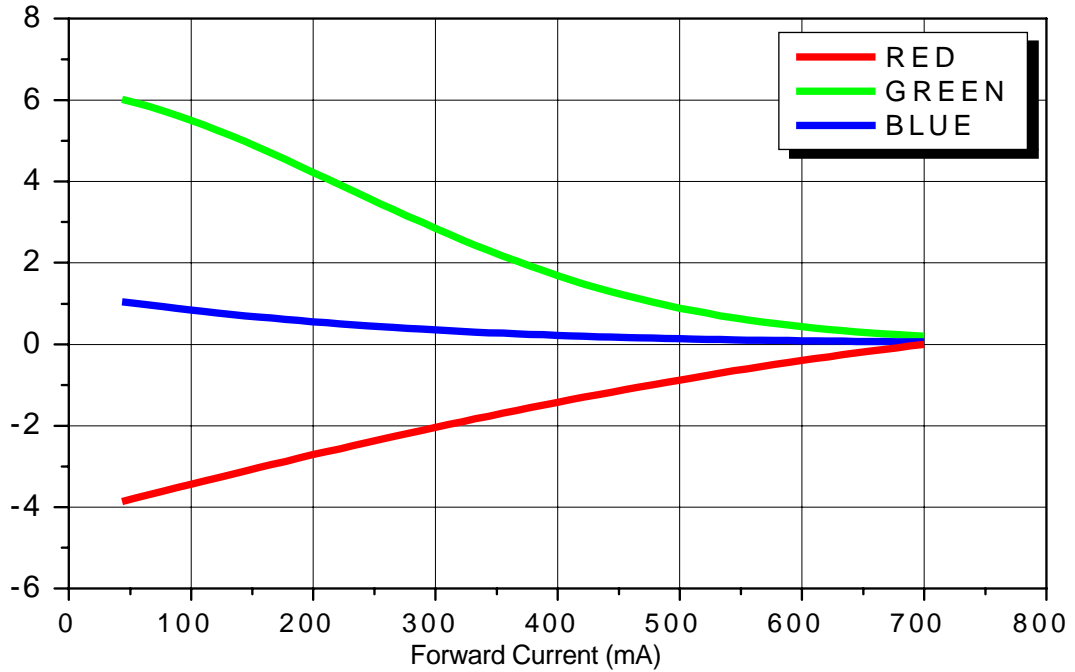
### 10. Wavelength Curve for Red, Green, Blue



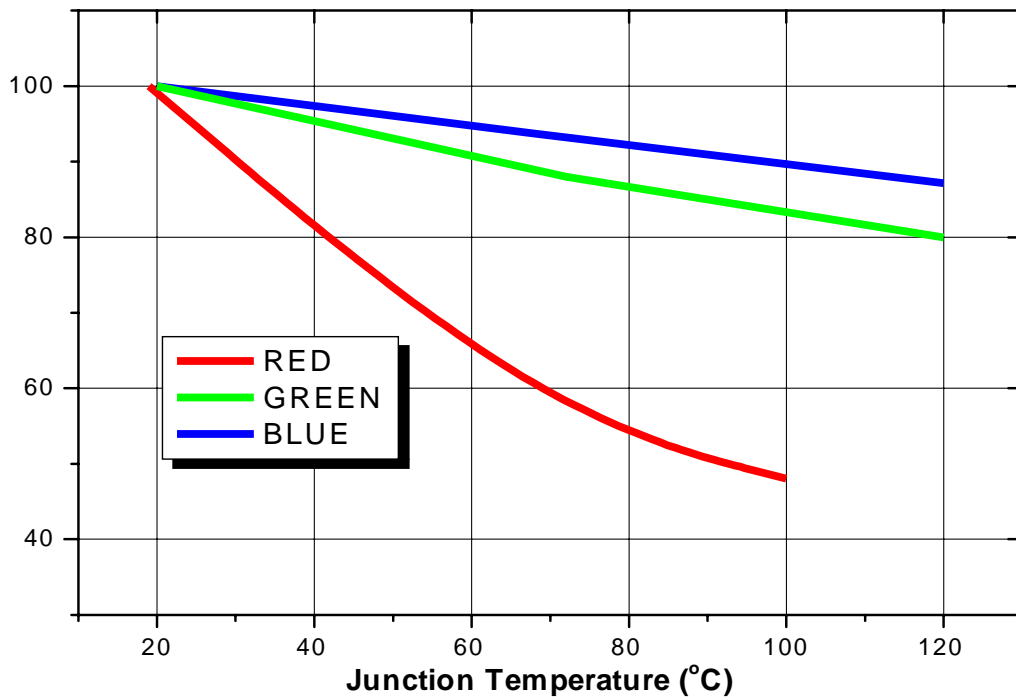
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**12. Forward Current vs. Wavelength shift (Ta=25°C)**

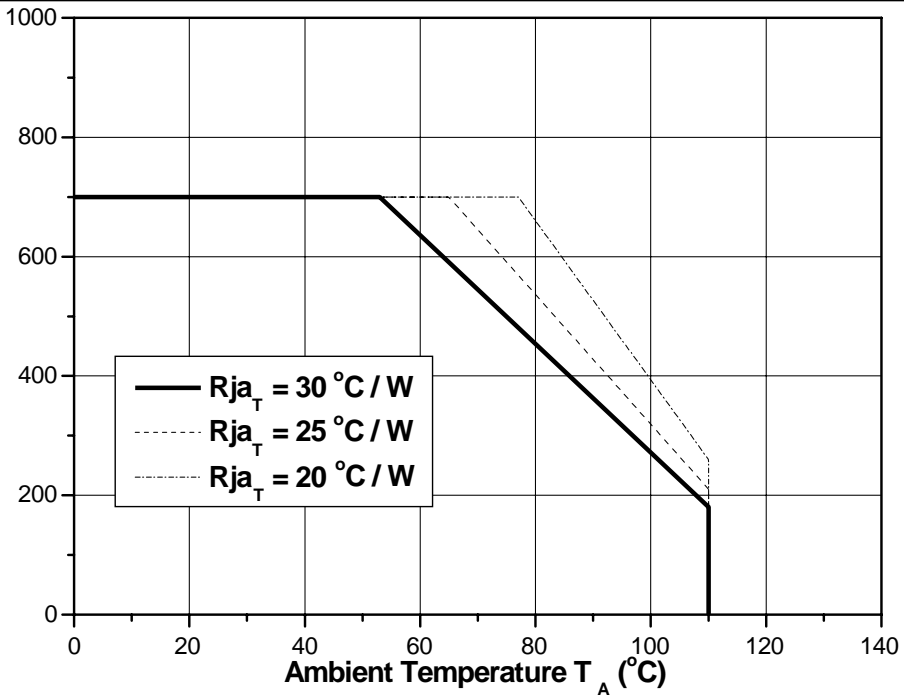


**13. Temperature of Junction vs. Relative Light Output for Blue, Green, Red (Ta=25°C)**

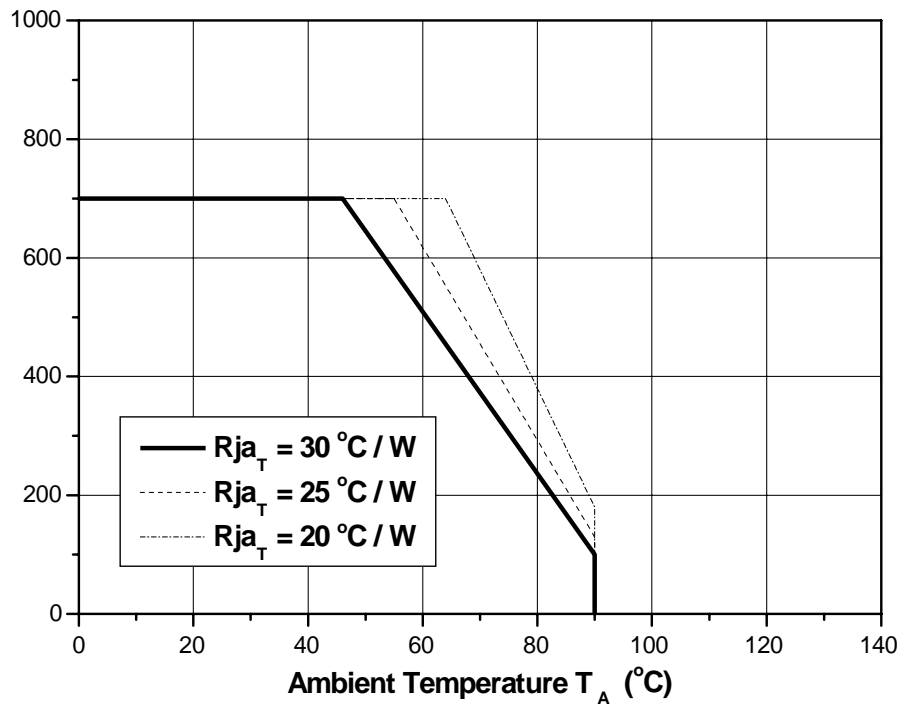




**14. Ambient Temperature vs. Allowable Forward Current for 2 chip White, Blue, Green, Cyan**



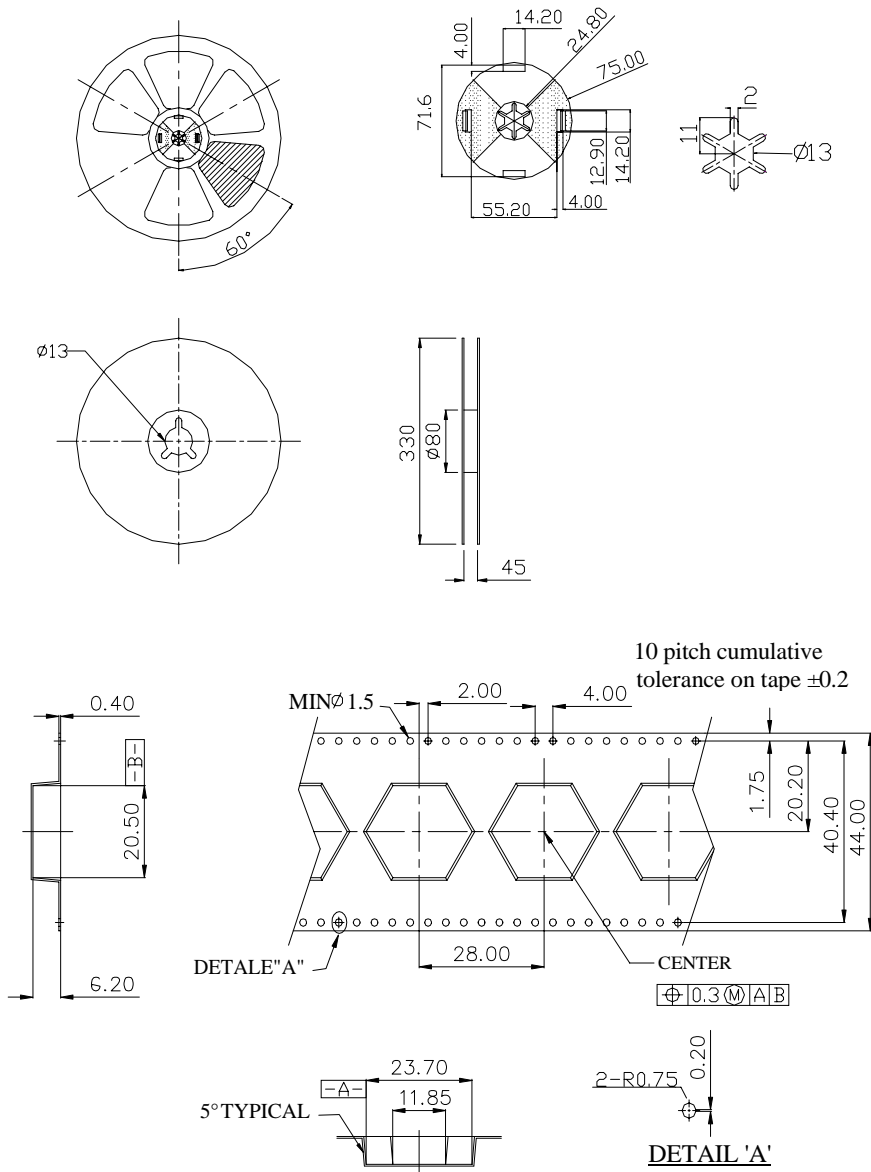
**15. Ambient Temperature vs. Allowable Forward Current for 2 chip Red,**



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## 16. Reel Packaging Dimensions (Star type)



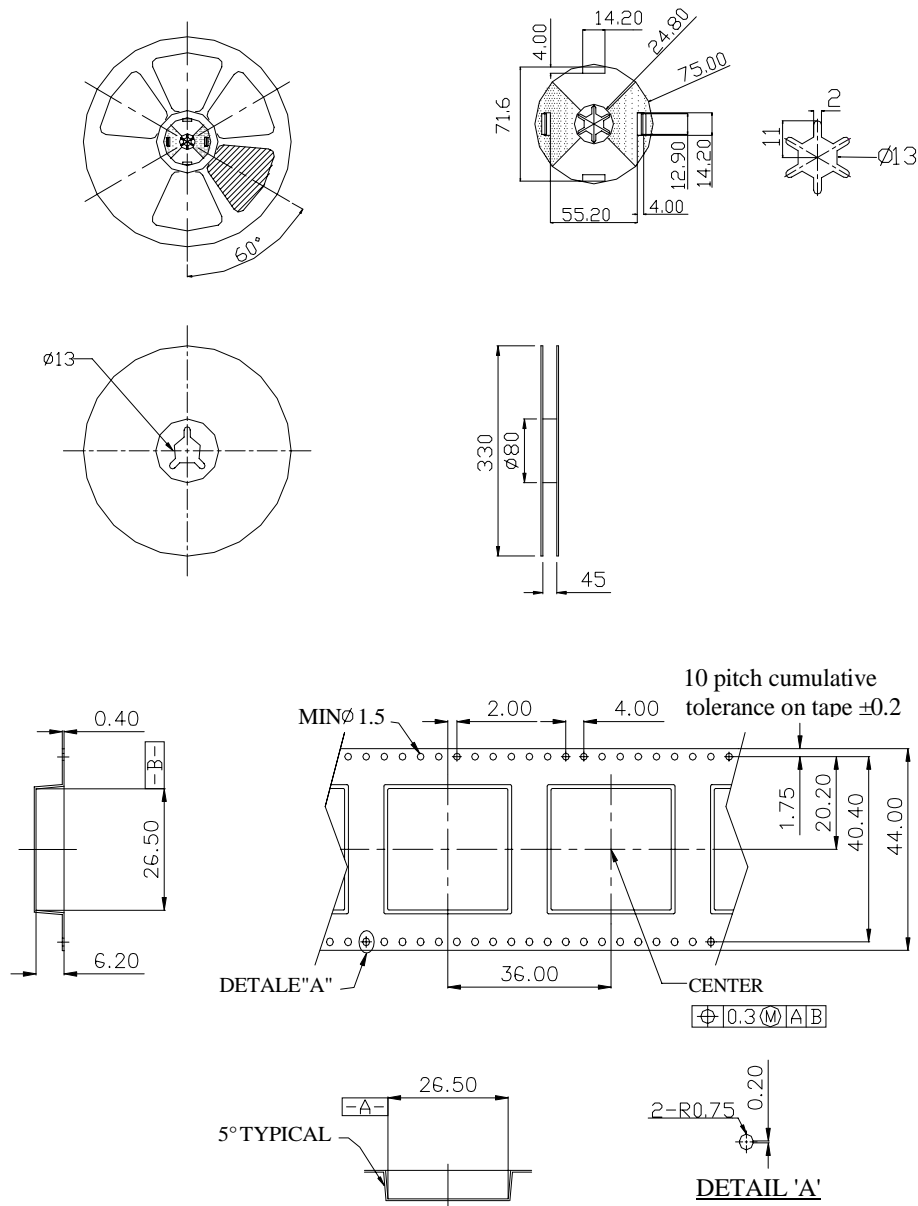
- Note : 1. The number of loaded products in the reel is 350ea  
 2. All dimensions are in millimeters  
 3. Scale : none  
 4. This drawing is reference only engineering



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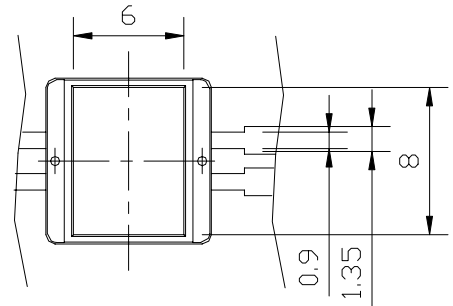
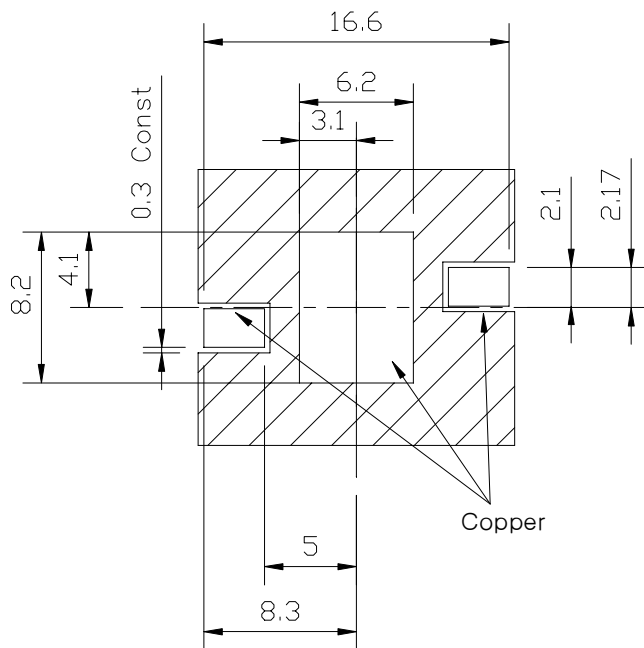
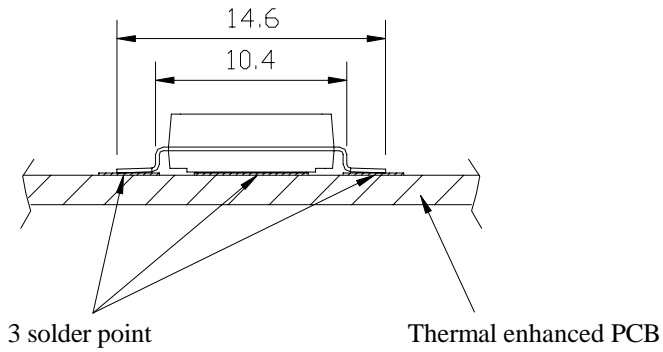
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## 17. Reel Packaging Dimensions (Square type)



- Note : 1. The number of loaded products in the reel is 200ea  
 2. All dimensions are in millimeters  
 3. Scale is none  
 4. This is drawing is reference only engineering

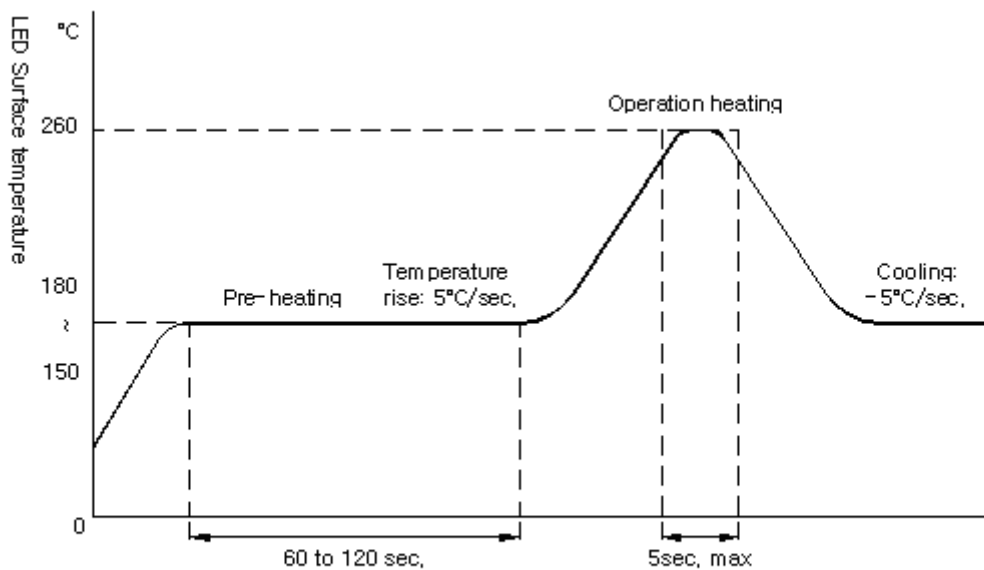
## 18. Recommended solder pad



<Rear view>

## 19. Soldering Profile

- (1) Reflow Soldering Conditions / Profile  
Preliminary heating to be at 180°C max. for 2 minutes max.  
Soldering heat to be at 260°C max. for 5 seconds max.



- (2) Hand Soldering conditions  
-Lead : Not more than 3 seconds @MAX280°C, under Soldering iron.

Should soldered products be reused during the soldering process, CML-IT voids all liability on the SMT LED units.



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