

**CML****INNOVATIVE TECHNOLOGIES, INC.****WHERE INNOVATION COMES TO LIGHT**Americas

147 Central Avenue
Hackensack, NJ 07601
(201) 489-8989
www.cml-it.com

Europe

Robert Bunsen Str. 1
D-67098 Bad Dürkheim
+49 (6322) 9567-0
www.cml-it.com

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

INNOVATIVE TECHNOLOGIES, INC.
WHERE INNOVATION COMES TO LIGHT

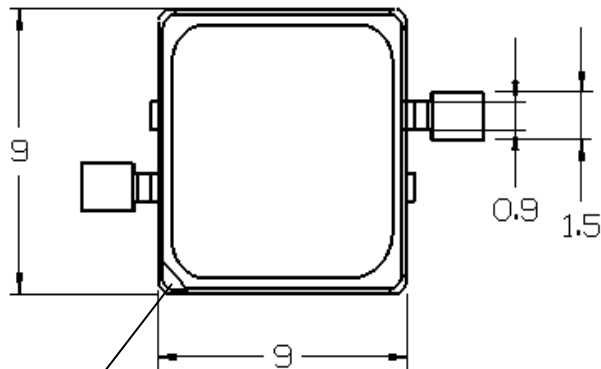
Americas

147 Central Avenue
Hackensack, NJ 07601
(201) 489-8989
www.cml-it.com

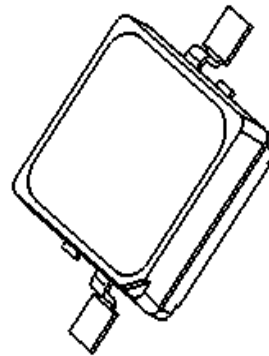
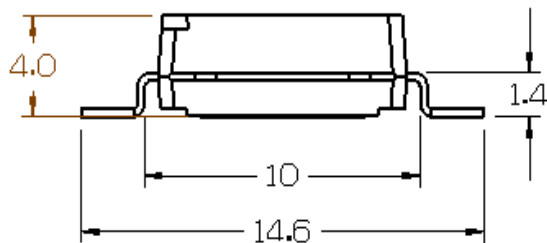
Europe

Robert Bunsen Str. 1
D-67098 Bad Dürkheim
+49 (6322) 9567-0
www.cml-it.com

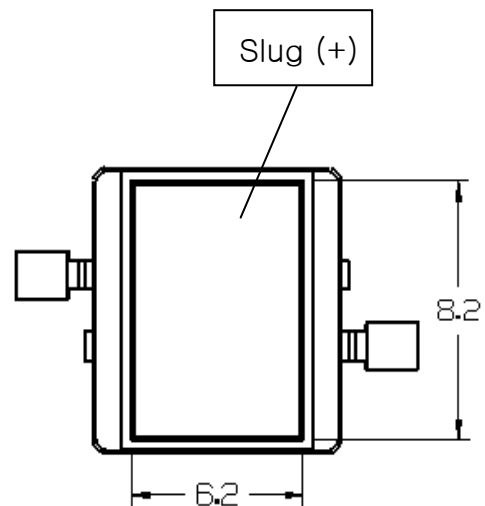
1. Outline Dimensions



Cathode
Mark



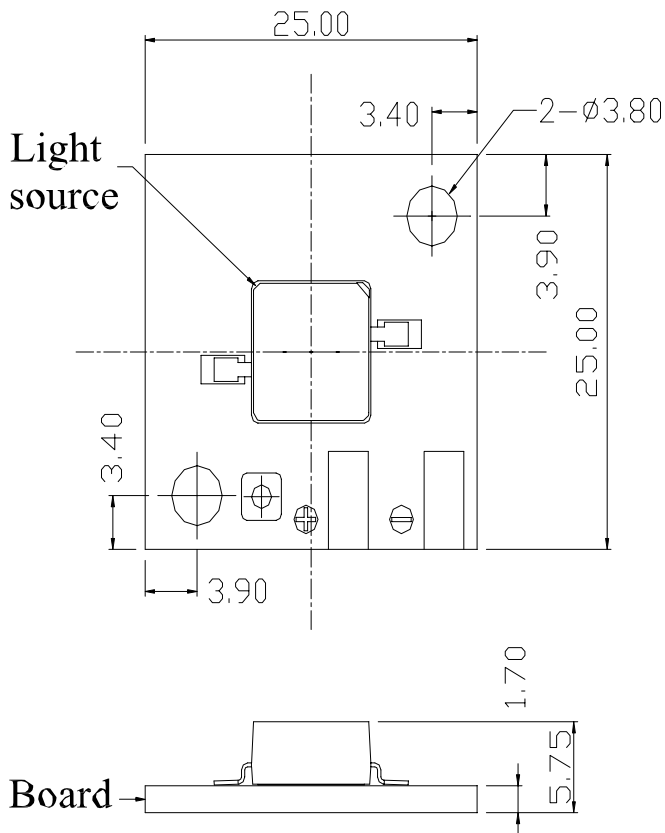
Isometric view
Scale: None



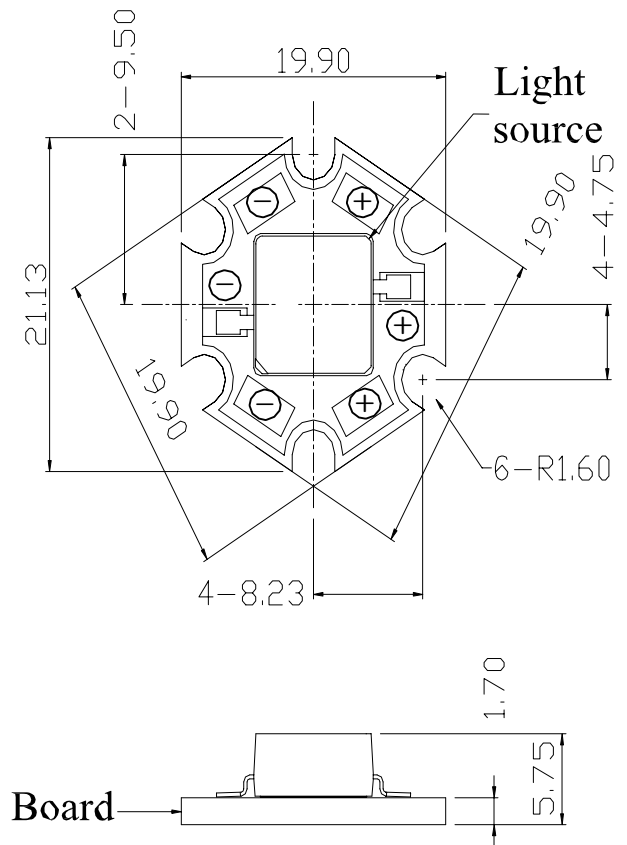
Rear view

- 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.

Americas

147 Central Avenue
 Hackensack, NJ 07601
 (201) 489-8989
www.cml-it.com

Europe

Robert Bunsen Str. 1
 D-67098 Bad Dürkheim
 +49 (6322) 9567-0
www.cml-it.com

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 _F | P _D | T _j | T _{opr} | T _{stg} |
| 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_J ≤ 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

Americas

147 Central Avenue
 Hackensack, NJ 07601
 (201) 489-8989
www.cml-it.com

Europe

Robert Bunsen Str. 1
 D-67098 Bad Dürkheim
 +49 (6322) 9567-0
www.cml-it.com

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 | Φ_V [1] | CCT [3] | Ra | λ_D | V | 2 θ 1/2 | R θ [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 Temperature (°C) | Operating Temperature (°C) | Storage Temperature (°C) |
|----------------|-------------|---------------------|---------------------------|---------------------------|----------------------------|--------------------------|
| | Symbol | I _F | P _D | T _J | T _{opr} | T _{stg} |
| 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] Φ_V is the total luminous flux output as measured with an integrating sphere.

[2] Zener diode chip included to protect the LED from ESD.

[3] R θ is measured with a metal core PCB (25 °C ≤ T_J ≤ 125 °C).

[4] CML maintains a tolerance of ± 10% on flux and power measurements.

[5] CCT ± 5% tester tolerance.

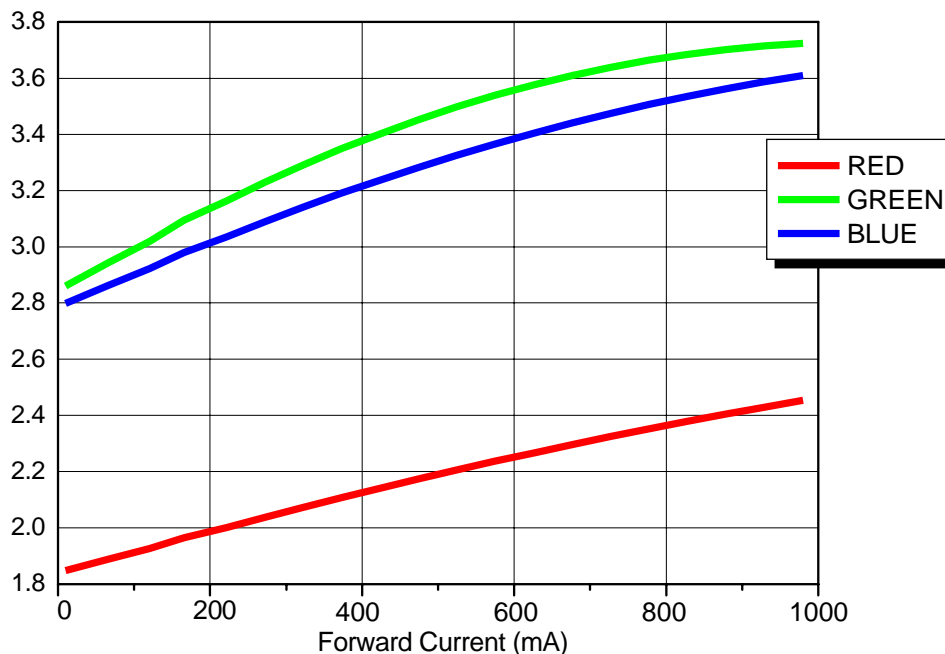
[6] Color Coordinate Measurement allowance is ± 0.005

[7] A tolerance of ± 0.006V on forward voltage measurements

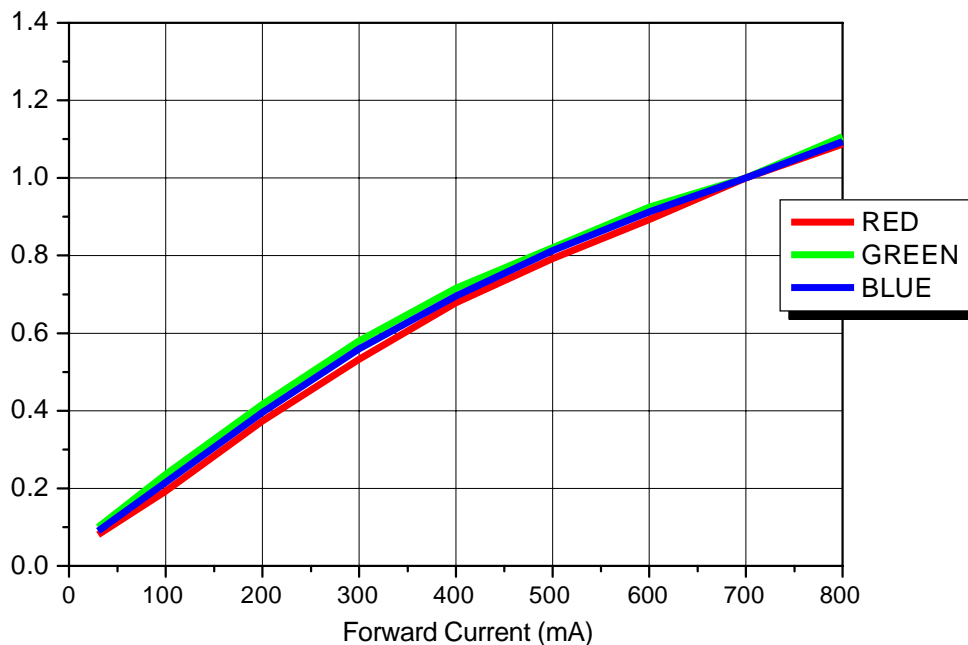
-----Caution-----

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

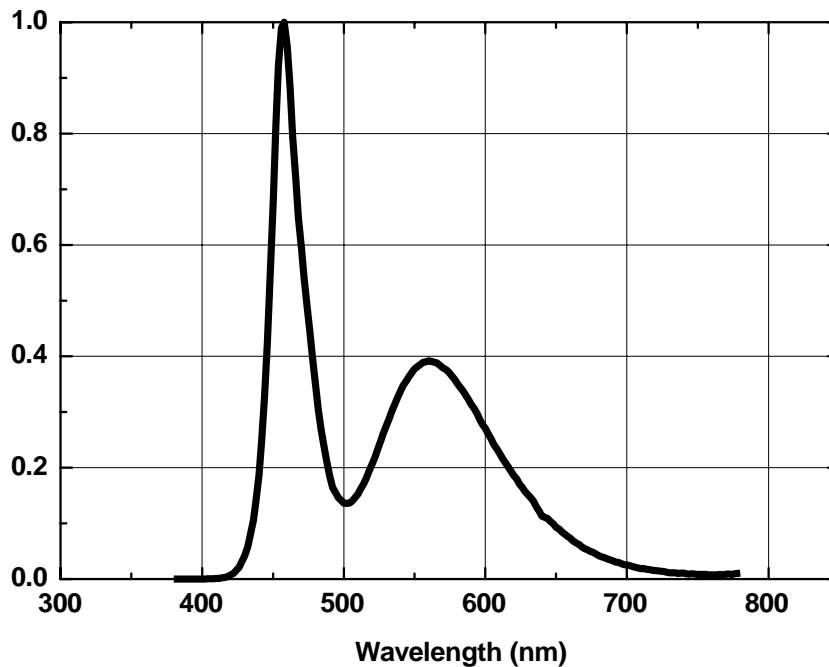
7. Forward Voltage vs. Forward Current (Ta=25°C)



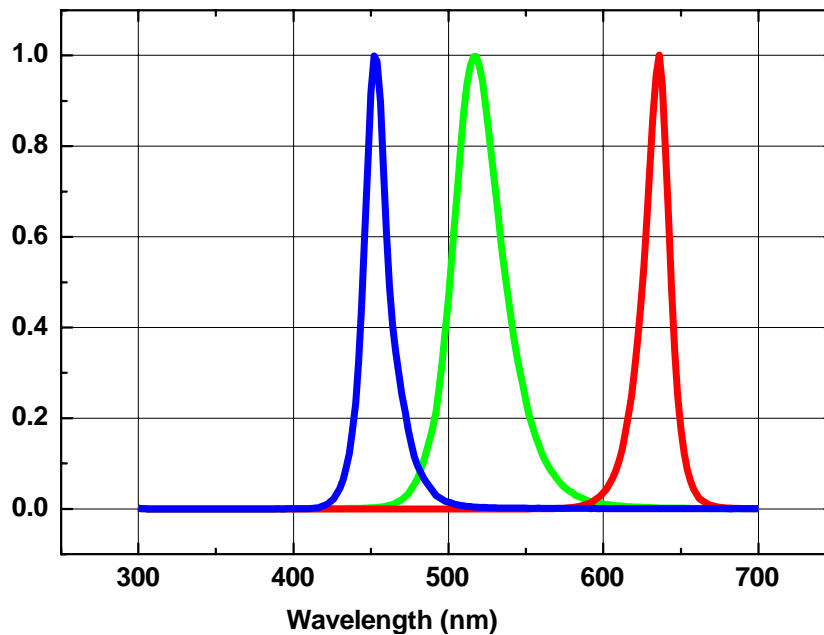
8. Forward Current vs. Normalized Relative Luminous Flux (Ta=25°C)



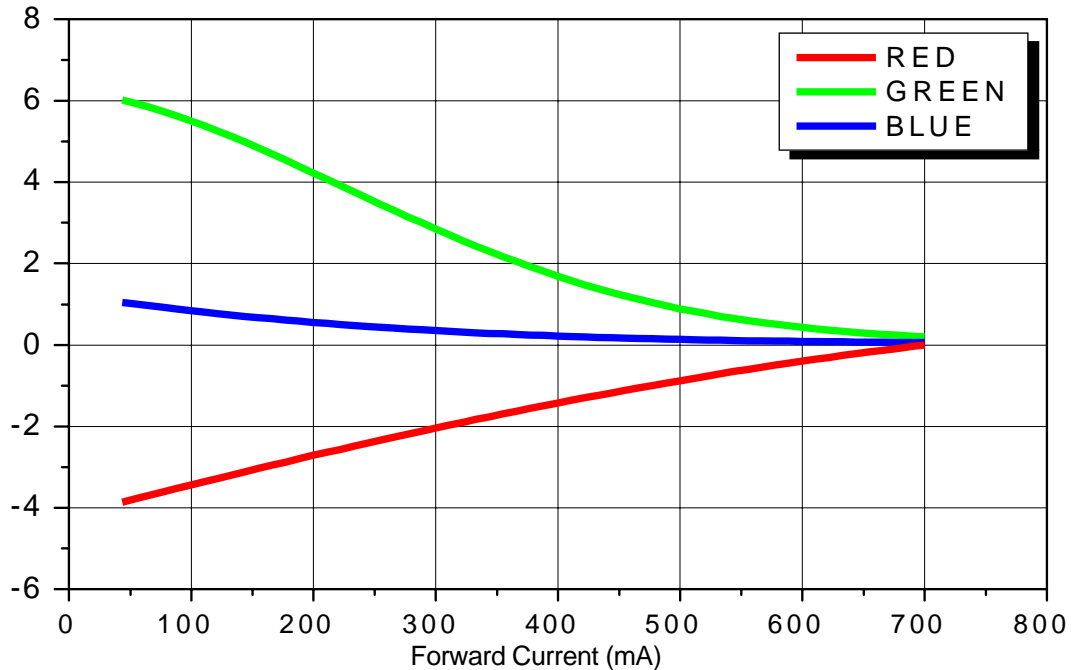
9. White Color spectrum of Typical CCT (Ta=25°C)



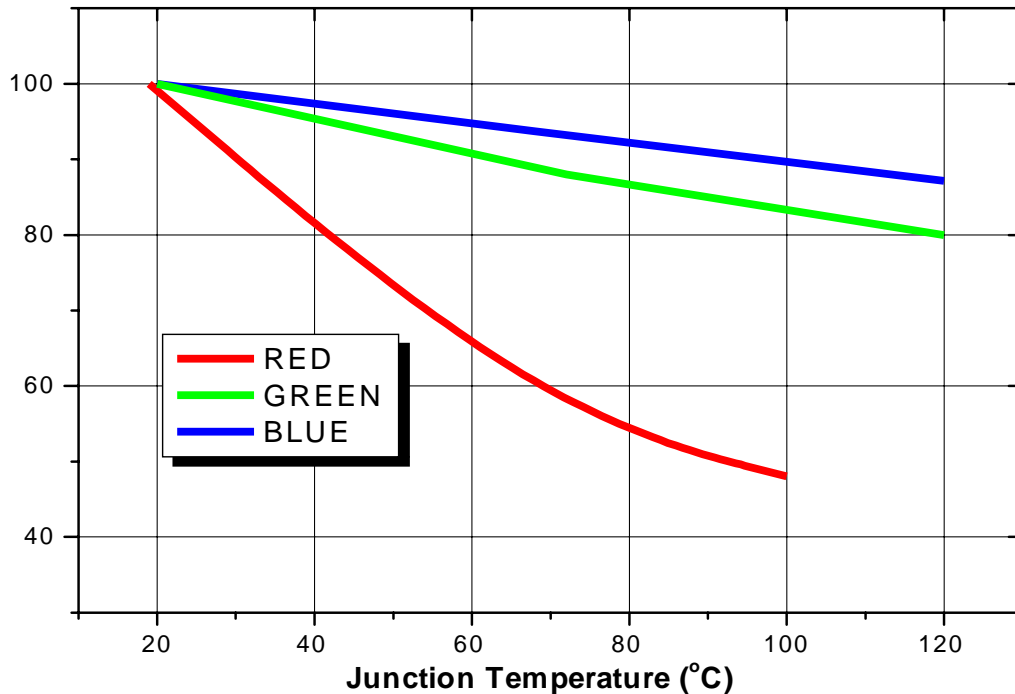
10. Wavelength Curve for Red, Green, Blue



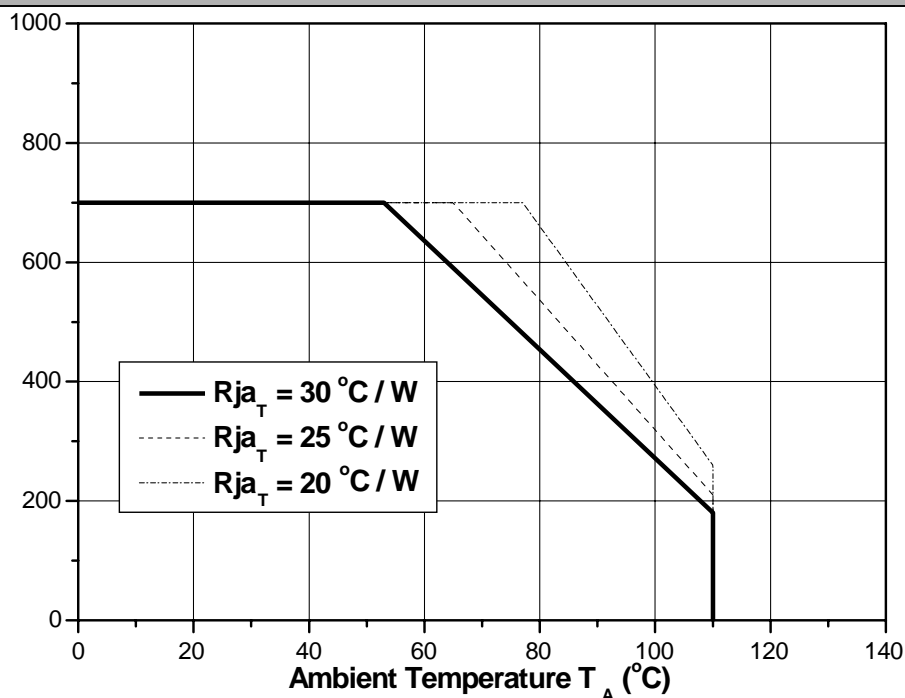
12. Forward Current vs. Wavelength shift ($T_a=25^\circ\text{C}$)



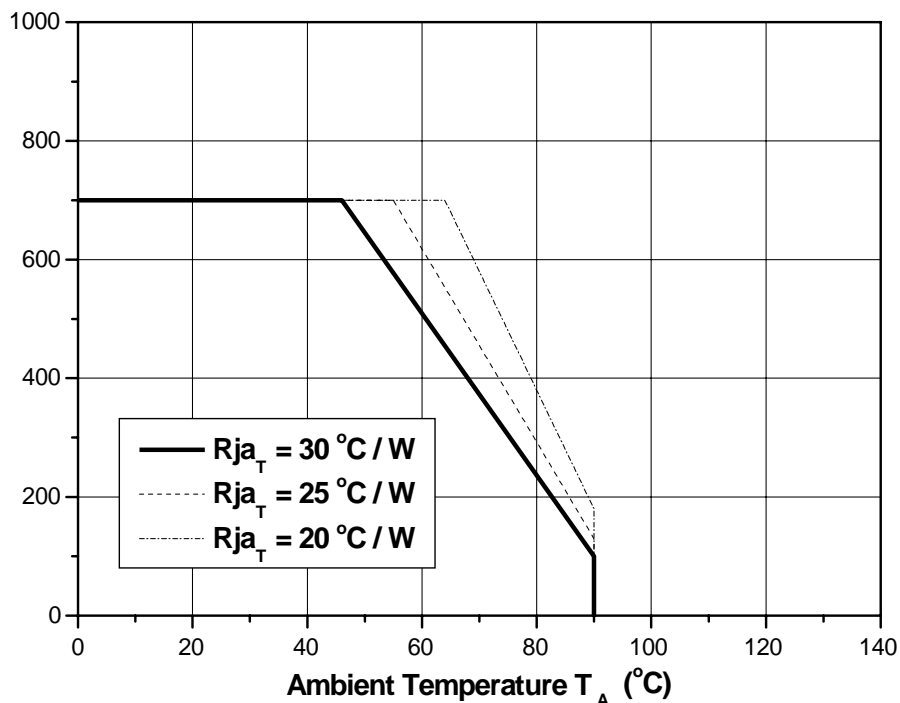
13. Temperature of Junction vs. Relative Light Output for Blue, Green, Red ($T_a=25^\circ\text{C}$)



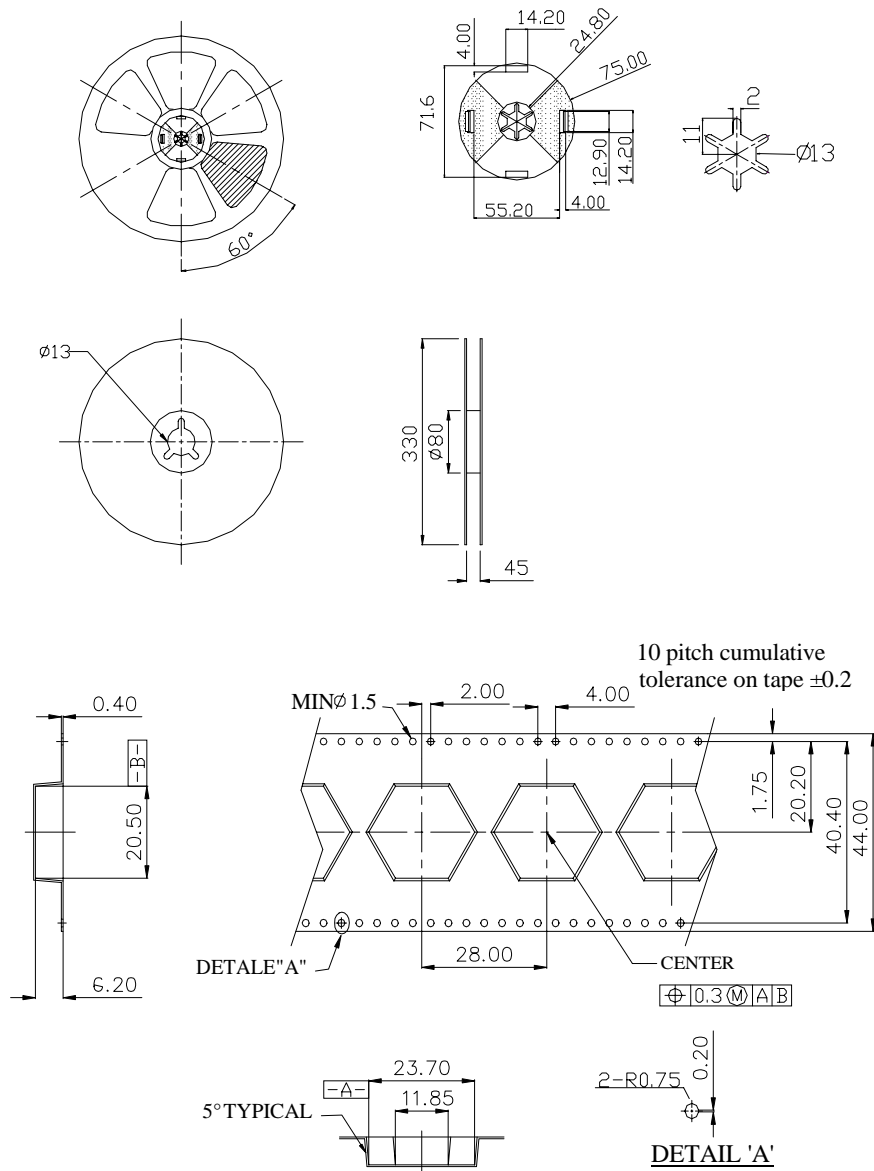
14. Ambient Temperature vs. Allowable Forward Current for 2 chip White, Blue, Green, Cyan



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



16. Reel Packaging Dimensions (Star type)



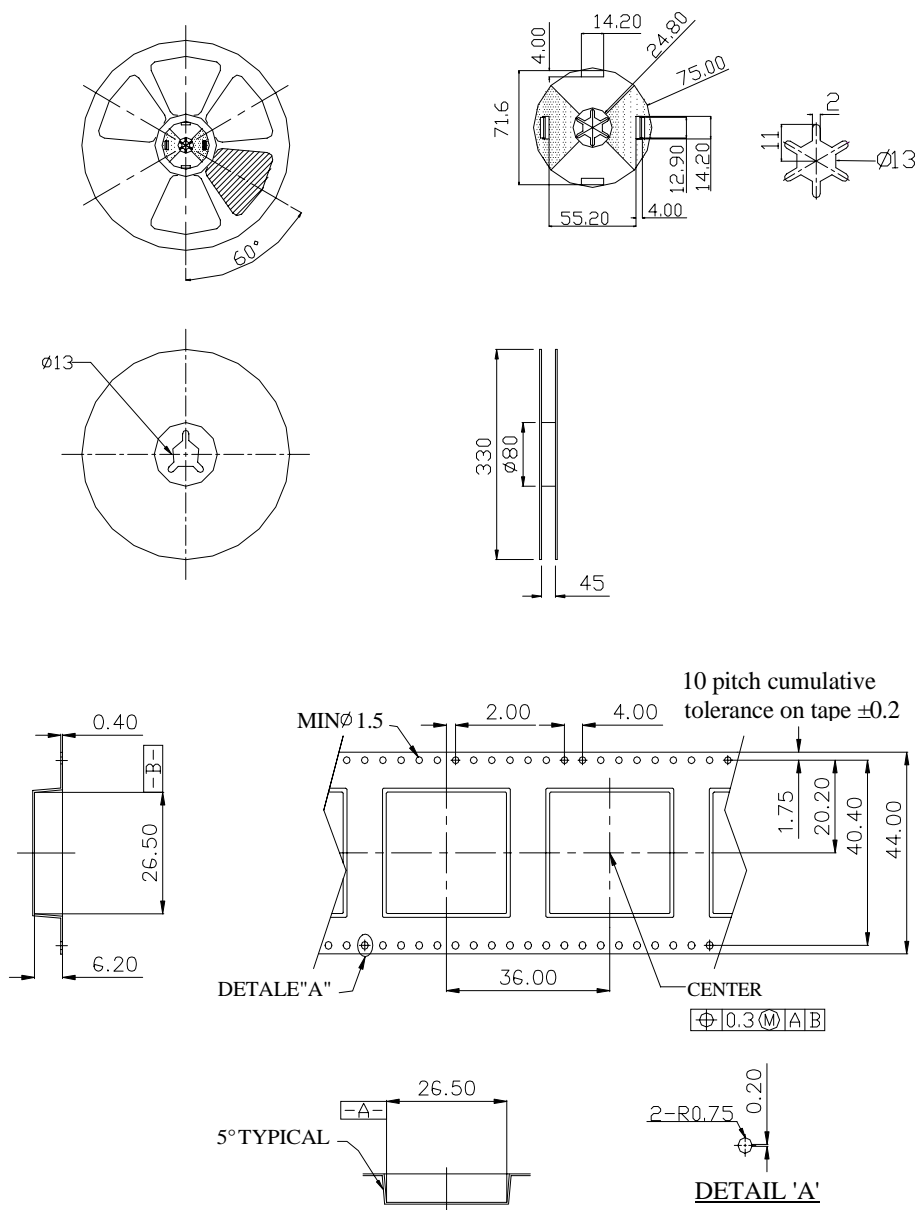
Note : 1. The number of loaded products in the reel is 350ea

2. All dimensions are in millimeters

3. Scale : none

4. This drawing is reference only engineering

17. Reel Packaging Dimensions (Square type)



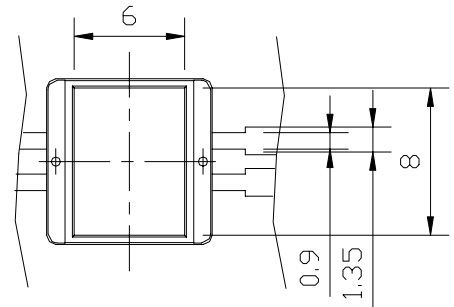
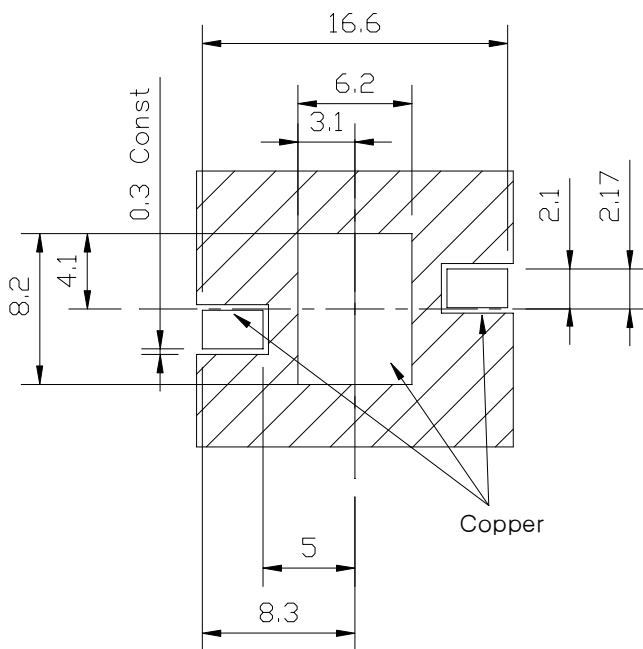
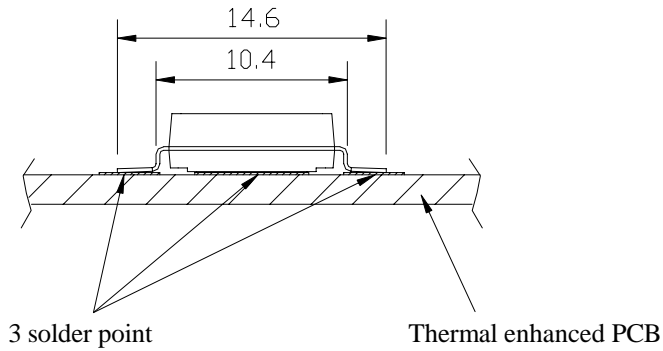
Note : 1. The number of loaded products in the reel is 200ea

2. All dimensions are in millimeters

3. Scale is none

4. This drawing is reference only engineering

18. Recommended solder pad



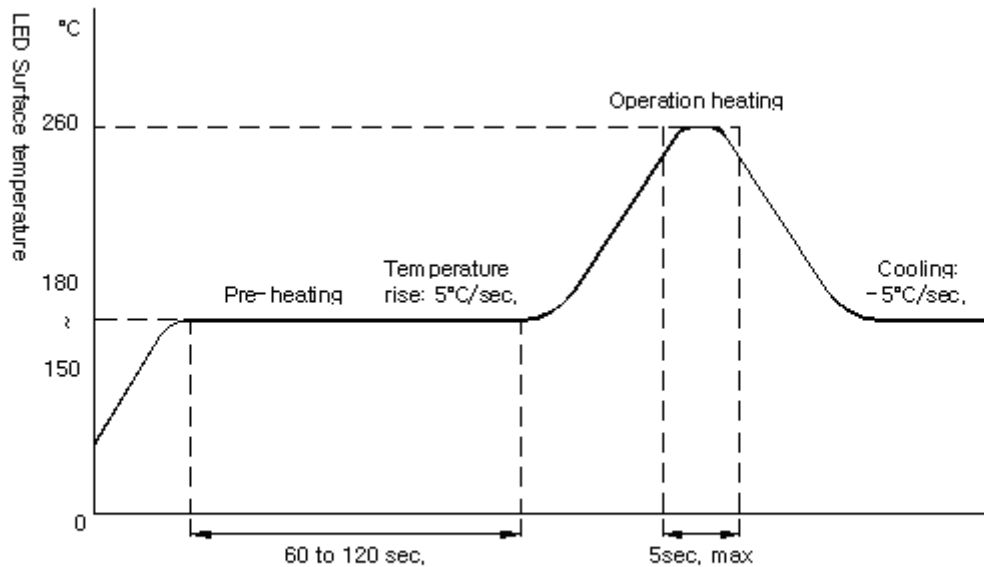
<Rear view>

19. Soldering Profile

(1) Reflow Soldering Conditions / Profile

Preliminary heating to be at 180°Cmax. for 2 minutes max.

Soldering heat to be at 260°Cmax. 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.