

IJFCOB13A Data Sheet



India's first LED Chip – Complying International Quality and Lighting Standards.

Description:

Indo Japan's F - COB series products use high quality silica gel packages with Aluminium Oxide Substrate which improves the heat dissipation, thus enhancing the performance and reliability of LED Chips.

F - COB series has low power consumption, high CRI, wide beam angle, long product life and less heat emission compared to traditional COBs which makes this series suitable for all forms of lighting applications.

Features:

- RoHS & CE Compliant
- Pb free
- Size : 13.5mm x 13.5mm x 1.6mm
- Viewing Angle : 120°
- COB LED
- High Lumen Output
- Low Power Consumption

Applications:

- Spot Light
- Down Light
- Façade Light
- Street Light
- Flood Light
- Automobile Headlamp

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Absolute Maximum Ratings ($T_{\text{Soldering}} / T_a = 25^{\circ}\text{C}$)

| Parameters | Symbol | Rating | Unit |
|--|--------------|--|-----------------------------|
| Max Forward Current | I_f | 350 | mA |
| Peak Pulse Current (Duty 1/10 @10ms) | I_{fp} | 420 | mA |
| Max. Power Dissipation | P_d | 6930 | mW |
| Operating Temperature | T_{opr} | -40 ~ +85 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{stg} | -40 ~ +100 | $^{\circ}\text{C}$ |
| Thermal Resistance (Junction / Soldering point) | $R_{th J-S}$ | 10 | $^{\circ}\text{C}/\text{W}$ |
| Junction Temperature | T_j | 130 | $^{\circ}\text{C}$ |
| Soldering Temperature | T_{sol} | Reflow Soldering : 260 $^{\circ}\text{C}$ for 10 sec. Hand Soldering : 350 $^{\circ}\text{C}$ for 3 sec. | |

Note:

1. The products are sensitive to static electricity and must be carefully taken when handling products.

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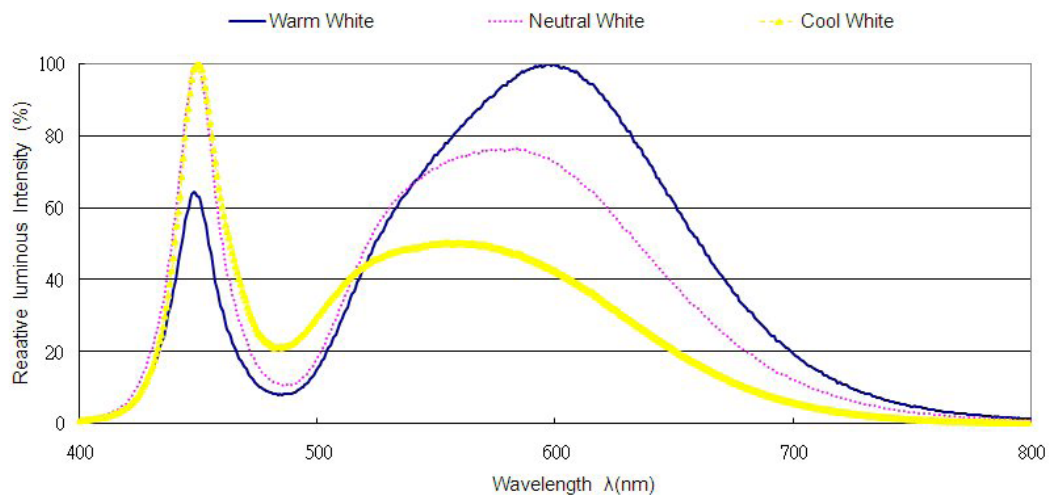


| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|-----------------|----------------|------|------|------|---------------|----------------------|
| Luminous Flux | Φ | | 702 | | lm | $I_f = 350\text{mA}$ |
| Forward Voltage | V_F | 17.8 | ... | 19.8 | V | $I_f = 350\text{mA}$ |
| CRI | Ra | 70 | 80 | 95 | | $I_f = 350\text{mA}$ |
| Viewing Angle | 2 θ 1/2 | ---- | 140 | ---- | deg | $I_f = 350\text{mA}$ |
| Reverse Current | I_R | ---- | ---- | 5.0 | μA | $V_r = 5\text{V}$ |

Notes:

1. Tolerance of Luminous flux: $\pm 11\%$.
2. Tolerance of Forward Voltage: $\pm 0.1\text{V}$.
3. Tolerance of Colour Rendering Index: ± 2

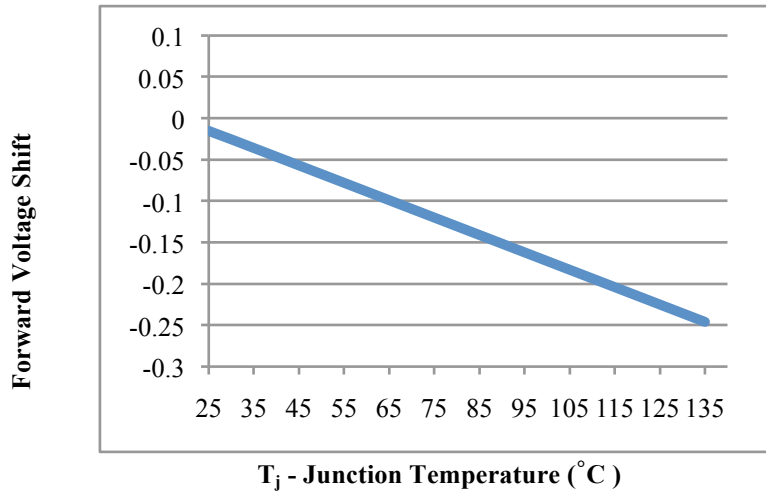
Spectrum Distribution



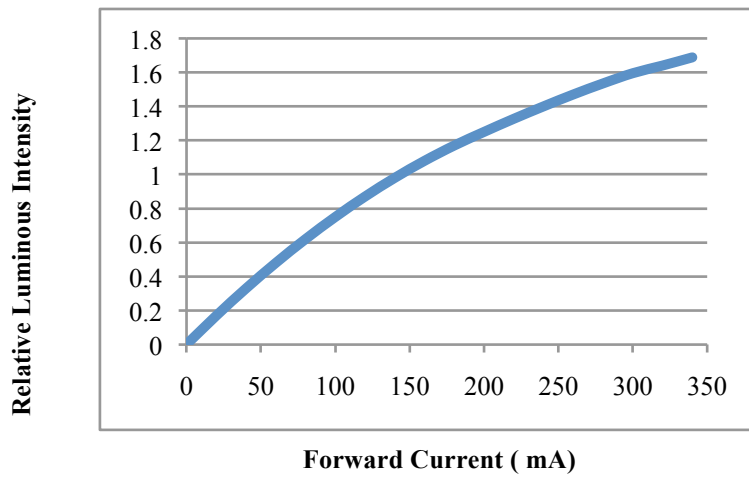
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Forward Voltage Shift vs Junction Temperature



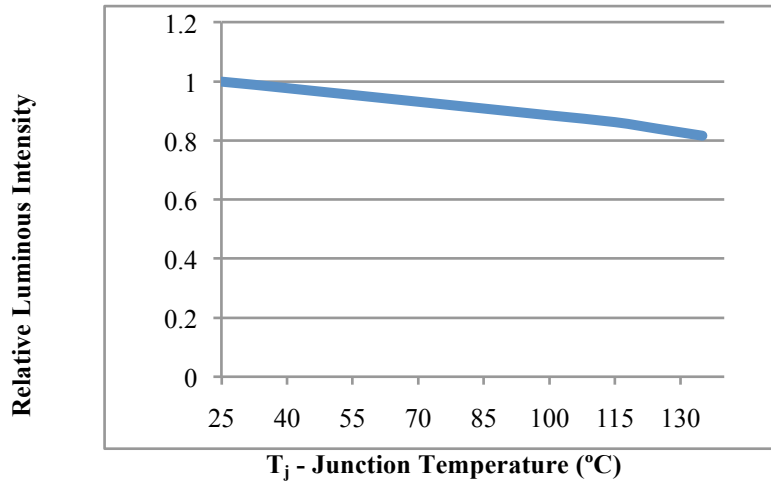
Relative Luminous Intensity vs Forward Current



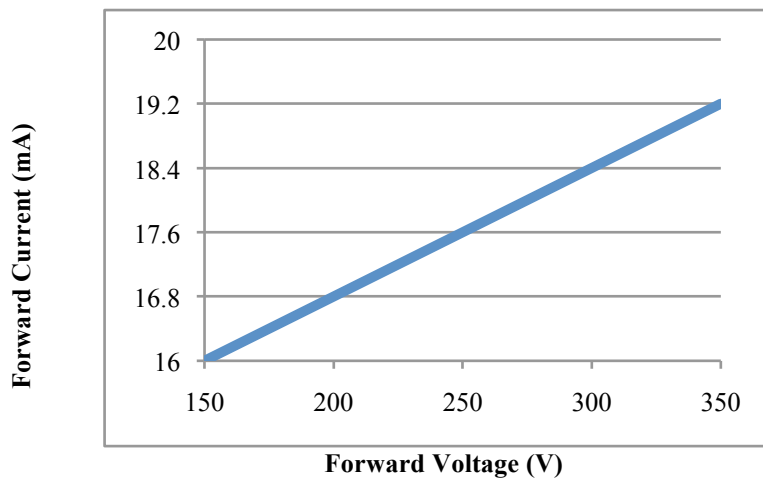
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Relative Luminous Intensity vs Junction Temperature



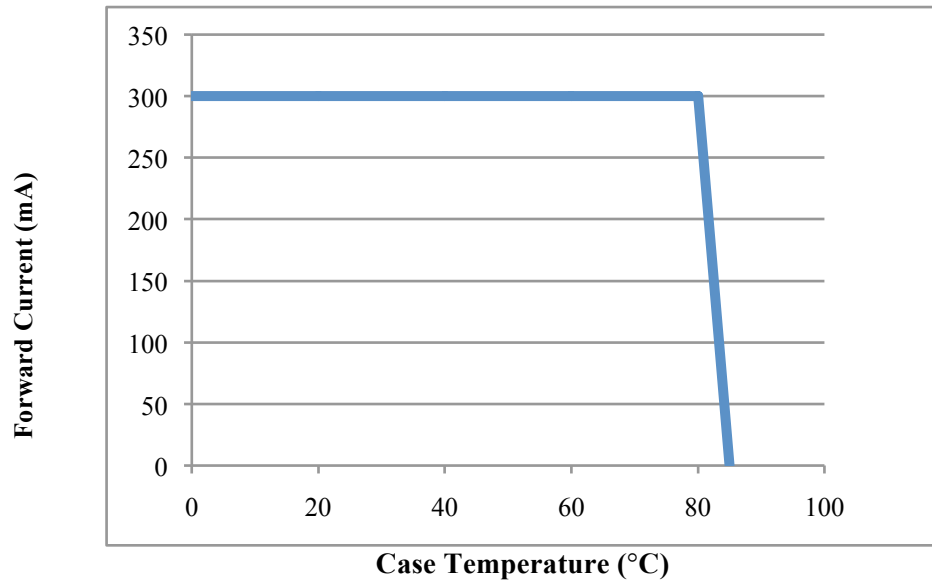
Forward Current vs. Forward Voltage



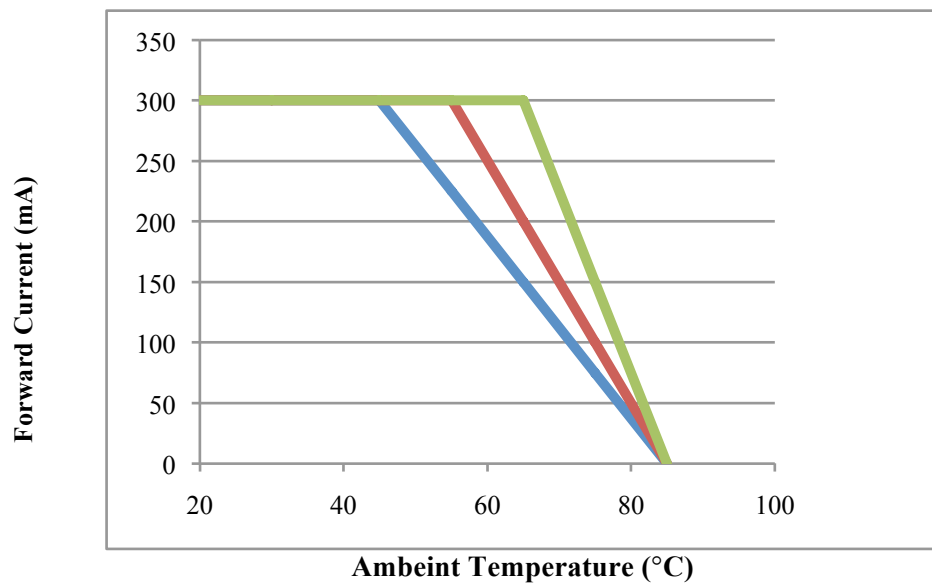
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Max Driving Forward Current vs Soldering Temperature



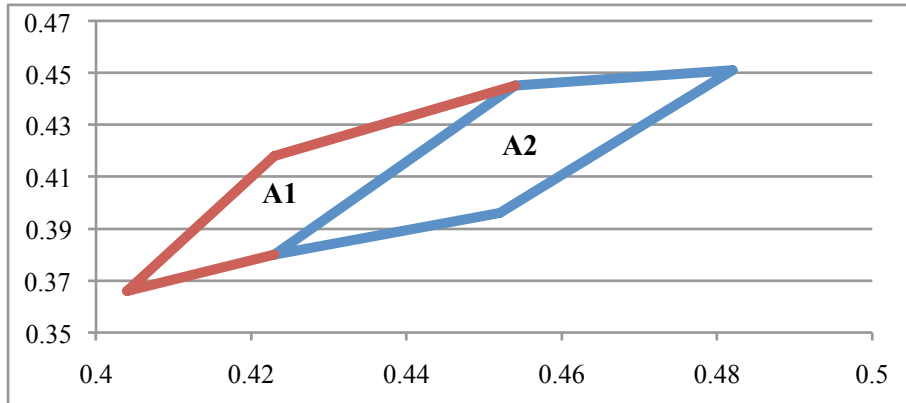
Max Driving Forward Current vs Ambient Temperature



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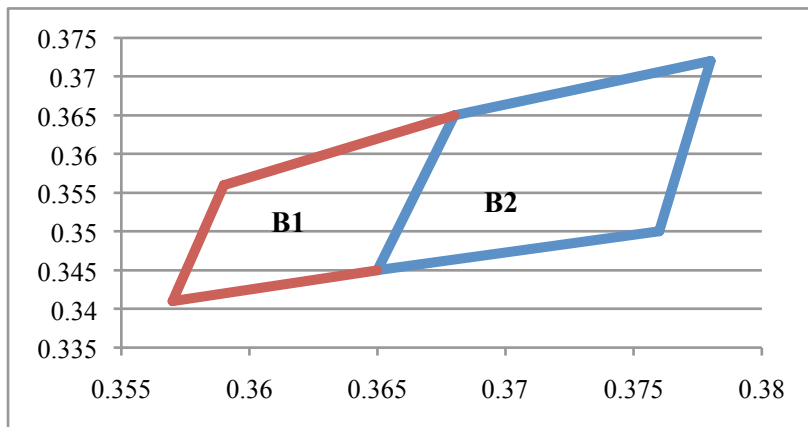


CCT – BIN FOR WARM WHITE LIGHT



| | |
|----------------|---------------------|
| BIN A 1 | 2700 – 3000K |
| BIN A 2 | 3000 – 3300K |
| BIN A 3 | 3300 – 3600K |
| BIN A 4 | 3600 – 3900K |

CCT – BIN FOR NATURAL WHITE

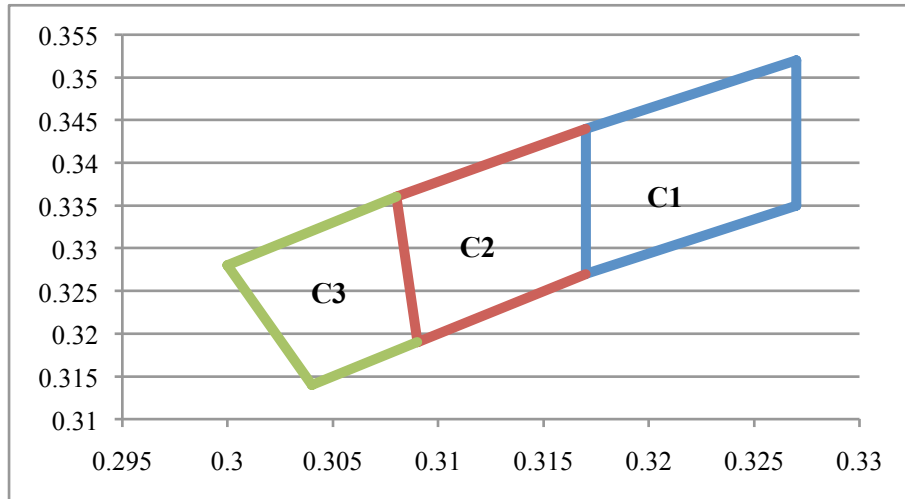


| | |
|----------------|---------------------|
| BIN B 1 | 3900 – 4200K |
| BIN B 2 | 4200 – 4500K |
| BIN B 3 | 4500 – 4800K |
| BIN B 4 | 4800 – 5300K |
| BIN B 5 | 5300 – 5800K |

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CCT – BIN FOR COOL WHITE

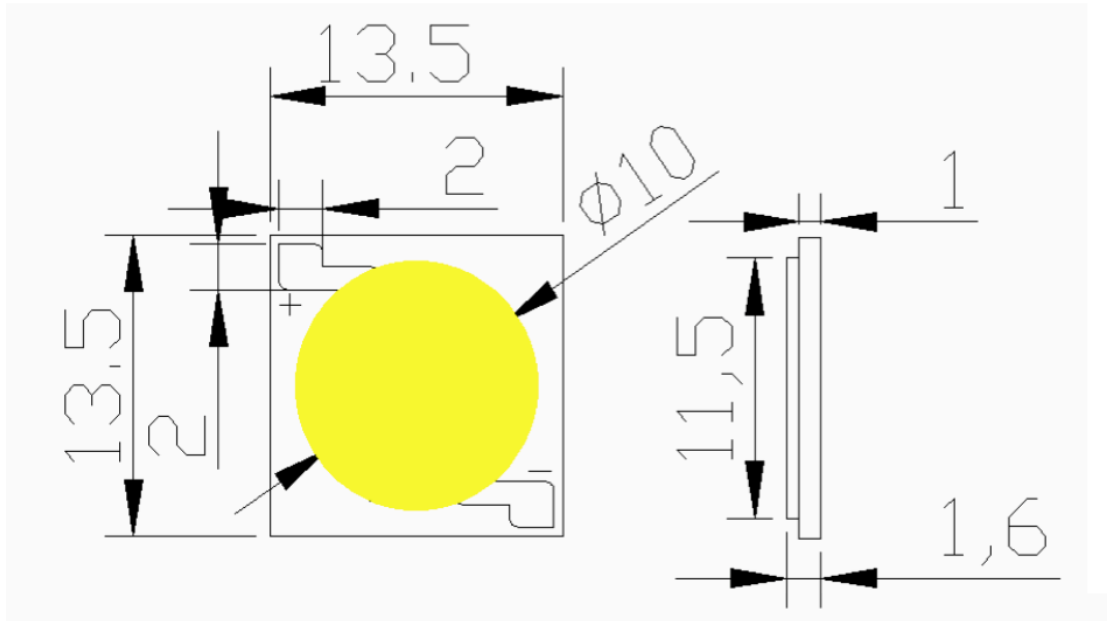


| | |
|----------------|---------------------|
| BIN C 1 | 5800 – 6200K |
| BIN C 2 | 6200 – 6600K |
| BIN C 3 | 6600 – 7000K |
| BIN C 4 | 7000 – 7500K |

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Package Dimension



Note:

Tolerance unless mentioned is ± 0.15 mm ; Unit = mm

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Notes for Hand Soldering

- Hand Soldering Parameters - 300°C for not more than 3 seconds
- Hand Soldering shouldn't be done more than once.
- Avoid using sharp objects for compressing LEDs
- Use of anti-static apparels while operating on LED Chips is recommended

Storage

Before opening vacuum packing

- LEDs can be stored for one year under temperature and humidity not exceeding 30°C and 60% RH.

After opening vacuum packing

- The LED's floor life is 168 Hrs under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.