violumas
High Power UV LED Solutions

325nm UVC LED

- SMD - medium power
- Chip on Board (COB)
- Applications Sets (LED, Heat Sink, Driver)

BostonElectronics

www.boselec.com
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shop.boselec.com
617.566.3821

WS5252C40L6-325-V1 | Mid Power 325nm SMD

The WS5252C40L6-325-V1 is a mid power surface-mount-device (SMD) UV LED with a peak wavelength of 325±5nm. The WS5252C40L6-325-V1 is packaged in a single-chip structure with a 60° fused silica lens and is ideal for mid power UV applications.

**WS5252C40L6-325-V1 is also available with 30°, 120°, and 135° lenses. Please contact Violumas for specifications regarding alternative LED beam angles.*

Features & Benefits

- Dimensions: 5.2mm x 5.2mm x 3.4mm
- Typical Peak Wavelength: 325nm
- Equipped with a 60° fused silica lens*

Electro-Optical Characteristics at I_F=350mA and T_A=25°C

Parameter	Symbol	Unit	Min	Typical	Max
Peak Wavelength	λ_P	nm	320	325	330
Forward Voltage	V_F	V	4.2	4.8	5.5
Radiant Flux	P_O	mW	65	80	-
Full Width of Half Magnitude	$\Delta\lambda$	nm	-	12	-
Radiant Angle	$2\Phi_{1/2}$	Degree	-	60	-
Thermal Resistance, Junction to Solder Joint	R_{th}(J-S)	°C/W	-	9	-

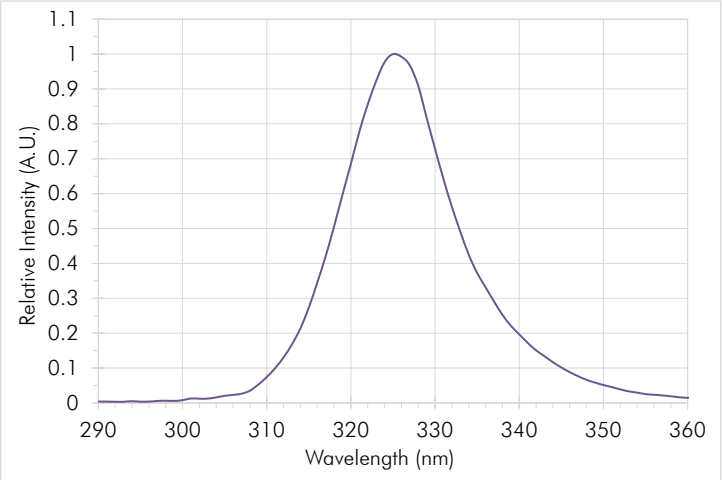
Peak Wavelength Tolerance: ±3nm; Forward Voltage Tolerance: 0.1V; Radiant Flux Tolerance: ±10%

Absolute Maximum Ratings

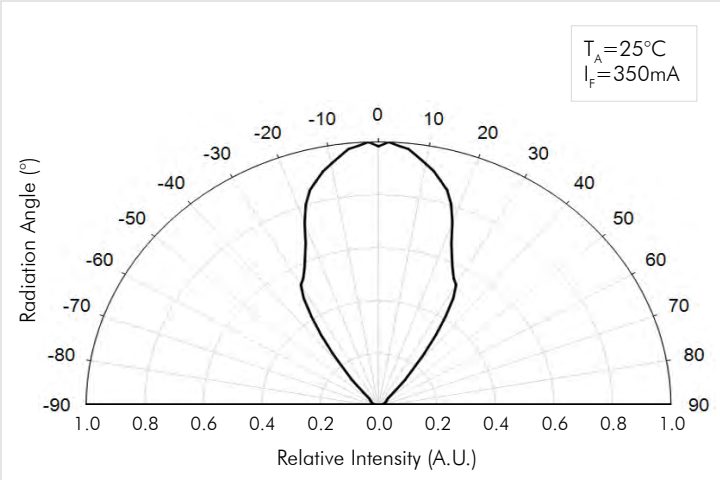
Parameter	Symbol	Unit	Value
Forward Current	I_F	mA	600
Reverse Voltage	V_R	V	5
Power	P_D	W	4
Junction Temperature	T_J	°C	90
Operating Temperature	T_{OPR}	°C	-30 ~ 85
Storage Temperature	T_{STG}	°C	-40 ~ 85

Note: Operating the LED at or above the listed absolute maximum ratings may affect device reliability and result in permanent LED failure.

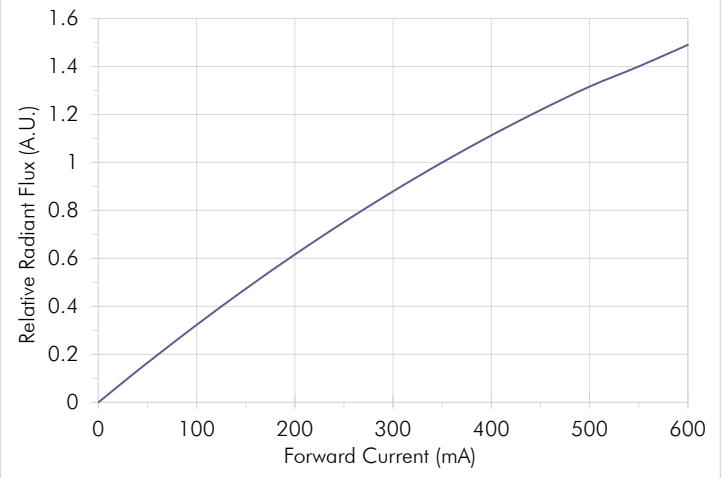
Spectral Output



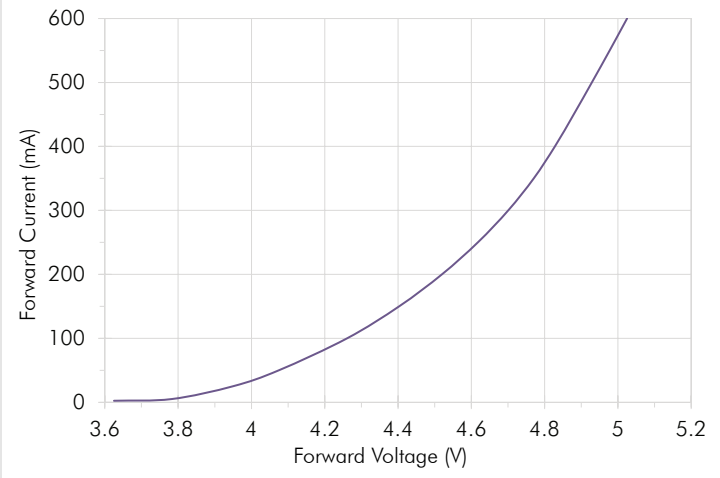
Radiation Pattern



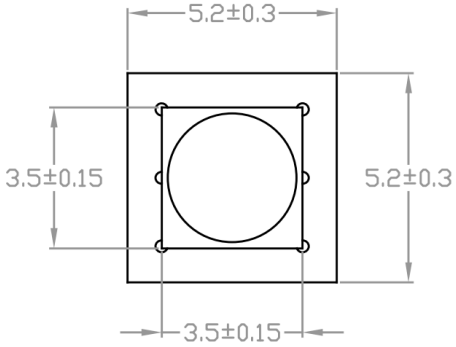
Forward Current vs. Relative Radiant Flux

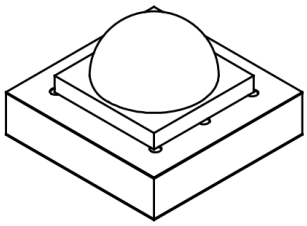


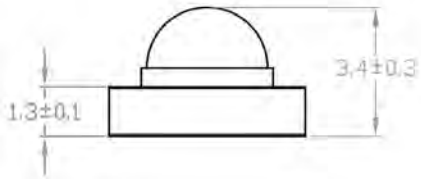
Forward Voltage vs. Forward Current

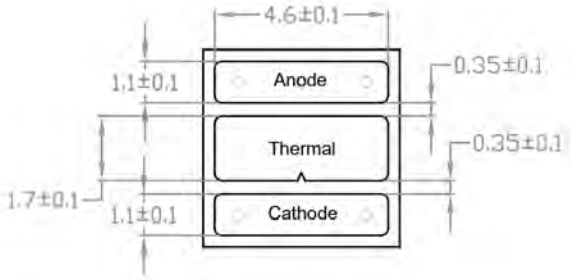


Mechanical Dimensions

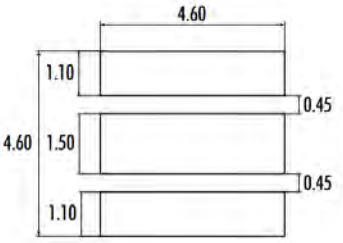






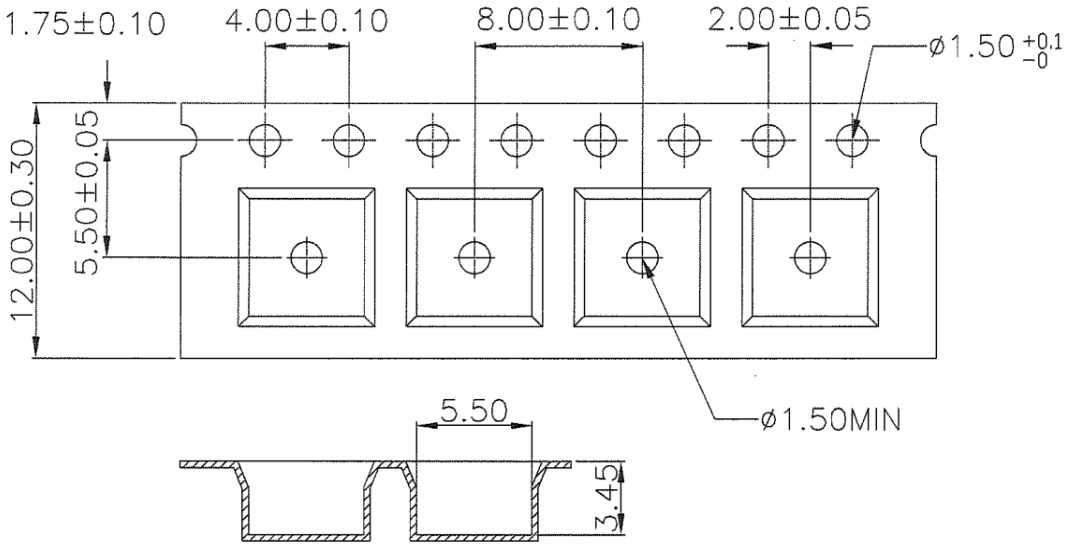


Recommended Solder Pad



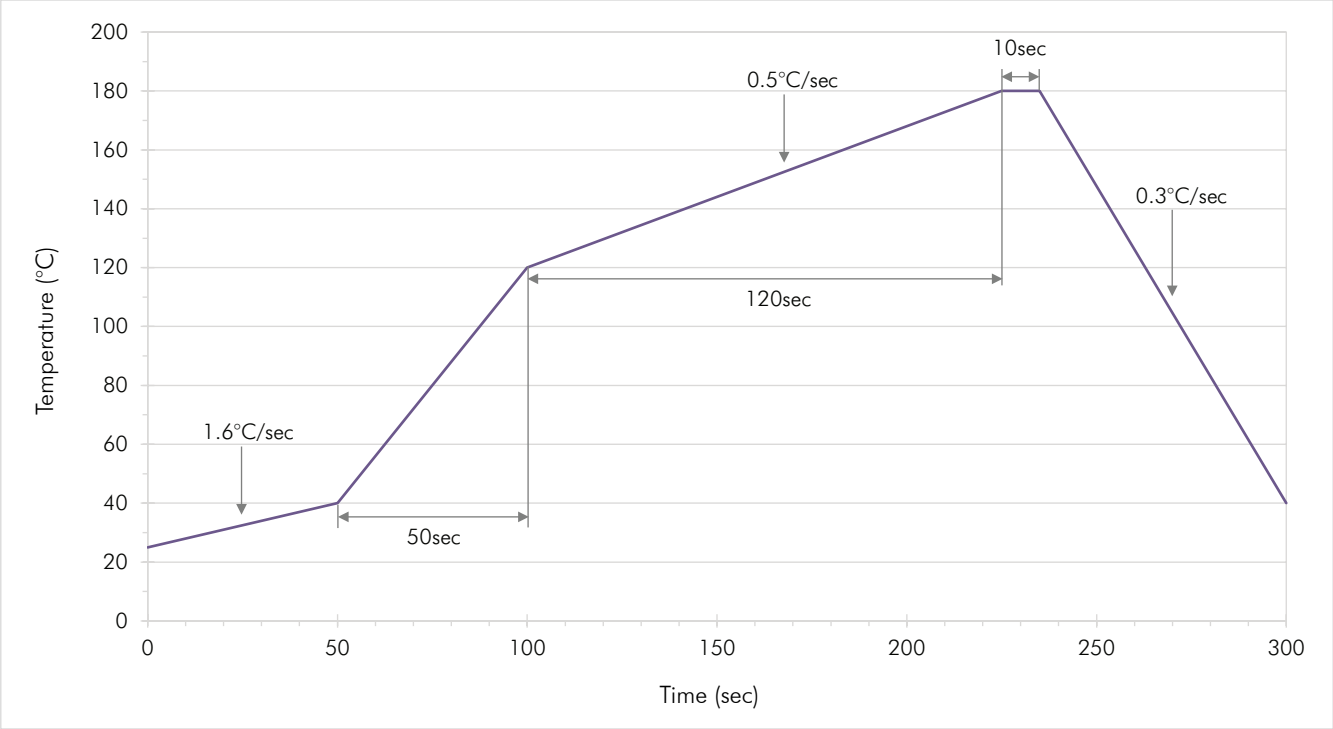
Note: The maximum offset (tolerance) for lens alignment over the LED is 0.2mm.

Reel Packaging Specifications



Each reel is loaded with 350 units and includes a leader section (200mm) and a trailer section (200mm) with empty pockets. The diameter of the reel is 177.8mm. Devices are placed with the anode to the left.

Soldering Guidelines



Reflow Profile Feature	Standard Parameters
Preheat Temperature Minimum	40°C
Preheat Temperature Maximum	120°C
Preheat Time	50 sec
Preheat Ramp-Up Rate	1.6°C/sec
Peak Temperature	±5°C
Time from Preheat Maximum Temperature to Peak Temperature	120 sec
Ramp-Up Rate from Maximum Temperature to Peak Temperature	0.5°C/sec
Time Within 5°C of Peak Temperature	5 sec
Maximum Time Maintained at Peak Temperature within Tolerance	10 sec
Ramp-Down Rate	3°C/sec

Handling & Usage Precautions

- Exhibit extreme care when handling LEDs. Do not touch the LED with bare hands as doing so may contaminate and affect the optical characteristics of the LED. When using tweezers, do not apply excessive force, especially to the glass lens. Do not drop the LED as doing so may cause product damage.
- Ensure that electrostatic discharge specifications are followed. Static electricity and surge voltages may cause product damage. Proper electrostatic discharge protection equipment, working machinery, and protected mounting equipment are recommended.
- Do not expose the LEDs to volatile organic compounds as well as hazardous, acidic, and corrosive substances during storage and operation to avoid product damage.
- Do not apply excess mechanical force and vibration while handling the product.
- Do not expose the product to sudden changes in temperature, high humidity levels, and condensation.
- Ensure that the PCB is suitable for the product and be wary of LED placement and possible PCB warpage.
- To avoid fault issues, do not couple any electrical wires to the metal substrate of the MCPCB or COB. If any electrical wires from the power source have contact with the MCPCB's metal base under power ON conditions, permanent damage may occur due to inner arcing within the LED structure.
- Avoid grounding of the LED copper substrate. Transient charges can propagate from the ground to the heatsink and finally to the copper substrate of the LED unit and damage the dielectric layer from ground charges. An insulator must be placed between the heatsink and the benchtop to avoid transient charge propagation from the ground.

Storage Precautions

- Perform soldering as soon as the moisture-proof packaging is opened.
- After the storage duration has exceeded the recommended time, products may need to be baked before soldering.
- Do not expose the product to sudden changes in temperature, high humidity levels, and condensation. It is recommended to store all products in a controlled environment under 30°C free of dust.
- Please consult the Violumas engineering team for further information on storage precautions.

Eye Safety Precautions

- Avoid exposure to UV light during LED operation. Do not look directly into the UV light during LED operation. Do not look directly into the UV light during optical measurements even through optical instruments. Protect the body, skin, and eyes with UV protective equipment.
- Attach warning labels on all products and systems that use UV LEDs.

Cleaning Precautions

- Do not use brushes or organic solvents for cleaning the LEDs.
- Perform electrical and optical measurements before and after cleaning to ensure optimal performance.

Static Electricity Precautions

- Ensure that equipment and machinery are properly grounded.
- Anti-electrostatic attire (wristbands, gloves, footwear, etc.) is recommended.
- Damage inspection is recommended while performing characteristics inspection of LEDs.

Disclaimers

WC1X1C40L6-325-V1 | Mid Power 325nm COB

The WC1X1C40L6-325-V1 is a mid power chip-on-board (COB) UV LED with a peak wavelength of 325±5nm. The WC1X1C40L6-325-V1 is ready for plug and play with no soldering required and is ideal for mid power UV applications.

**WC1X1C40L6-325-V1 is also available with 30°, 120°, and 135° lenses. Please contact Violumas for specifications regarding alternative LED beam angles.*

Features & Benefits

- Dimensions: 15mm x 15mm x 3.7mm
- Typical Peak Wavelength: 325nm
- Equipped with a 60° fused silica lens*
- Ready for plug and play (solder-free)
- Poke-in connectors for easy wiring
- TVS built in for ESD protection

Electro-Optical Characteristics at I_F=350mA and T_A=25°C

Parameter	Symbol	Unit	Min	Typical	Max
Peak Wavelength	λ_P	nm	320	325	330
Forward Voltage	V_F	V	4.2	4.8	5.5
Radiant Flux	P_O	mW	65	80	-
Full Width of Half Magnitude	$\Delta\lambda$	nm	-	12	-
Radiant Angle	$2\Phi_{1/2}$	Degree	-	60	-
Thermal Resistance, Junction to COB Bottom Surface	R_{th}(J-B)	°C/W	-	9	-

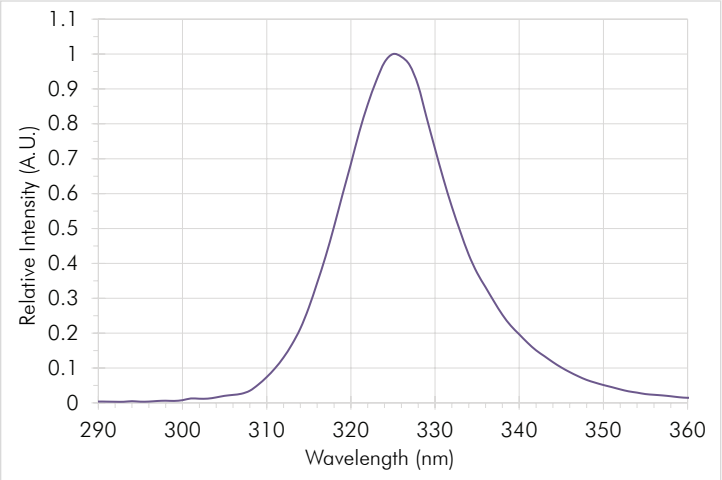
Peak Wavelength Tolerance:±3nm; Forward Voltage Tolerance: 0.1V; Radiant Flux Tolerance: ±10%

Absolute Maximum Ratings

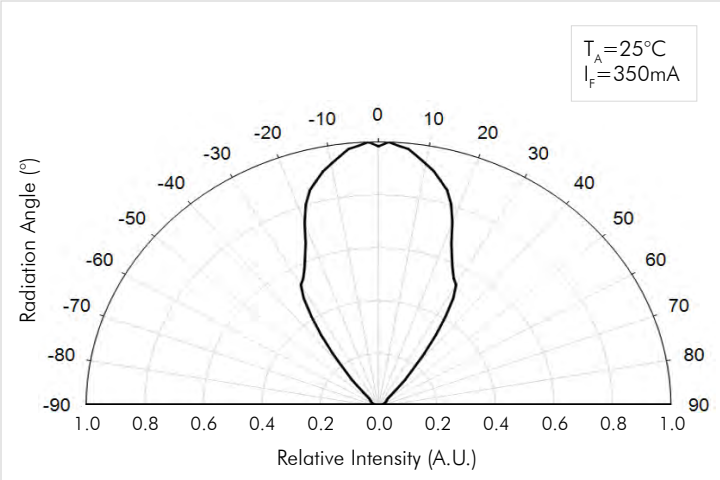
Parameter	Symbol	Unit	Value
Forward Current	I_F	mA	600
Reverse Voltage	V_R	V	5
Power	P_D	W	4
Junction Temperature	T_J	°C	90
Operating Temperature	T_{OPR}	°C	-30 ~ 85
Storage Temperature	T_{STG}	°C	-40 ~ 85

Note: Operating the LED at or above the listed absolute maximum ratings may affect device reliability and result in permanent LED failure.

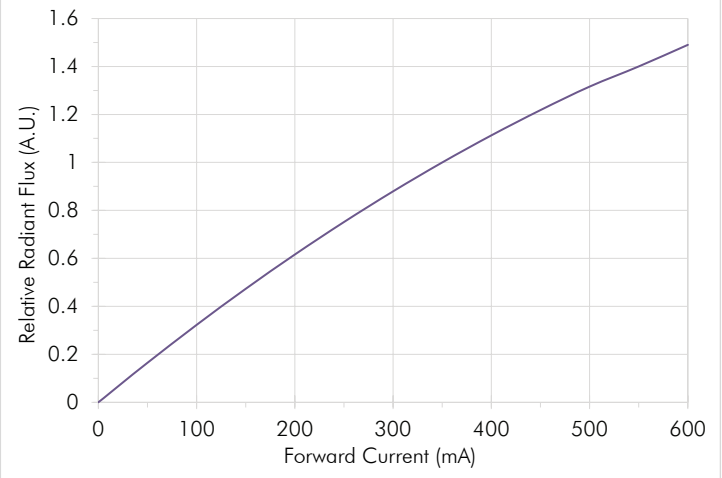
Spectral Output



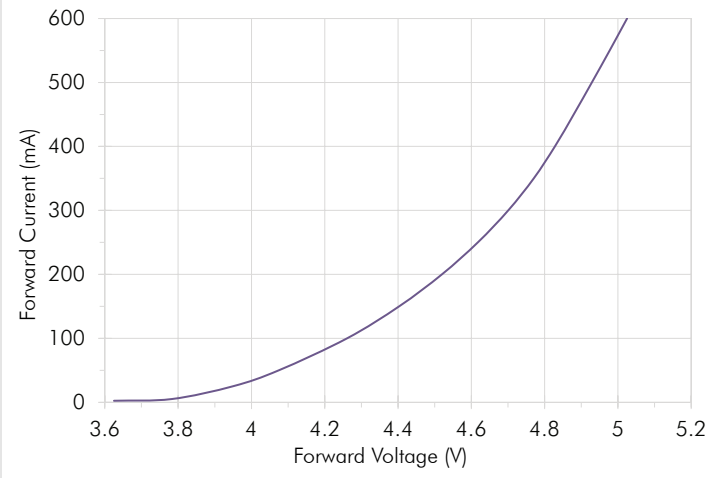
Radiation Pattern



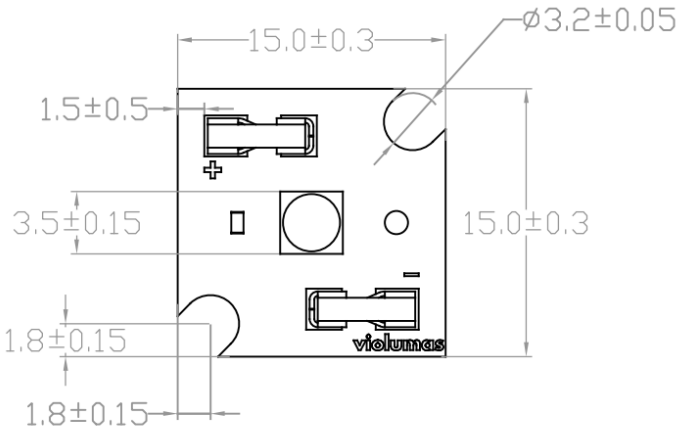
Forward Current vs. Relative Radiant Flux

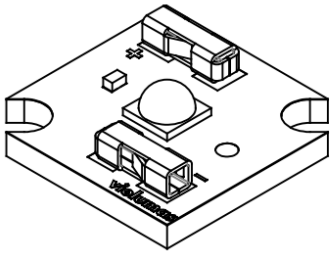


Forward Voltage vs. Forward Current

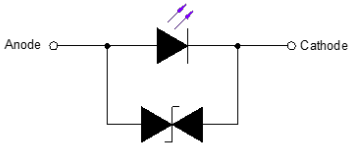


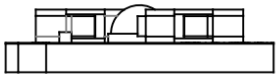
Mechanical Dimensions

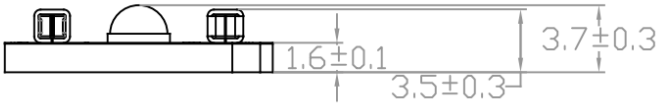




LED Circuit



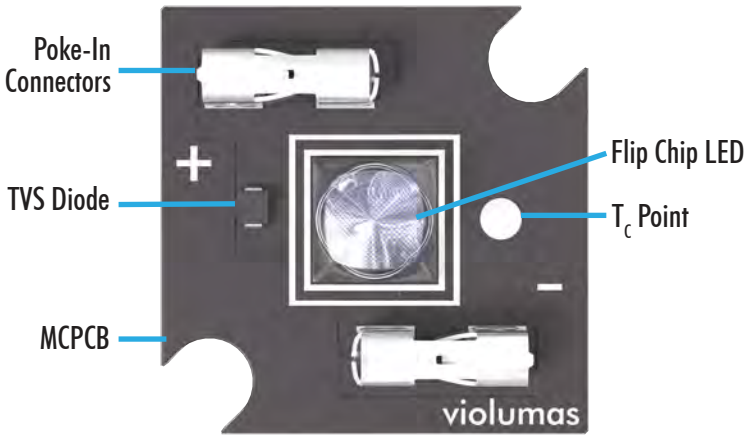




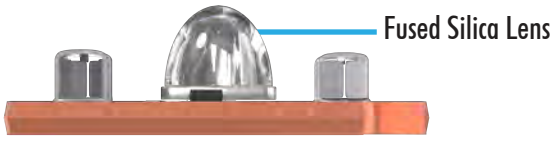
Note: The maximum offset (tolerance) for lens alignment over the LED is 0.2mm.

Product Overview

COB LEDs are ready for plug and play with no soldering required. All Violumas COBs are equipped with connectors for direct wiring and a TVS diode for protection against ESD and voltage issues.



- Poke-in connectors for direct wiring (acceptable wire gauge: 20-24 AWG)
- Bi-directional TVS against 600W over-voltage surge



Note: Violumas COB products may be delivered with a protective tape on the backside of the LED. The tape should be removed before operation or assembly.

Handling & Usage Precautions

- Exhibit extreme care when handling LEDs. Do not touch the LED with bare hands as doing so may contaminate and affect the optical characteristics of the LED. When using tweezers, do not apply excessive force, especially to the glass lens. Do not drop the LED as doing so may cause product damage.
- Ensure that electrostatic discharge specifications are followed. Static electricity and surge voltages may cause product damage. Proper electrostatic discharge protection equipment, working machinery, and protected mounting equipment are recommended.
- Do not expose the LEDs to volatile organic compounds as well as hazardous, acidic, and corrosive substances during storage and operation to avoid product damage.
- Do not apply excess mechanical force and vibration while handling the product.
- Do not expose the product to sudden changes in temperature, high humidity levels, and condensation.
- To avoid fault issues, do not couple any electrical wires to the metal substrate of the MCPCB or COB. If any electrical wires from the power source have contact with the MCPCB's metal base under power ON conditions, permanent damage may occur due to inner arcing within the LED structure.
- Avoid grounding of the LED copper substrate. Transient charges can propagate from the ground to the heatsink and finally to the copper substrate of the LED unit and damage the dielectric layer from ground charges. An insulator must be placed between the heatsink and the benchtop to avoid transient charge propagation from the ground.

Storage Precautions

- Do not expose the product to sudden changes in temperature, high humidity levels, and condensation. It is recommended to store all products in a controlled environment under 30°C free of dust.
- Please consult the Violumas engineering team for further information on storage precautions.

Eye Safety Precautions

- Avoid exposure to UV light during LED operation. Do not look directly into the UV light during LED operation. Do not look directly into the UV light during optical measurements even through optical instruments. Protect the body, skin, and eyes with UV protective equipment.
- Attach warning labels on all products and systems that use UV LEDs.

Cleaning Precautions

- Do not use brushes or organic solvents for cleaning the LEDs.
- Perform electrical and optical measurements before and after cleaning to ensure optimal performance.

Static Electricity Precautions

- Ensure that equipment and machinery are properly grounded.
- Anti-electrostatic attire (wristbands, gloves, footwear, etc.) is recommended.
- Damage inspection is recommended while performing characteristics inspection of LEDs.

Disclaimers

Violumas is not responsible for any damages that result from inaccurate use of the recommended guidelines. The information compiled in this document is a result of careful review of reference materials and reliable sources. Violumas does not make any claims regarding warranty or guarantee. It is recommended that each customer consults the Violumas engineering team before engaging Violumas products in extreme applications where the failure of the LED and damage to human health may be possible. Each user assumes full responsibility for determining the suitability of the use of Violumas products in various applications. Disassembling Violumas products without consent is prohibited. No part of these documents may be reproduced in any form without prior written permission from Violumas.

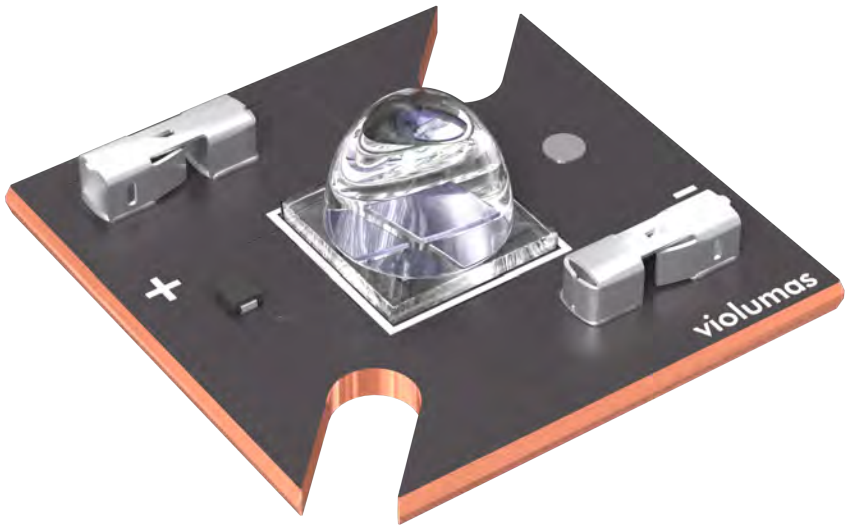
violumas
High Power UV LED Solutions

Data Sheet

BostonElectronics

WC2X2C40L6-325-V1 High Power UVB LED COB

WC2X2C40L6-325-V1 is a UV LED Chip on Board (COB) module offering UV radiation at a peak wavelength of 325±5nm. The WC2X2C40L6 series is ready for plug and play with no soldering required and is equipped with a 60° lens for high power UV output.



FEATURES & BENEFITS

- Dimensions: 20mm x 20mm x 7mm
- Ready for plug and play (solder-free)
- Equipped with 60° fused silica lens
- TVS built in for ESD protection

Electro-Optical Characteristics at T_A=25°C and I_F=350mA

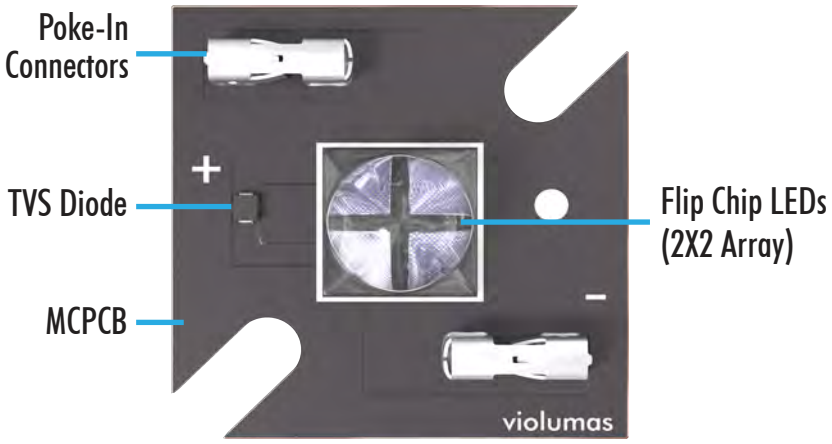
Parameter	Symbol	Unit	Min	Typical	Max
Peak Wavelength	λ_P	nm	320	325	330
Forward Voltage	V_F	V	17	19	22
Radiant Flux	P_O	mW	230	280	-
Full Width of Half Magnitude	$\Delta\lambda$	nm	-	12	-
Radiant Angle	$2\Phi_{1/2}$	Degree	-	60	-
Thermal Resistance, Junction to COB Bottom Surface	R_{th}(J-B)	°C/W	-	2.5	-

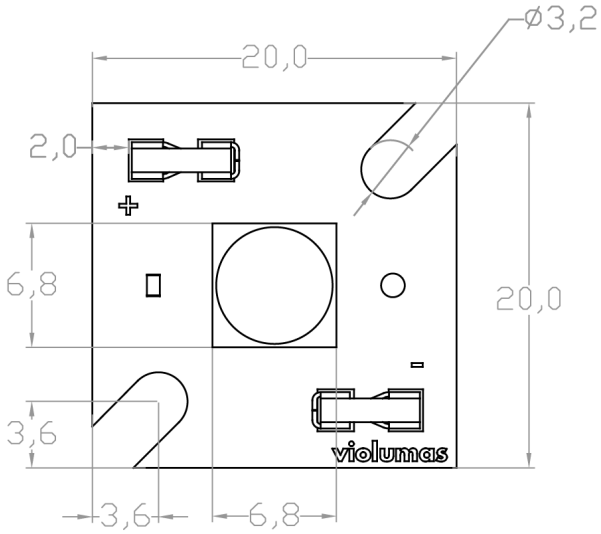
Absolute Maximum Ratings

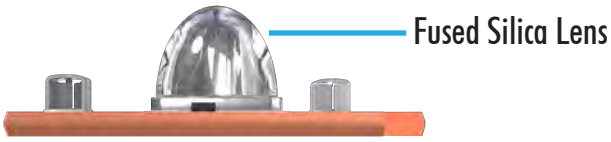
Parameter	Symbol	Unit	Value
Forward Current	I_F	mA	600
Reverse Voltage	V_R	V	10
Power	P_D	W	14
Junction Temperature	T_J	°C	90
Operating Temperature	T_{OPR}	°C	-30 ~ 85
Storage Temperature	T_{STG}	°C	-40 ~ 85

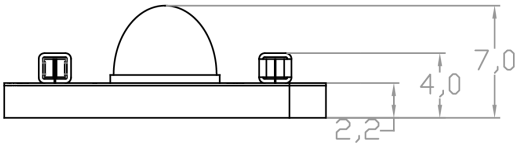
Product Overview

COB modules are ready for plug and play with no soldering required. All Violumas COBs are equipped with connectors for direct wiring and TVS protection against ESD and voltage issues.

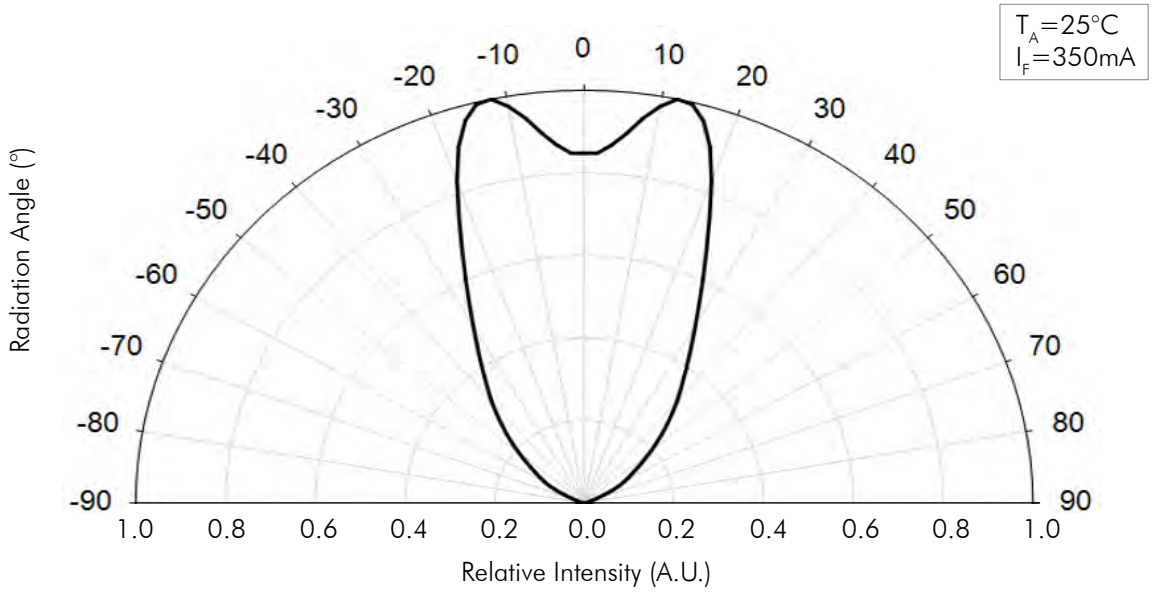




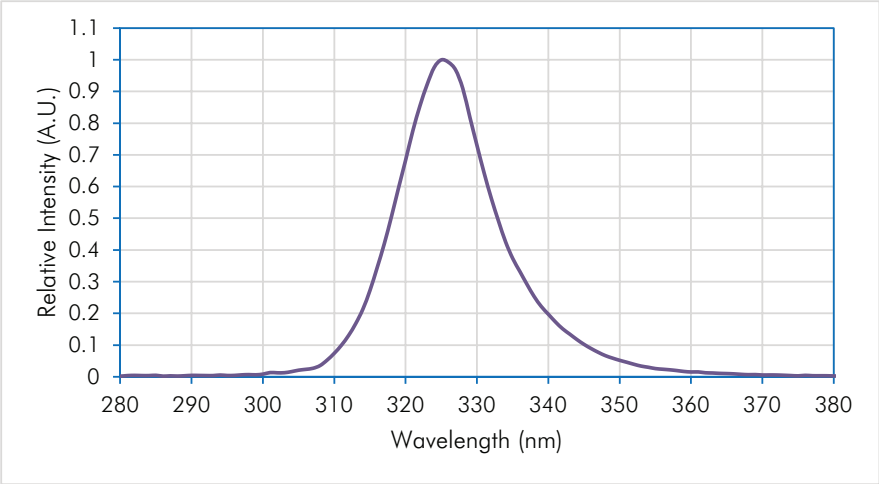




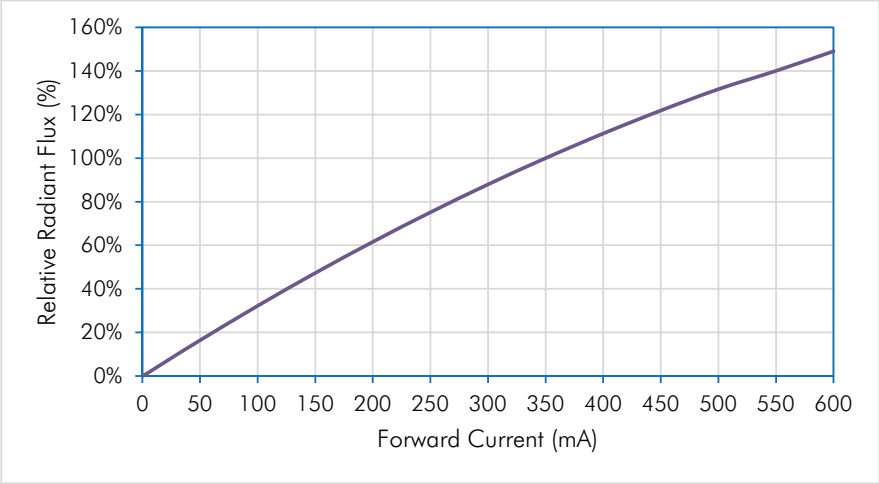
Radiation Pattern



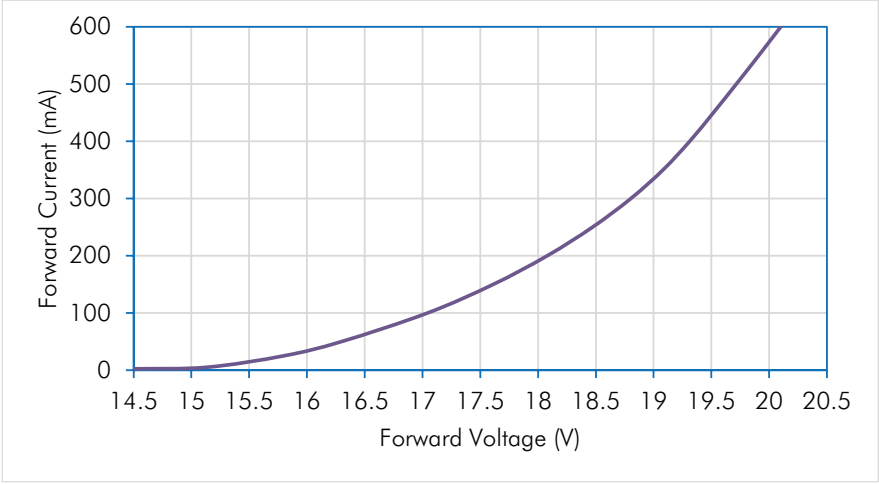
Spectral Output



Forward Current vs. Relative Radiant Flux



Forward Voltage vs. Forward Current



Handling & Usage Precautions

- Exhibit extreme care when handling LEDs. Do not touch the LED with bare hands as doing so may contaminate and affect the optical characteristics of the LED. When using tweezers, do not apply excessive force, especially to the glass lens. Do not drop the LED as doing so may cause product damage.
- Ensure that electrostatic discharge specifications are followed. Static electricity and surge voltages may cause product damage. Proper electrostatic discharge protection equipment, working machinery, and protected mounting equipment are recommended.
- Do not expose the LEDs to volatile organic compounds as well as hazardous, acidic, and corrosive substances during storage and operation to avoid product damage.
- Do not apply excess mechanical force and vibration while handling the product.
- Do not expose the product to sudden changes in temperature, high humidity levels, and condensation.
- Ensure that the PCB is suitable for the product and be wary of LED placement and possible PCB warpage.
- To avoid fault issues, do not couple any electrical wires to the metal substrate of the MCPCB or COB. If any electrical wires from the power source have contact with the MCPCB's metal base under power ON conditions, permanent damage may occur due to inner arcing within the 3-PAD LED structure.

Storage Precautions

- Perform soldering as soon as the moisture-proof packaging is opened.
- After the storage duration has exceeded the recommended time, products may need to be baked before soldering.
- Store all products in a controlled environment under 30° C free of dust. Do not expose the product to sudden changes in temperature, high humidity levels, and condensation.
- Please consult the Violumas engineering team for further information on storage precautions.

Eye Safety Precautions

- Avoid exposure to UV light during LED operation. Do not look directly into the UV light during LED operation. Do not look directly into the UV light during optical measurements even through optical instruments. Protect the body, skin, and eyes with UV protective equipment.
- Attach warning labels on all products and systems that use UV LEDs.

Cleaning Precautions

- Do not use brushes or organic solvents for cleaning the LEDs.
- Perform electrical and optical measurements before and after cleaning to ensure optimal performance.

Static Electricity Precautions

- Ensure that equipment and machinery are properly grounded.
- Anti-electrostatic attire (wristbands, gloves, footwear, etc.) is recommended.
- Damage inspection is recommended while performing characteristics inspection of LEDs.

Disclaimers

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Boston Electronics

violumas
High Power UV LED Solutions

UV LED Application Set

Plug-and-Play:

- COB UV LED
- Heatsink Kit
- Driver Kit

Violumas COB LED

Violumas Heatsink Kit

Heatsink (x1), Mounting Screws (x2), Thermal Pad (x2)

Violumas Driver Kit with LED Wire & Connector - 110V or 220V

Negative/Black Wire (x1), Positive/Red Wire (x1), 2-Terminal Connectors (x2)

Photos are provided for reference only and may not be accurate of the exact items received.

www.boselec.com | uv@boselec.com | shop.boselec.com | 617.566.3821

All sets can be purchased via our web store