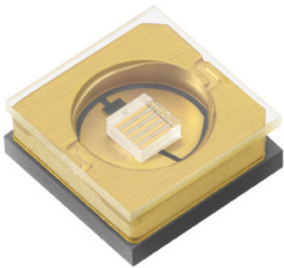


XBT-3535-340 nm

Surface Mount UVA LED



Features

- UV LED with typical peak wavelength of 345 nm
- Compact form factor: 3.5 mm x 3.5 mm package with optically transparent window
- Viewing angle of 130 degrees
- Standard SMT process



Applications

- Analytical instruments for life sciences and medical applications
- Curing
- Blood gas measurements and urea analysis
- Phototherapy
- Solar panel testers

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Ordering Information

Ordering Part Numbers^{1,2}

Wavelength Range	Wavelength Bins	Radiometric Flux		Ordering Part Number
		Minimum Flux Bin ¹	Minimum Flux ²	
340 - 350	340, 345	DA	60	XBT-3535-UV-A130H-DA340-00

Part Number Nomenclature

XBT	3535	UV	<A130>	<ffwww-00>
Product Family	Package Type	Color	Package Configuration	Bin Kit
XBT: UVC Surface Mount Package	3535: 3.5 mm x 3.5 mm	UV: Ultraviolet	<A130> 130° viewing angle	<ff> Minimum Flux Bin <www> Peak Wavelength Bin See 'Binning Structure' tables on page 3 for details

Notes:

1. The Ordering Part Number specifies the Minimum Flux Bin in shipment; higher flux bins may be shipped without advance notice. Please refer to 'Binning Structure' tables on page 3 for details.
2. Product test condition: $I_f = 500 \text{ mA}$, $T_c = 25^\circ\text{C}$.



Binning Structure

Radiometric Flux Bins^{1,2}

Flux Bin	Binning @ 500 mA, T _c = 25°C ²		Correlated Minimum Flux (mW) @350 mA, T _c = 25°C
	Minimum Flux (lm)	Maximum Flux (lm)	
DA	60	70	43
DB	70	80	50
DC	80	90	57
DD	90	100	64
DE	100	120	70
FA	120	140	85
FB	140	160	100
FC	160	180	113
FD	180	200	127
FE	200	225	140

Forward Voltage Bins³

Voltage Bin	Binning @ 500 mA, T _c = 25°C	
	Minimum Voltage (V)	Maximum Voltage (V)
Vz	3.5	4.0
V1	4.0	4.5
V2	4.5	5.0
V3	5.0	5.5

Peak Wavelength Bins⁴

Wavelength Bin	Binning @ 500 mA, T _c = 25°C	
	Minimum Wavelength (nm)	Maximum Wavelength (nm)
340	340	345
345	345	350

Notes:

- LEDs are measured at 25°C ambient temperature with 500 mA 20 ms single pulse. Luminus maintains a ±6% tolerance on flux measurement.
- Flux values at other forward current conditions are calculated and for reference only.
- Individual bins are not orderable.
- The wavelength bin as marked on the product label may be followed by a letter which is for internal use only.



Characteristics¹

Parameter ($I_f=500$ mA, $T_c=25^\circ\text{C}$)		Symbol	Value	Unit
Radiometric Flux		Φ_V	87	mW
Forward Current		I_f	500	mA
Forward Voltage	Minimum	$V_{f\min}$	3.5	V
	Typical	$V_{f\text{typ}}$	4.6	
	Maximum	$V_{f\max}$	5.5	
FWHM		$\Delta\lambda_{1/2}$	12	nm
Viewing Angle		$2\theta_{1/2}$	130	°
Electrical Thermal Resistance (Junction to Solder Point) ²		$R_{thJS\text{elec}}$	6.1	°C/W

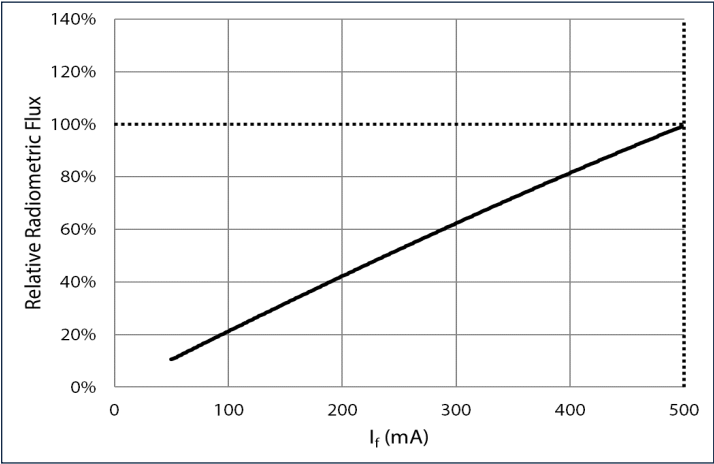
Notes:

- XBT-3535-UV LEDs are short wavelength, deep UV LEDs. During operation, the LED emits high intensity UV radiation, which is harmful to skin and eyes. UV light is also hazardous to skin and may cause cancer. Avoid exposure to deep UV light when LED is operational.
- Thermal measurements are in accordance with JEDEC 51-14.



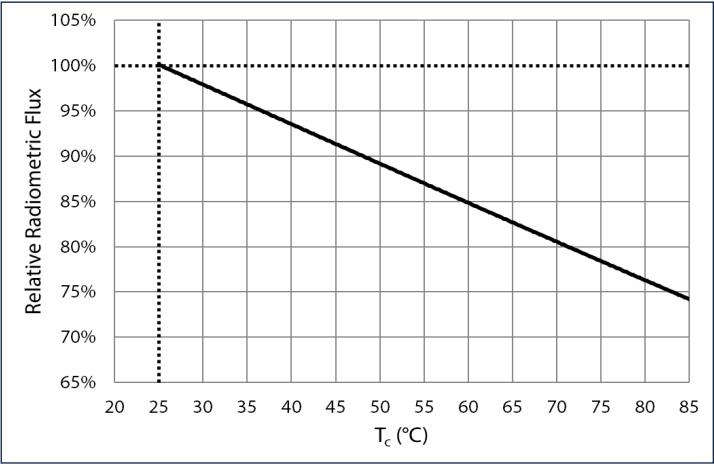
Relative Radiometric Flux vs Forward Current

$T_c = 25^{\circ}\text{C}$



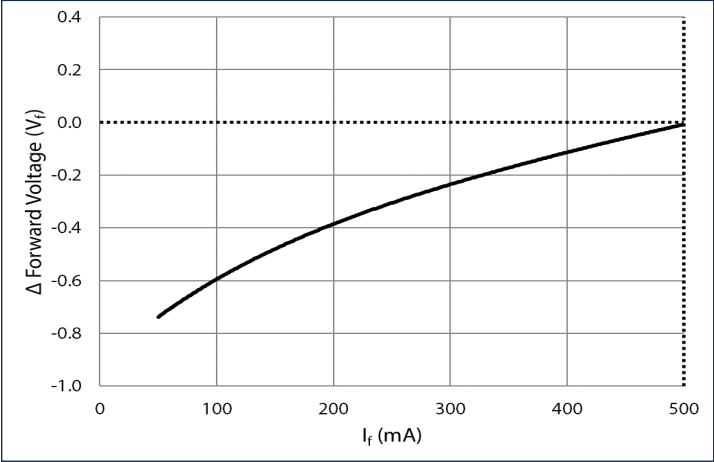
Relative Radiometric Flux vs Temperature

$I_f = 500\text{ mA}$



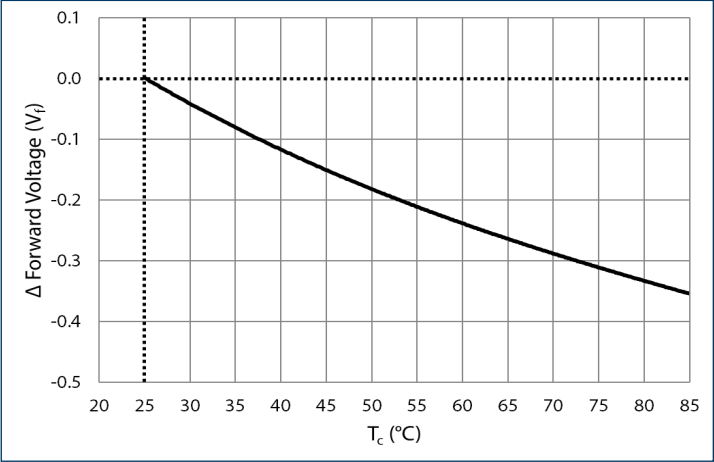
Forward Voltage Shift vs Forward Current

$T_c = 25^{\circ}\text{C}$



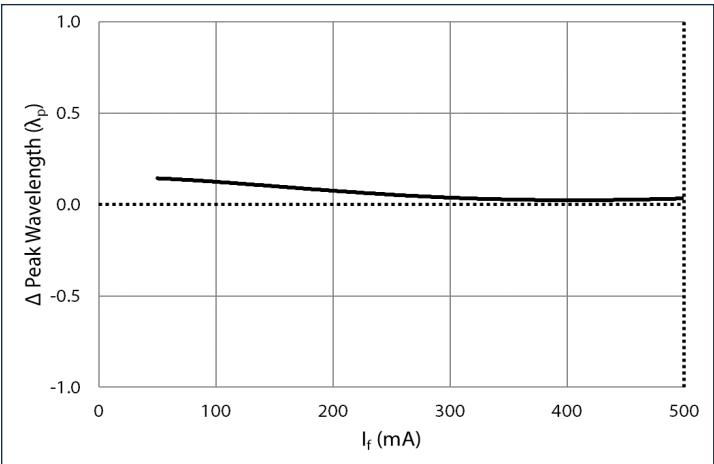
Forward Voltage Shift vs Temperature

$I_f = 500\text{ mA}$



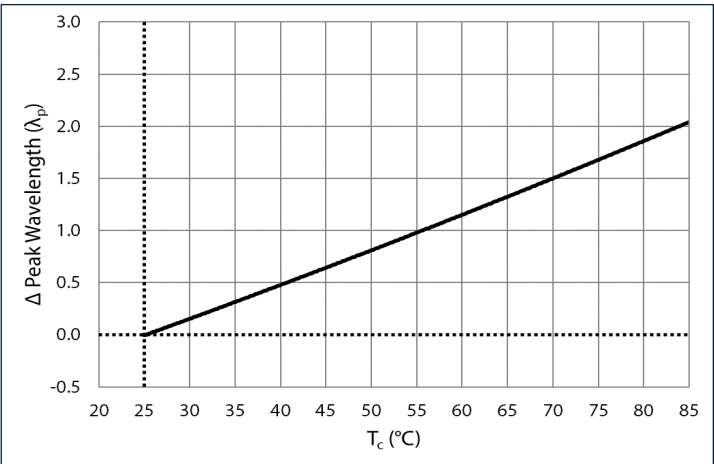
Peak Wavelength Shift vs Forward Current

$T_c = 25^{\circ}\text{C}$



Peak Wavelength Shift vs Temperature

$I_f = 500\text{ mA}$

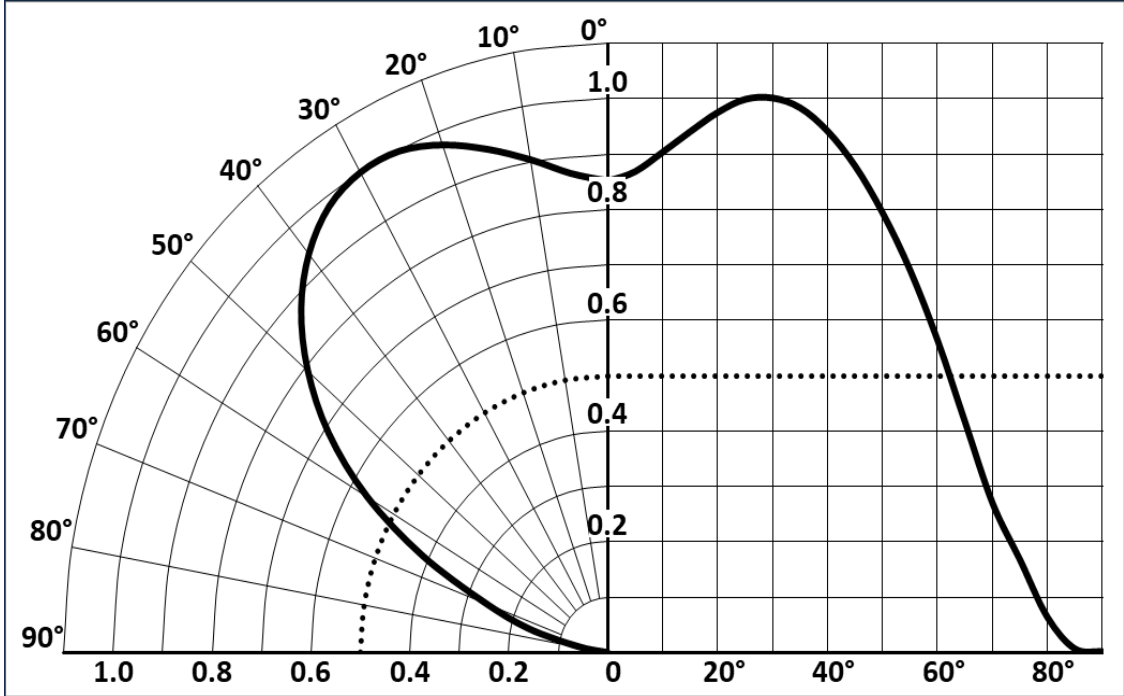




Angular Distribution and Typical Spectrum

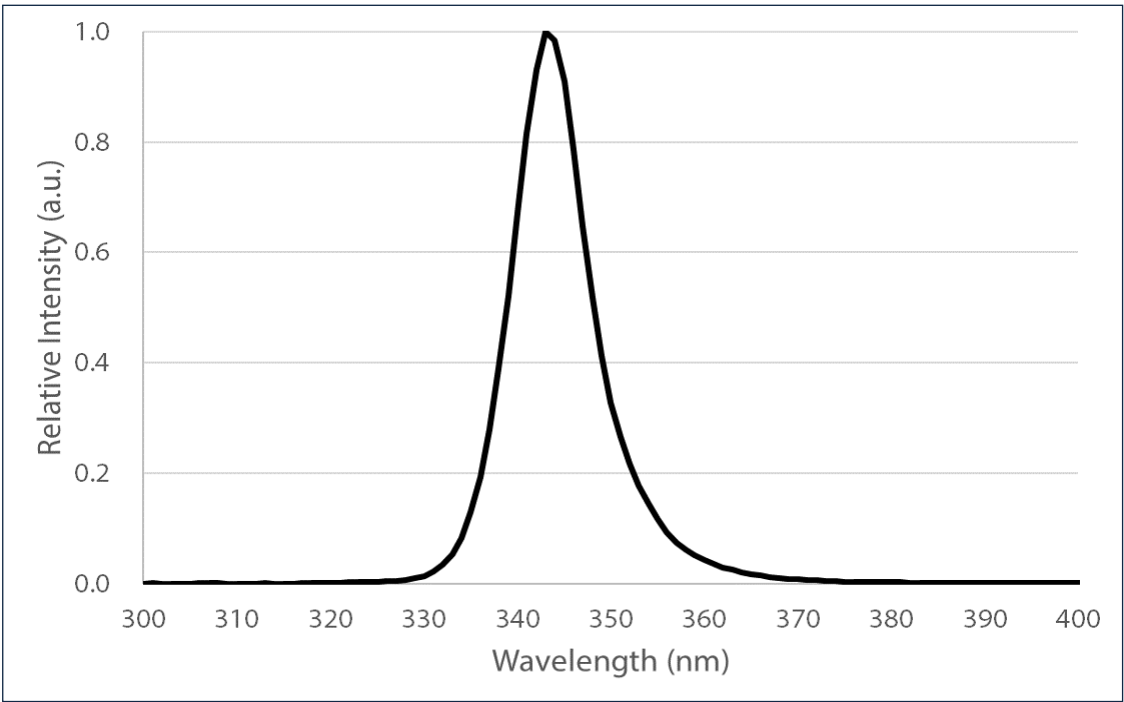
Angular distribution

$I_f = 500 \text{ mA}$, $T_c = 25^\circ\text{C}$



Typical Spectrum

$I_f = 500 \text{ mA}$; $T_c = 25^\circ\text{C}$





Absolute Maximum Ratings^{1,2}

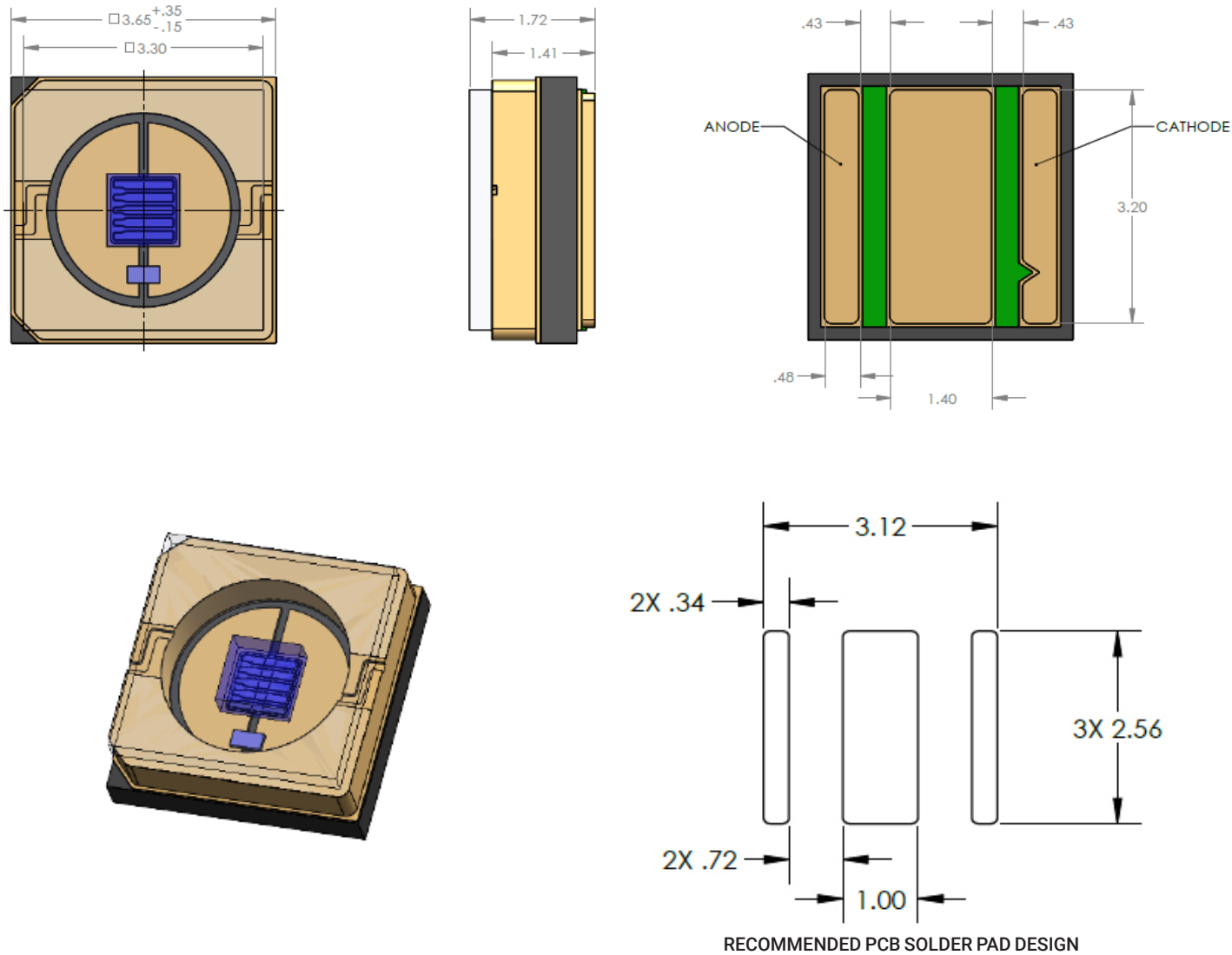
Parameter	Symbol	Values	Unit
Forward Current (CW)	$I_{f\ CW\ max}$	500	mA
Junction Temperature	T_j	85	°C
Storage Temperature Range	T_{stg}	-40 to 100	
ESD withstand Voltage ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)	V_{ESD}	8	kV

Notes:

- 1. The LED is safe for operation at the absolute maximum ratings as specified above. However, note that product lifetime data is provided based on nominal drive conditions. If sustained operation occurs at the absolute maximum ratings, it may lead to a reduction in device lifetime.
- 2. Avoid operating the LED beyond the maximum ratings.



Mechanical Dimensions¹



Notes:
1. All dimensions are in millimeter ± 0.20 mm.



Mechanical Characteristics

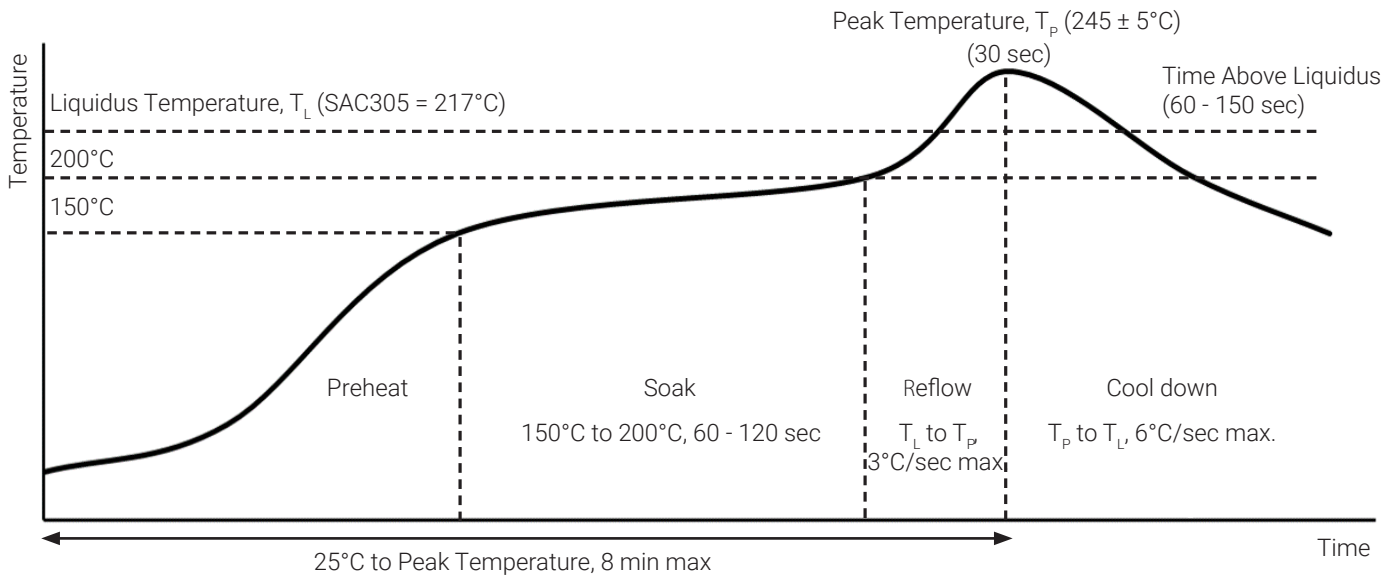
JEDEC Moisture Sensitivity¹

Level	Floor Life	
	Time	Conditions
3	168 Hours	≤30°C / 60% RH

Notes:

1. Please note that the above MSL level based on the MSL qualification rating.

Soldering Profile



SMT Solder Rework Temperature Guidelines

Parameter	Manual Hotplate Reflow	Hot Air Gun Reflow
Heating Time	< 60 sec	
Hotplate Temperature	< 245°C	< 150°C

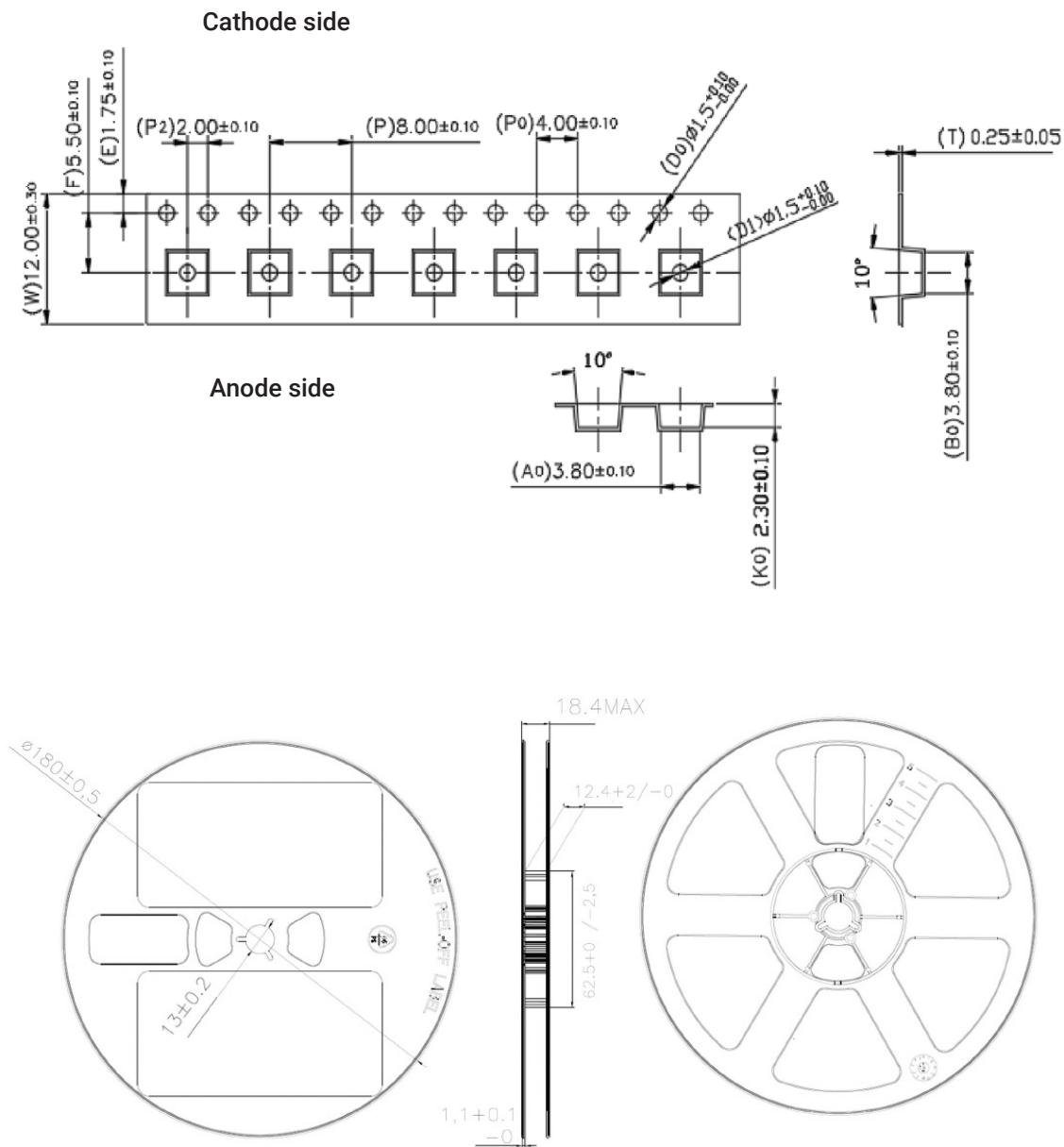
Notes:

- The numbers in the table are specific to SAC305. Luminus recommends using an SAC305 solder paste with a no-clean flux for RoHS compliant products.
- Use of a multi-zone IR reflow oven with a nitrogen blanket is recommended.
- Time-temperature profile of the reflow process showing the four functional profile zones are defined in IPC-7801. All the temperatures refer to the application PCB measured adjacent to the package body.
- The actual profile shall be optimized per the PCB design and configuration.
- Key visual and LED performance characteristics to consider include solder bridging, solder voiding, solder balling, LED component placement or shifting, potential contamination that may impact light emissions, and the functional performance of the LED.
- Luminus recommends to use the solder paste data sheet information as a starting point in time-temperature process development.
- These are general guidelines. Consult the solder paste manufacturer's datasheet for guidelines specific to the alloy and flux combination used in your application. For more information, please refer to:
<https://luminusdevices.zendesk.com/hc/en-us/articles/360060306692-How-do-I-Reflow-Solder-Luminus-SMD-Components->
- For any technical questions about soldering process, please contact Luminus at techsupport@luminus.com.



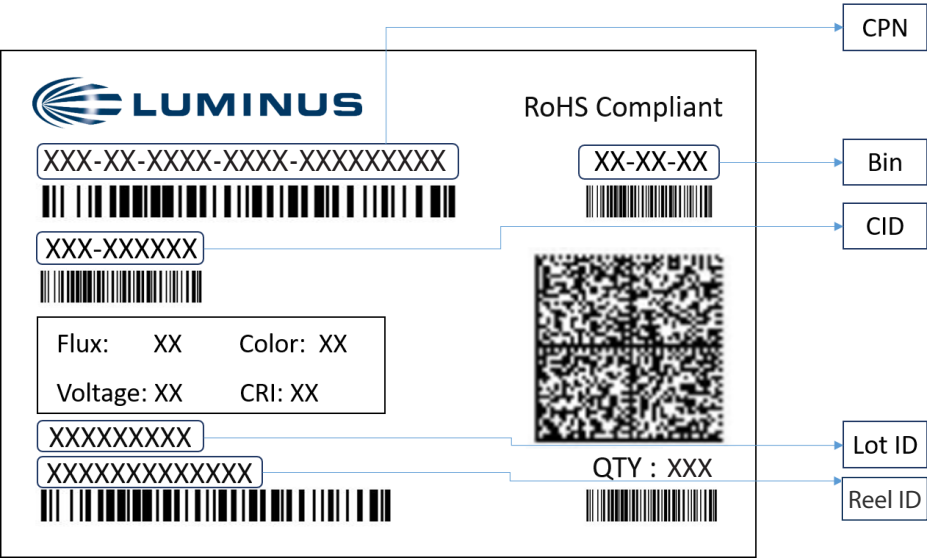
Tape and Reel Outline

All XBT-3535 products are packaged and labeled with their respective bin as outlined in the tables on page 3.
Each reel will only contain one flux and one wavelength bin.





Shipping Label



Label Fields:

- CPN: Luminus ordering part number
- CID: Customer's part number
- QTY: Quantity of parts per reel
- Flux: Bin as defined on page 3
- Voltage: Bin as defined on page 3
- Color: Bin as defined on page 4
- CRI: NA
- Lot ID & Reel ID: For Luminus internal use

Packing Configuration:

- Maximum of 250 units per reel, minimum of 50 units per reel
- Each reel is placed in an anti-static moisture barrier bag
- Partial reel may be shipped
- The shipping label is placed on top of each packaging box



Notes

Environmental Compliance

Luminus complies with RoHS and REACH. Luminus is committed to selling environmentally friendly and sustainable products. We do not use harmful or hazardous substances in our composites and products. Luminus will not intentionally add the following restricted materials to our products: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), or polybrominated diphenyl ethers (PBDE).

Static Electricity

1. The products are sensitive to static electricity, and care should be taken when handling them.
2. Static electricity or surge voltage will damage the LEDs. It is recommended to wear anti-electrostatic gloves or wristband when handling the LEDs.
3. All devices, equipment and machinery must be properly grounded. It is recommended that measures be taken against surge voltage to the equipment that mounts the LEDs.

Reference: [APN-002815](#) Electrical Stress Damage to LEDs and How to Prevent It

Storage

Please follow J-STD-033D guidance on safe storage and bake treatment.

Mechanical Handling

1. xFx series: During the pick and place process, ensure the pick-up tool does not touch any die components.
2. xBx and xSx series: During the pick and place process, axial forces on the dome (or window) should not exceed 0.5 Newtons (N).
3. PT series: During the pick and place process, ensure the pick-up tool does not touch any die components. This profile applies when attaching surface mount components.
4. SBT series: During the pick and place process, axial forces on the dome (or window) should not exceed 0.5 Newtons (N). Vapor phase soldering is not recommended as the package is not hermetic.

Eye Safety

According to the test specification risk group IEC 62471: 2006-Non-GLS under 500 mA, this product complies to Risk group 0 (RG0) Exempt.

No photo biological hazard under foreseeable conditions.

For more information, please refer to: <https://luminusdevices.zendesk.com/hc/en-us/articles/10532958752397>



Revision History

Rev	Date	Description of Change
01	06/12/2024	Initial release
01	08/19/2024	Editorial changes
02	01/18/2026	Update to new template. Update Ordering Part Numbers