OSRAM PLT5 520EB_P

Datasheet

Preliminary datasheet version

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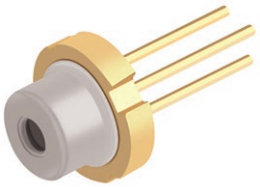
OSRAM

Metal Can TO56

PLT5 520EB_P

Green Laser Diode in TO56 Package



Applications

- Appliances & Tools
- Entertainment
- Functional Illumination
- Medical Imaging
- Outdoor & Industrial Lighting
- Projection
- Visualization

Features

- Optical output power (continuous wave): 20 mW (T_C = 25°C)
- Typical emission wavelength: 520 nm
- Efficient radiation source for cw and pulsed operation
- Single mode semiconductor laser
- High modulation bandwidth
- TO56 package with photo diode

Ordering Information

Type	Peak output power typ. P_{opt}	Ordering Code
PLT5 520EB_P	20 mW	Q65113A4961

Maximum Ratings

Parameter	Symbol		Values
Operating temperature	T_{op}	min. max.	-20 °C 60 °C
Storage temperature	T_{stg}	min. max.	-40 °C 85 °C
Peak output power T_{case} = 25 °C	P_{opt}	max.	25 mW
Reverse voltage [1)] T_{case} = 25 °C	V_R	max.	2 V
Soldering temperature t_{max} = 10 sec	T_S	max.	260 °C

Operation outside these conditions may damage the device. Operation at maximum ratings may influence lifetime.

Characteristics

P_{opt} = 20 mW; T_c = 25 °C

Parameter	Symbol		Values
Operating current [2]	I_{op}	typ. max.	65 mA 78 mA
Operating voltage [3]	V_{op}	typ. max.	5.4 V 6.1 V
Peak wavelength [4][5]	λ_{peak}	min. typ. max.	510 nm 520 nm 530 nm
Spectral bandwidth (FWHM)	$\Delta\lambda$	typ.	1 nm
Beam divergence (FWHM) parallel to pn-junction	$\Theta_{\parallel}$	min. typ. max.	6 ° 8 ° 10 °
Beam divergence (FWHM) perpendicular to pn-junction	$\Theta_{\perp}$	min. typ. max.	19 ° 22 ° 25 °
Threshold current	I_{th}	typ. max.	30 mA 45 mA
TE polarization	P_{TE}	typ.	100:1
Modulation frequency	f	min.	100 MHz
Monitor current [6][7] V_R = 5 V	I_m	typ.	150 µA

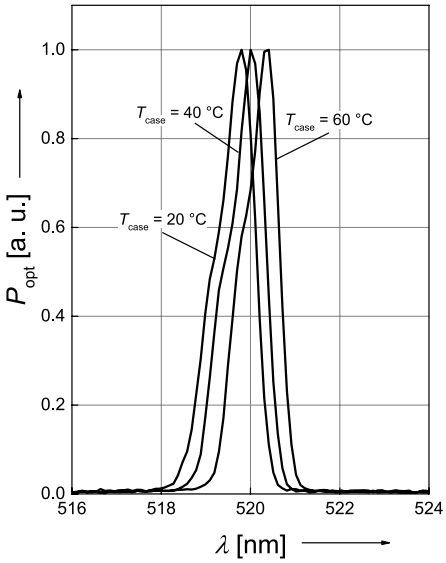
Wavelength Groups

P_{opt} = 20 mW; T_c = 25 °C

Group	Peak wavelength [5] min. λ_{peak}	Peak wavelength [5] max. λ_{peak}
B1	510 nm	515 nm
B2	515 nm	520 nm
B3	520 nm	530 nm

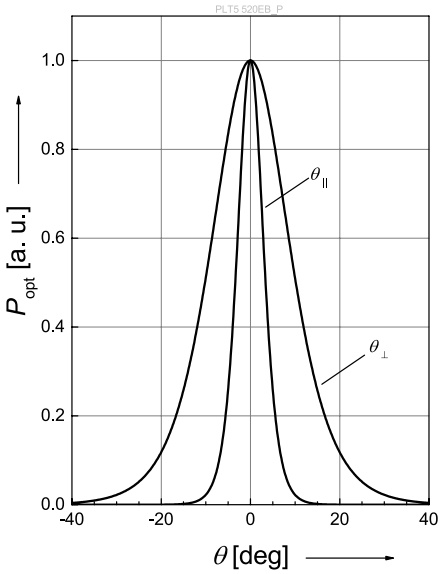
Relative Spectral Emission [8], [9]

P_{opt} = ƒ (λ); Group (B2)



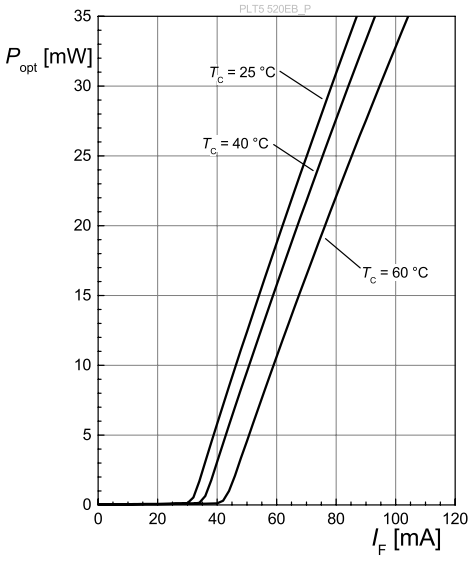
Beam Divergence [9]

P_{opt} = f (Θ)



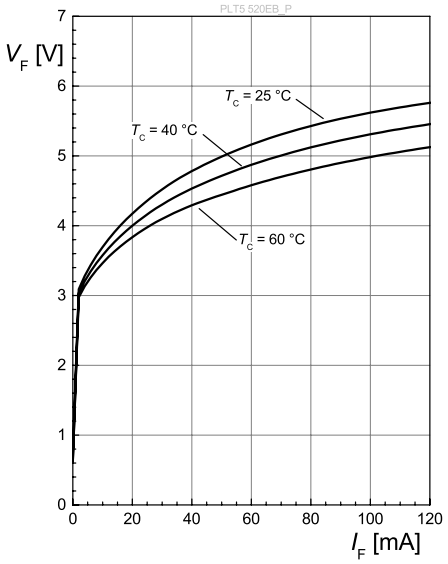
Optical Output Power [8], [9]

$P_{opt} = f(I_F)$



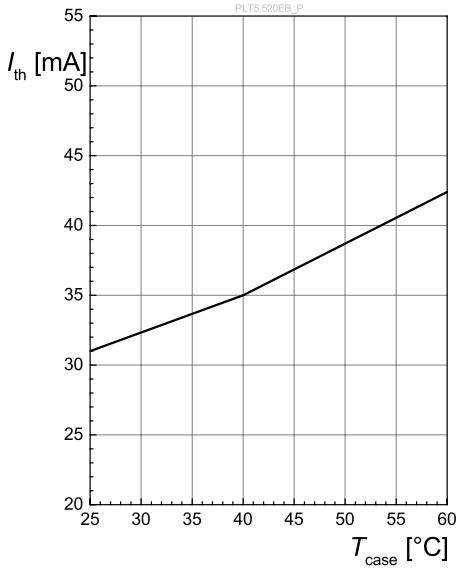
Forward Voltage [8], [9]

$V_F = f(I_F)$

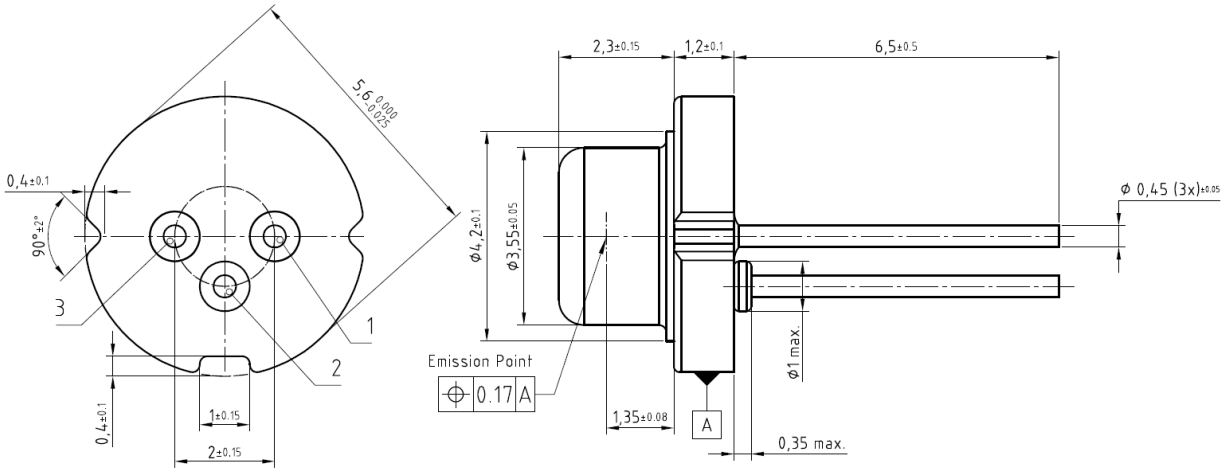


Threshold Current [8]

$I_{th} = f(T_C)$



Dimensional Drawing [10)]



1: Cathode LD
2: Anode LD, Cathode PD
3: Anode PD

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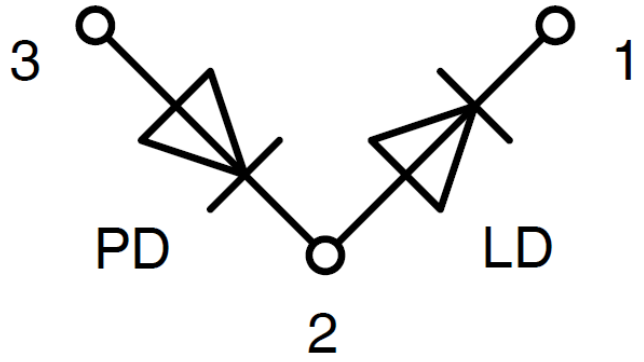
Further Information:

Approximate Weight: 313.0 mg

ESD advice: ATTENTION – Observe Precautions For Handling – Electrostatic Sensitive Device

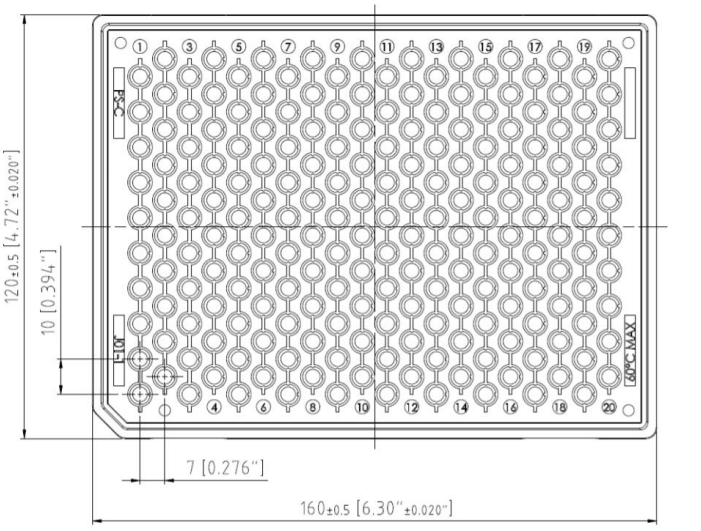
Electrical Internal Circuit



Pin	Description
PIN1	LD Cathode
PIN 2	LD Anode, PD Cathode (case)
PIN 3	PD Anode

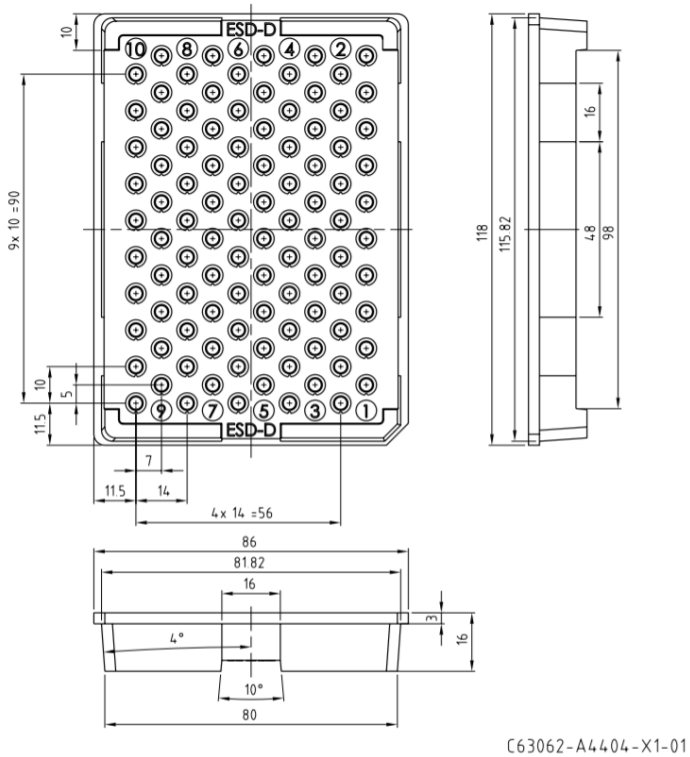
Tray

Subcon A, Packing qty
* 1 tray per box
* 200 pieces per tray

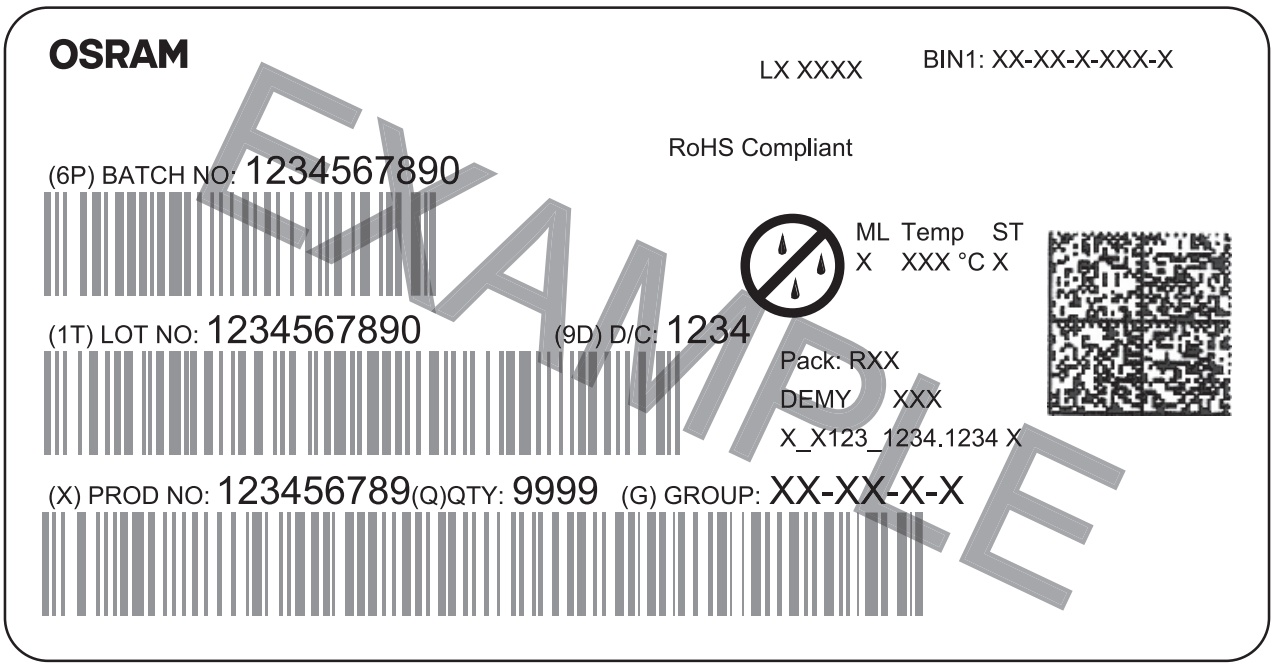


Tray

Subcon B, Packing qty
* 2 trays per box
* 100 pieces per tray



Barcode-Product-Label (BPL)



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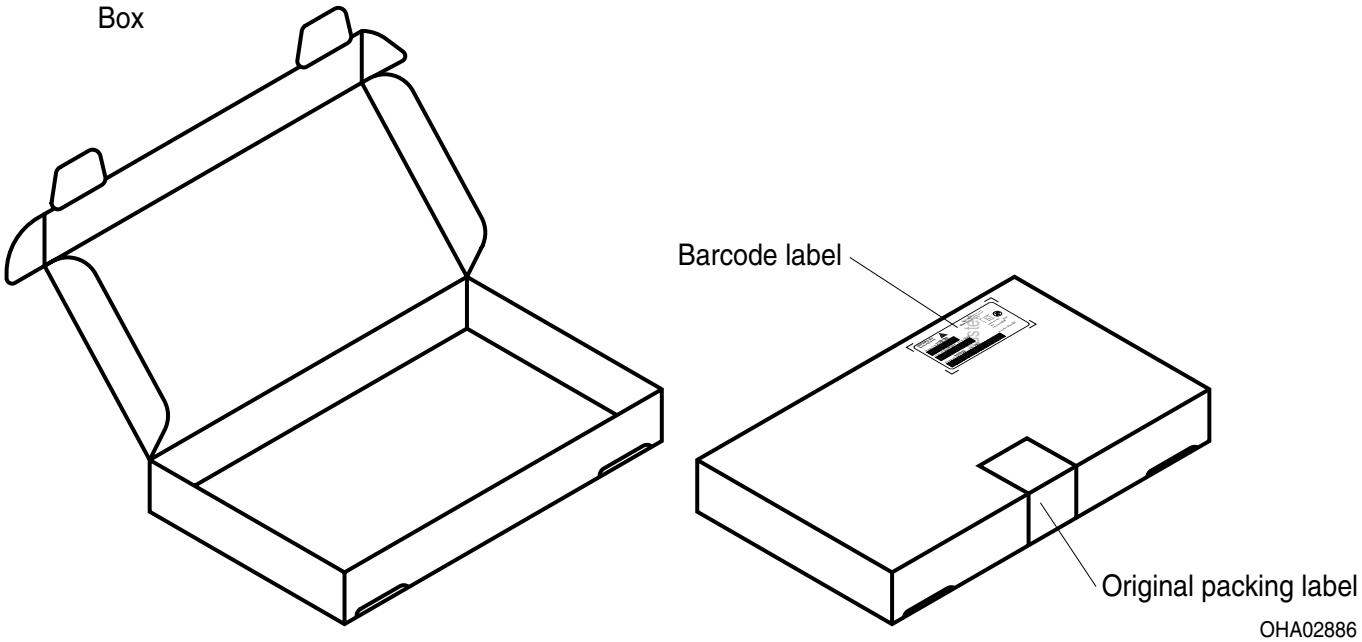
Schematic Transportation Box [10)]



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Dimensions of Transportation Box

Subcon	Tray(s) per box	Pieces per tray	Packing qty per box (total)	Width	Length	Height
A	1	200	200	170 ± 5 mm	270 ± 5 mm	45 ± 5 mm
B	2	100	200	103 ± 5 mm	128 ± 5 mm	48 ± 5 mm

Notes

Depending on the mode of operation, these devices emit highly concentrated visible and non visible light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1.

Subcomponents of this device contain, in addition to other substances, metal filled materials including silver. Metal filled materials can be affected by environments that contain traces of aggressive substances. Therefore, we recommend that customers minimize device exposure to aggressive substances during storage, production, and use. Devices that showed visible discoloration when tested using the described tests above did show no performance deviations within failure limits during the stated test duration. Respective failure limits are described in the IEC60810.

For further application related information please visit https://ams-osram.com/support/application-notes

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Glossary

1) **Reverse Operation:** This product is intended to be operated applying a forward current within the specified range. Applying any continuous reverse bias or forward bias below the voltage range of light emission shall be avoided because it may cause migration which can change the electro-optical characteristics or damage the LED.

2) **Operating/Forward current:** IF is measured with an internal reproducibility of ±0.5 mA (acc. to GUM with a coverage factor of k = 3).

3) **Operating/Forward voltage:** VF is measured with an internal reproducibility of ±0.05 V (acc. to GUM with a coverage factor of k = 3).

4) **Wavelength:** The wavelengths are measured with a tolerance of ±0.5 nm.

5) **Wavelength:** λpeak is measured with an internal reproducibility of ±0.3 nm (acc. to GUM with a coverage factor of k = 3).

6) **Monitor current:** Monitor current refers to a reverse voltage of VRPD = 5 V. Monitor current is for short time power reference purpose only. Not guaranteed for accuracy.

7) **Monitor current:** For reference only.

8) **Typical Values:** Due to the special conditions of the manufacturing processes of semiconductor devices, the typical data or calculated correlations of technical parameters can only reflect statistical figures. These do not necessarily correspond to the actual parameters of each single product, which could differ from the typical data and calculated correlations or the typical characteristic line. If requested, e.g. because of technical improvements, these typ. data will be changed without any further notice.

9) **Testing temperature:** TA = 25°C (unless otherwise specified)

10) **Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with ±0.1 and dimensions are specified in mm.

Revision History

Version	Date	Change
0.0	2023-04-27	Initial Version
0.1	2023-06-21	Type Designation System
0.2	2024-08-29	Tray Dimensions of Transportation Box Glossary

Preliminary datasheet version

EU RoHS and China RoHS compliant product
此产品符合欧盟 RoHS 指令的要求；
按照中国的相关法规和标准，
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