PLT5 522EA_P

Metal Can® TO56

Green Laser Diode in TO56 Package



Applications

- Architecture / Garden Lighting (LED & Laser)
- Area Lights
- Downlights/Spotlights
- Mood Lighting
- Street, Tunnel and Outdoor

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 522EA_P	20 mW	Q65113A2667

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Maximum Ratings

T_C = 25 °C

Parameter	Symbol		Values
Operating temperature	T_{op}	min. max.	-20 °C 60 °C
Storage temperature	T_{stg}	min. max.	-40 °C 85 °C
Junction temperature	T_j	max.	120 °C
Forward current [1)]	I_F	max.	200 mA
Reverse voltage [2)]	V_R	max.	2 V
Soldering temperature t_{max} = 10 s	T_S	max.	260 °C

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

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Characteristics

P_{opt} = 20 mW; T_{case} = 25 °C

Parameter	Symbol		Values
Operating current [1)] B1 - B3	I_{op}	max.	68 mA
Operating current [1)] B4 - B6	I_{op}	max.	82 mA
Operating voltage [3)]	V_{op}	typ. max.	5.5 V 6.3 V
Peak wavelength [4)]	λ_{peak}	min. typ. max.	510 nm 520 nm 530 nm
Spectral bandwidth (FWHM)	$\Delta\lambda$	typ.	2 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 50 mA
TE polarization	P_{TE}	typ.	100:1
Modulation frequency	f	min.	100 MHz
Monitor current [5)6)] V_R = 5 V	I_m	typ.	150 µA
Thermal resistance junction case real	R_{thJC}	typ.	34 K / W

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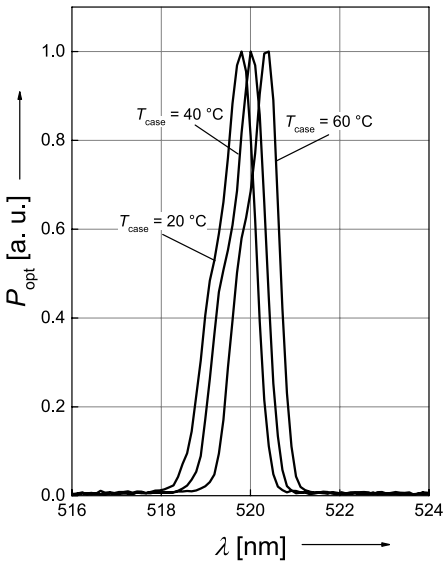
Wavelength Groups

I_{opt} <= 68 mA: B1 - B3; I_{opt} = 68 mA - 82 mA: B4 - B6

Group	Peak wavelength [7] min. λ_{peak}	Peak wavelength [7] max. λ_{peak}
B1	510 nm	515 nm
B4	510 nm	515 nm
B2	515 nm	520 nm
B5	515 nm	520 nm
B3	520 nm	530 nm
B6	520 nm	530 nm

Relative Spectral Emission [8), 9)]

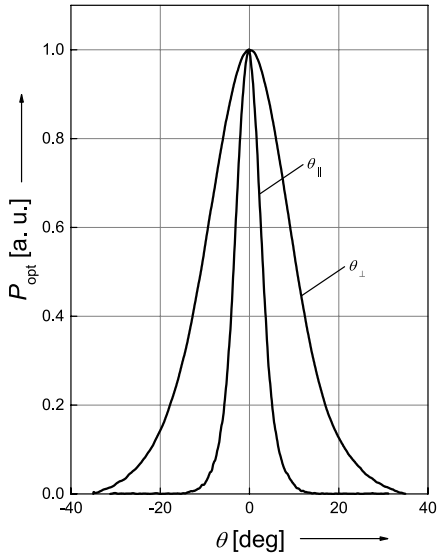
$I_{e,rel} = f(\lambda)$; I_F = 65 mA; P_{opt} = 20 mW



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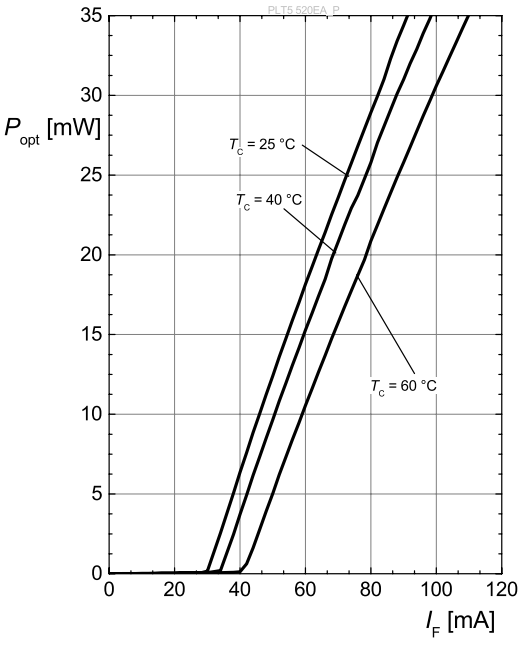
Beam Divergence [8), 9)]

$P_{opt} = f(\Theta)$



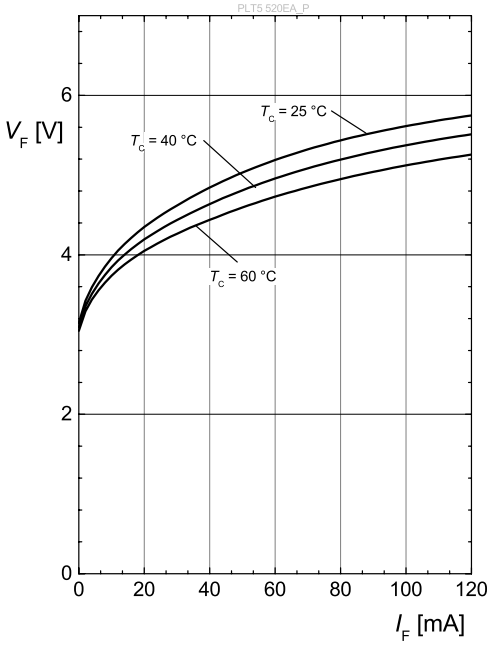
Optical Output Power [8), 9)]

$P_{opt} = f(I_F)$



Opt. Power / Forward Voltage [8), 9)]

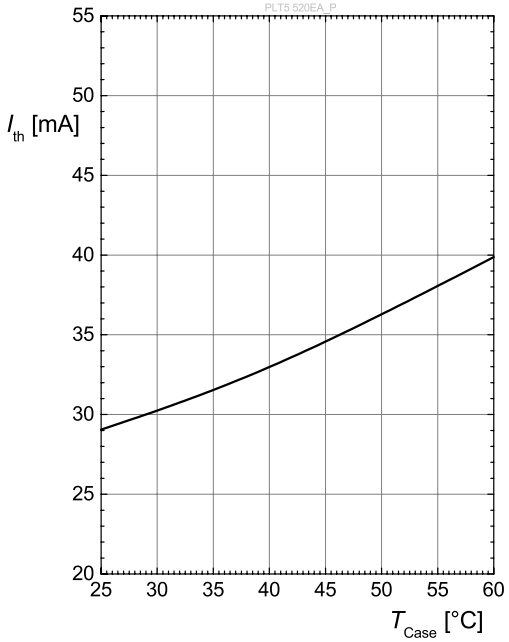
$V_F = f(I_F)$



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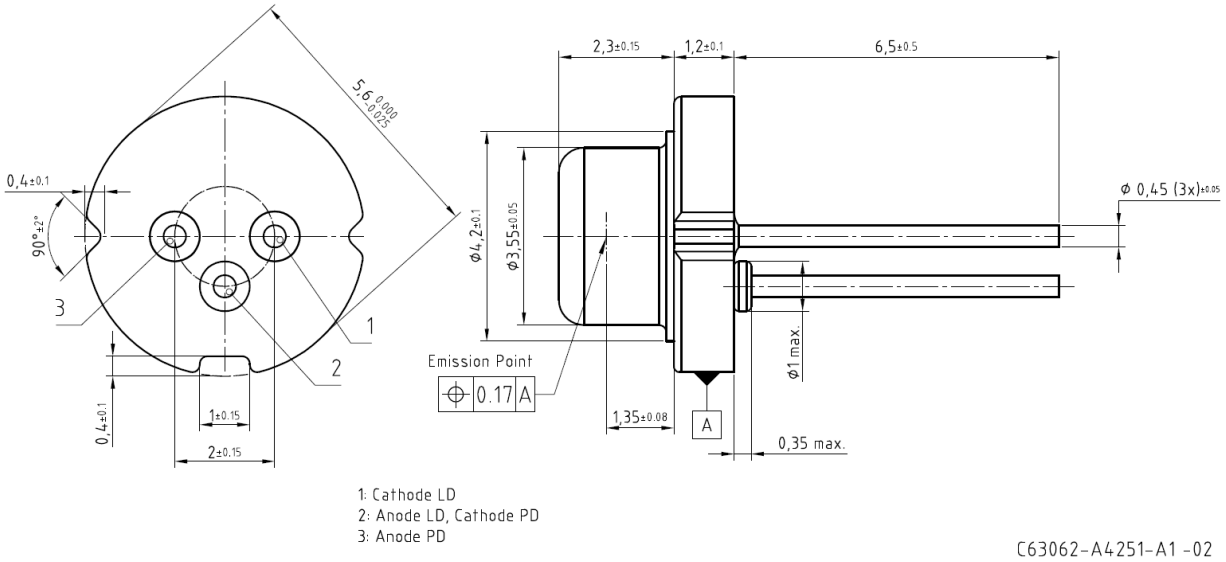
Threshold Current

$I_{th} = f(T_C)$



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Dimensional Drawing [10)]



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

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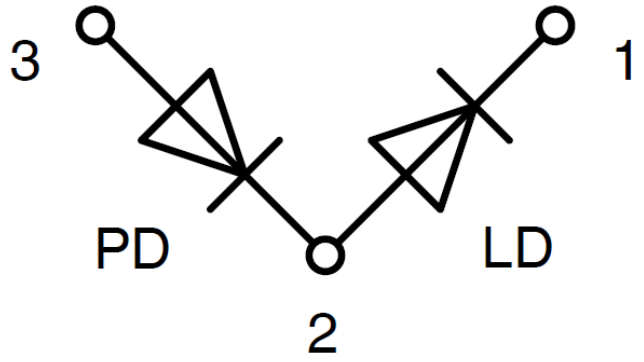
Further Information:

Approximate Weight: 310.0 mg

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

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Electrical Internal Circuit

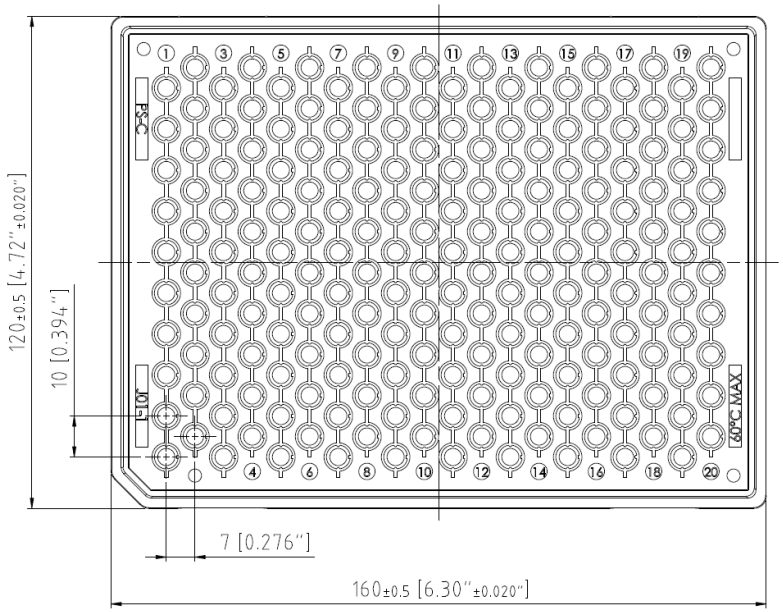


Pin	Description
PIN1	LD Cathode
PIN 2	LD Anode, PD Cathode (case)
PIN 3	PD Anode

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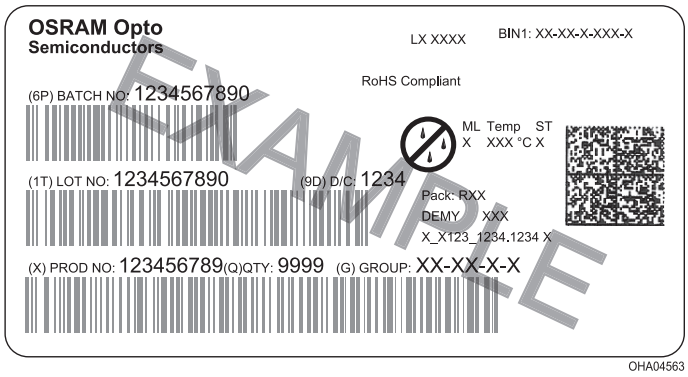
Tray [10)]

200 pieces per Tray



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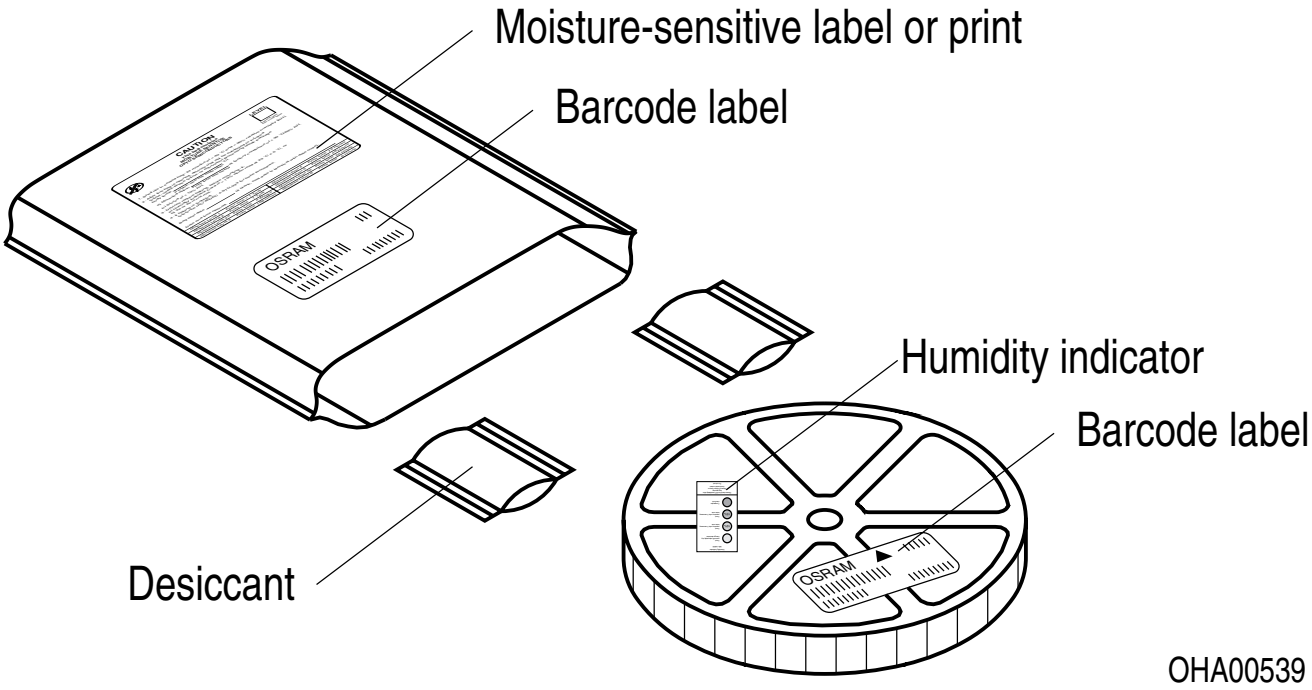
Barcode-Product-Label (BPL)



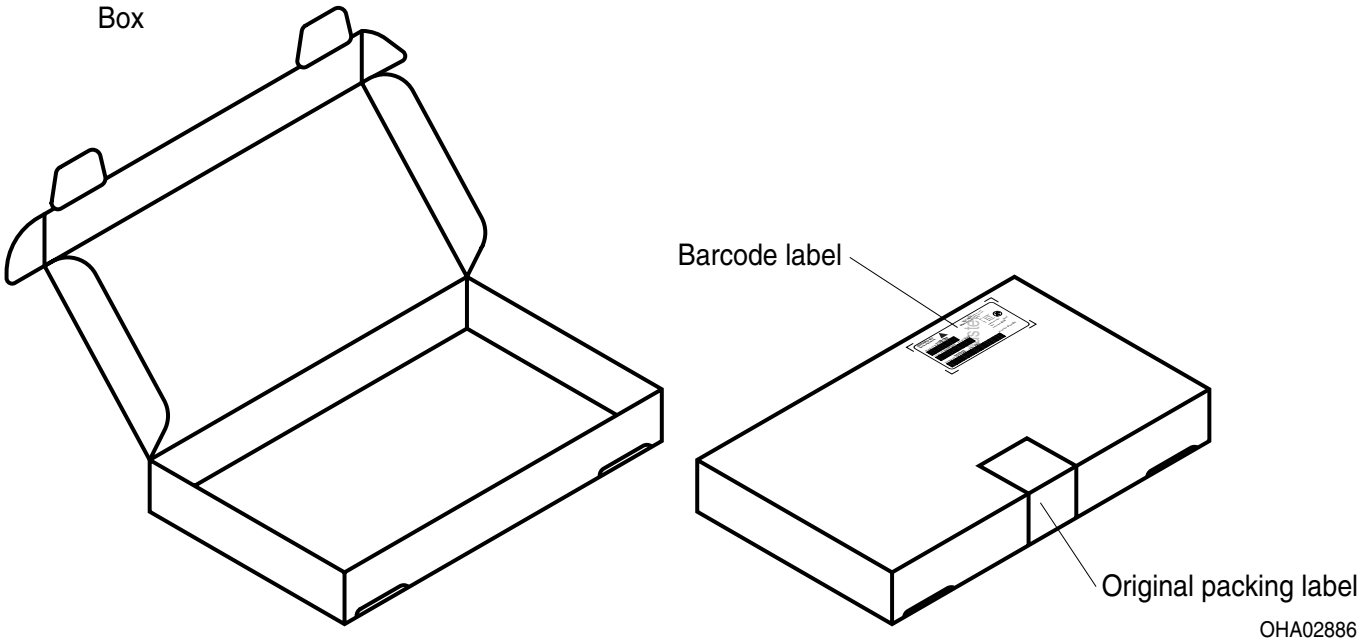
OHA04563

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Dry Packing Process and Materials



Schematic Transportation Box [10)]



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Dimensions of Transportation Box

Width	Length	Height
215 ± 5 mm	265 ± 5 mm	95 ± 5 mm

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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 www.osram-os.com/appnotes

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Glossary

1) **Operating/Forward current:** IF is measured with an internal reproducibility of ±7 % (acc. to GUM with a coverage factor of k = 3).

2) **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.

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

5) **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.

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

7) **Wavelength:** The wavelengths are measured with a tolerance of ±1 nm.

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.

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Revision History

Version	Date	Change
α.2	2021-02-02	Characteristics Wavelength Groups
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