PLT5 520EA_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_{case} = 25°C)
- Typical emission wavelength: 520 nm
- Efficient radiation source for cw and pulsed operation
- Single tranverse mode semiconductor laser
- High modulation bandwidth
- TO56 package with photo diode

Ordering Information

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

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.

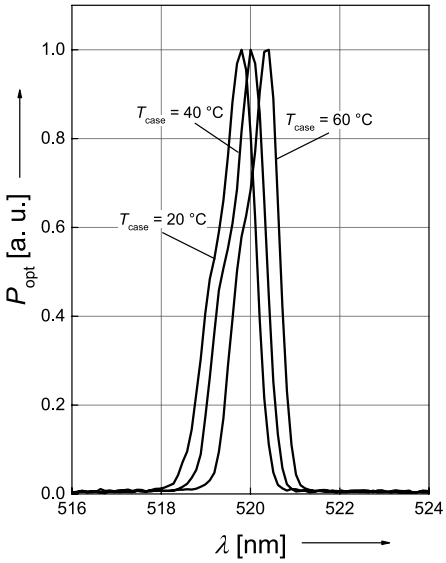
Characteristics

P_{opt} = 20 mW; T_{case} = 25 °C

Parameter	Symbol		Values
Forward current [1]	I_F	typ. max.	65 mA 105 mA
Peak wavelength [3]	λ_{peak}	min. typ. max.	510 nm 520 nm 530 nm
Spectral bandwidth at 50% $I_{e,rel,max}$	$\Delta\lambda$	typ.	1 nm
Beam divergence (FWHM) parallel to pn-junction	$\Theta_{\parallel}$	min. typ. max.	5 ° 6.6 ° 8 °
Beam divergence (FWHM) perpendicular to pn-junction	$\Theta_{\perp}$	min. typ. max.	19 ° 21.4 ° 25 °
Monitor current [4][5] V_R = 5 V	I_m	typ.	150 µA
Threshold current	I_{th}	typ. max.	35 mA 65 mA
Forward voltage [6]	V_F	typ. max.	6.2 V 7.5 V
TE polarization	P_{TE}	typ.	100:1
Modulation frequency	f	min.	100 MHz
Thermal resistance junction case real	R_{thJC}	typ.	34 K / W

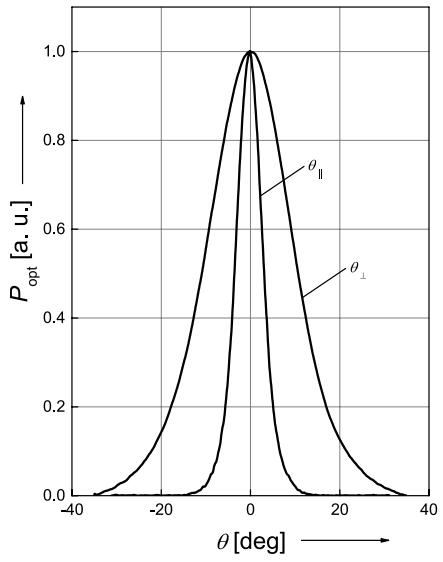
Relative Spectral Emission [7), 8)]

$I_{e,rel} = f(\lambda)$; I_F = 60 mA; P_{opt} = 20 mW



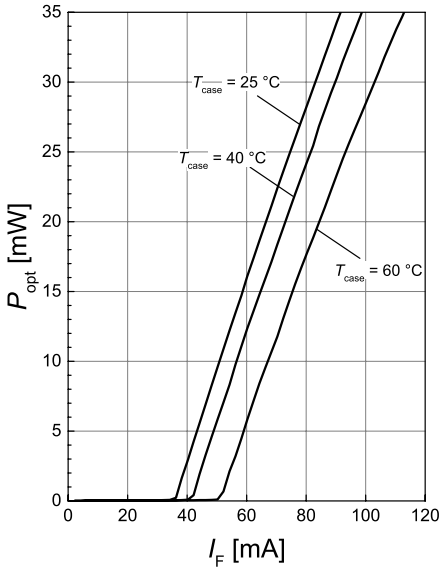
Beam Divergence [7), 8)]

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



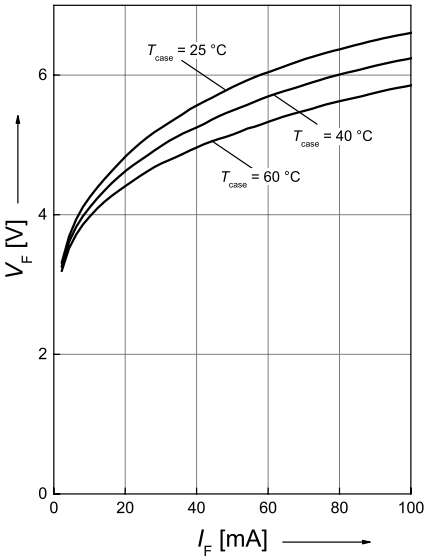
Optical Output Power [7), 8)]

$P_{opt} = f(I_F)$



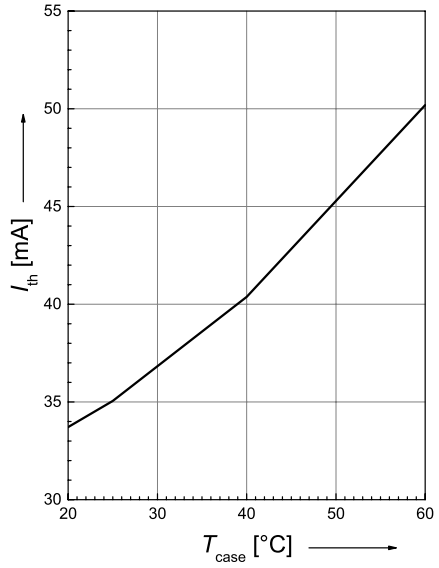
Opt. Power / Forward Voltage [7), 8)]

$V_F = f(I_F)$

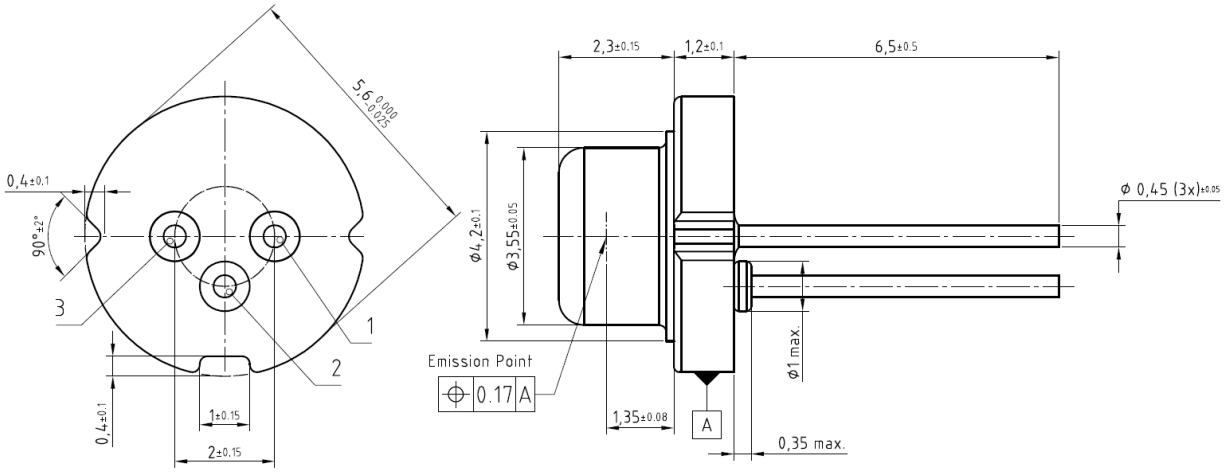


Threshold Current

$I_F = f(T)$



Dimensional Drawing [9)]



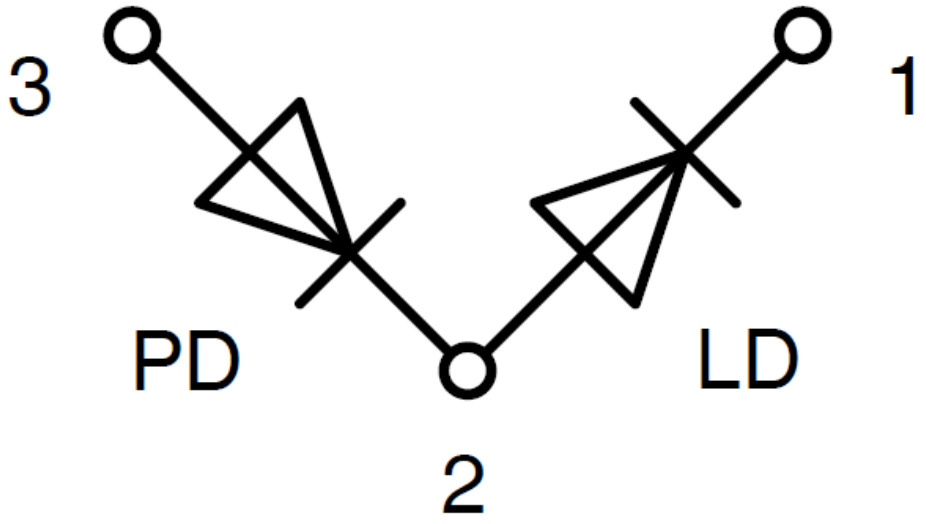
1: Cathode LD
2: Anode LD, Cathode PD
3: Anode PD

C63062-A4251-A1 -02

Approximate Weight: 310.0 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

Notes

Depending on the mode of operation, these devices emit highly concentrated visible and non visible light 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 informations 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:** Reverse Operation of 10 hours is permissible in total. Continuous reverse operation is not allowed.

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

4) **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.

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

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

7) **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.

8) **Testing temperature:** TA = 25°C

9) **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