

PLPT5 447KA

Metal Can® TO56

Blue Laser Diode in TO56 Package



Applications

- Electronic Equipment
- Projection Home LED & Laser
- Projection Professional LED & Laser
- Stage Lighting (LED & Laser)

Features:

- Qualifications: Depending on the mode of operation, these devices emit highly concentrated visible light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions found in IEC 60825 "Safety of laser products".
- Typical emission wavelength: 447 nm
- TO56 package
- High modulation bandwidth
- Multi-mode semiconductor laser
- Efficient radiation source for cw and pulsed operation
- Laser diode isolated against package
- ESD protection diode
- Optical power class: 1.6 W

Ordering Information

Type	Peak output power typ. P_{opt}	Ordering Code
PLPT5 447KA	1.6 W	Q65113A0154

Preliminary datasheet version

Maximum Ratings

$T_C = 25\text{ °C}$

Parameter	Symbol		Values
Operating temperature	T_{op}	min.	-20 °C
		max.	85 °C
Storage temperature	T_{stg}	min.	-20 °C
		max.	100 °C
Junction temperature	T_j	max.	135 °C
Output power	P_{opt}	max.	1.8 W
Operating current ¹⁾	I_{op}	max.	1.5 A
Soldering temperature	T_S	max.	260 °C

$t_{max} = 10\text{ s}$

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

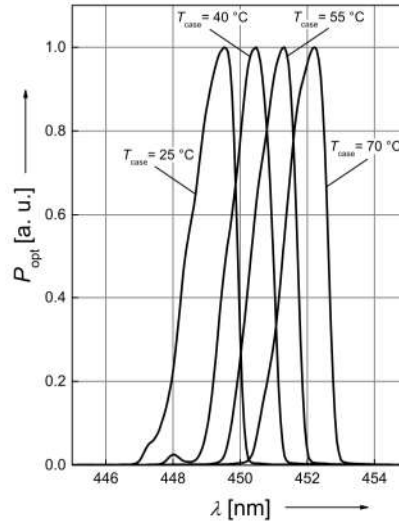
Characteristics

$P_{\text{opt}} = 1.6 \text{ W}$; $T_{\text{C}} = 25 \text{ }^{\circ}\text{C}$

Parameter	Symbol		Values
Operating current ¹⁾	I_{op}	typ. max.	1.2 A 1.5 A
Centroid wavelength ²⁾	$\lambda_{\text{centroid}}$	min. typ. max.	440 nm 447 nm 460 nm
Optical output power	P_{opt}	typ.	1.6 W
Beam divergence ($1/e^2$) parallel to pn-junction	Θ_{\parallel}	min. typ. max.	6 ° 10 ° 13 °
Beam divergence ($1/e^2$) perpendicular to pn-junction	Θ_{\perp}	min. typ. max.	35 ° 44 ° 50 °
Threshold current	I_{th}	typ. max.	0.19 A 0.30 A
Forward voltage ³⁾⁴⁾	V_{F}	typ. max.	4.9 V 6.0 V
Total power dissipation	P_{tot}	typ.	4.3 W
TE polarization	P_{TE}	typ.	100:1
Thermal resistance junction case real	R_{thJC}	typ.	13 K / W

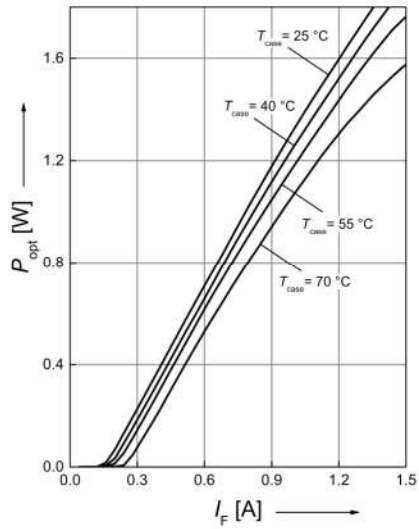
Relative Spectral Emission 5), 6)

$I_{e,rel} = f(\lambda); I_F = 1.2 \text{ A}; P_{opt} = 1.6 \text{ W}$



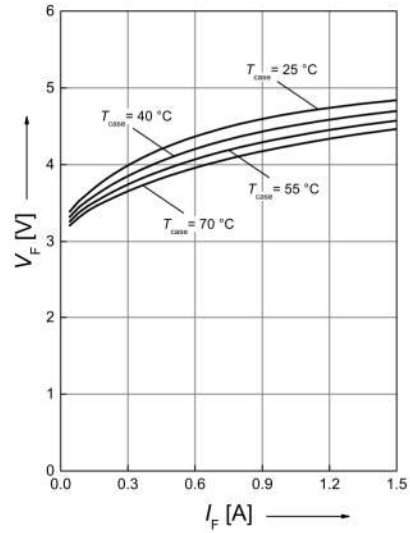
Optical Output Power 5), 6)

$P_{opt} = f(I_F)$



Opt. Power / Forward Voltage 5), 6)

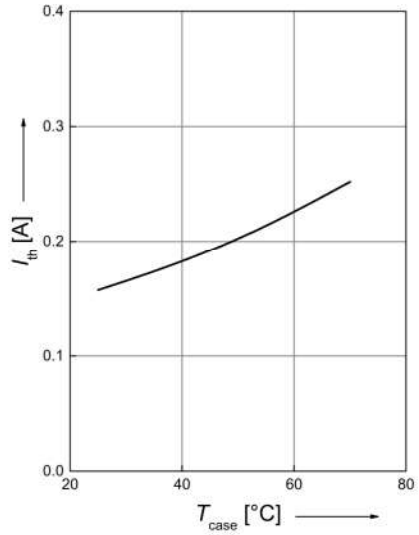
$V_F = f(I_F)$



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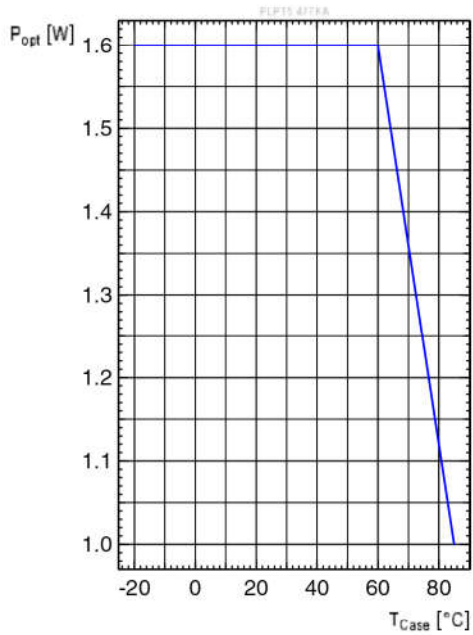
Threshold Current

$$I_{th} = f(T_C)$$



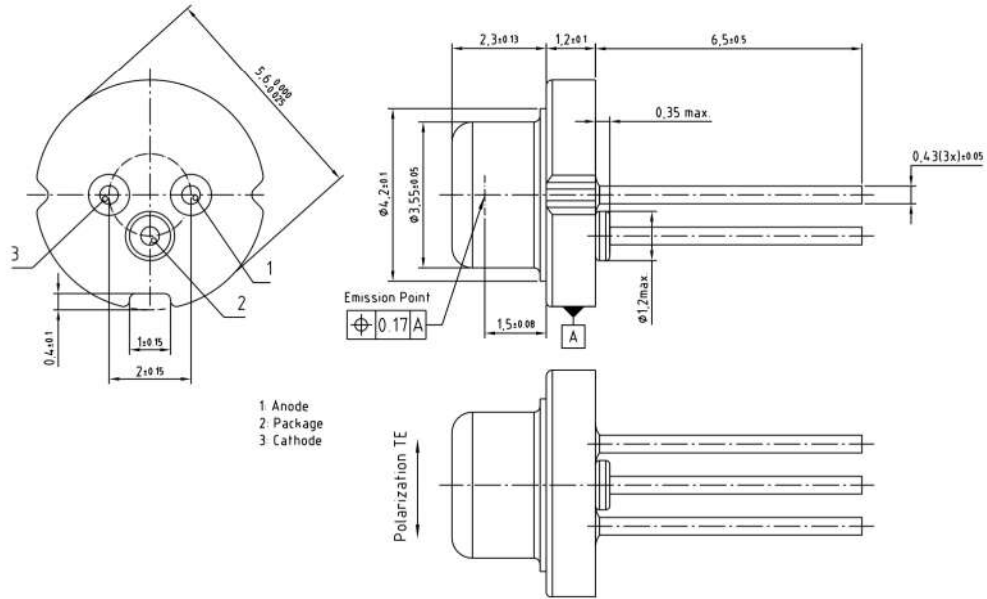
Max. Permissible Opt. Output Power

$$P_{opt} = f(T_C)$$



Preliminary datasheet version

Dimensional Drawing 7)



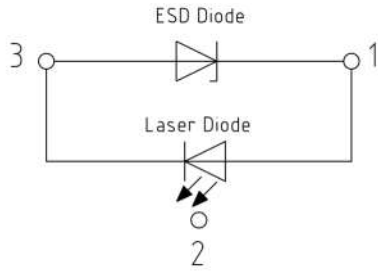
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Further Information:

Approximate Weight: 310.0 mg

Electrical Internal Circuit

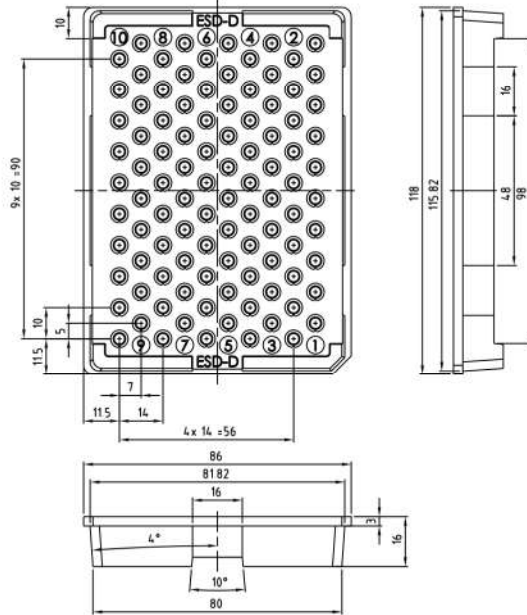
Pin Connection



Pin 1: LD Anode
 Pin 2: Case
 Pin 3: LD cathode

Pin	Description
PIN 1	LD Anode
PIN 2	Case
PIN 3	LD Cathode

Taping ⁷⁾



C63062-A4404-X1-01

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