

Blau Laser Diode in TO38 ICut Bauform Blue Laser Diode in TO38 ICut Package

PL T4 NSB

VORLÄUFIGES Datenblatt
PRELIMINARY Datasheet



Besondere Merkmale

- Typ. Emissionswellenlänge 450nm
- Effiziente Strahlungsquelle für Dauerstrich- und gepulsten Betriebsmodus
- Transversal Monomode Halbleiterlaser
- Hohe Modulationsbandbreite
- Miniaturisiertes TO38 ICut Gehäuse
- Laserdiode isoliert gegen Gehäuse

Anwendungen

- Laserprojektion
- Instrumentierung
- Bio- und Medizintechnik
- Holographie
- Messtechnik

Sicherheitshinweise

Je nach Betriebsart emittieren diese Bauteile hochkonzentrierte, sichtbare Strahlung, die gefährlich für das menschliche Auge sein kann. Produkte, die diese Bauteile enthalten, müssen gemäß den Sicherheitsrichtlinien der IEC-Norm 60825-1 behandelt werden.

Features

- Typ. emission wavelength 450nm
- Efficient radiation source for cw and pulsed operation
- Single transverse mode semiconductor laser
- High modulation bandwidth
- Miniaturized TO38 ICut package
- Laser diode isolated against package

Applications

- Laser projection
- Instrumentation
- Biomedical Applications
- Holography
- Metrology

Safety Advice

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 60825-1 "Safety of laser products".



ATTENTION - Observe Precautions For Handling - Electrostatic Sensitive Device

$(T_{\text{case}} = 25\text{ }^{\circ}\text{C})$ **Laser Characteristics**

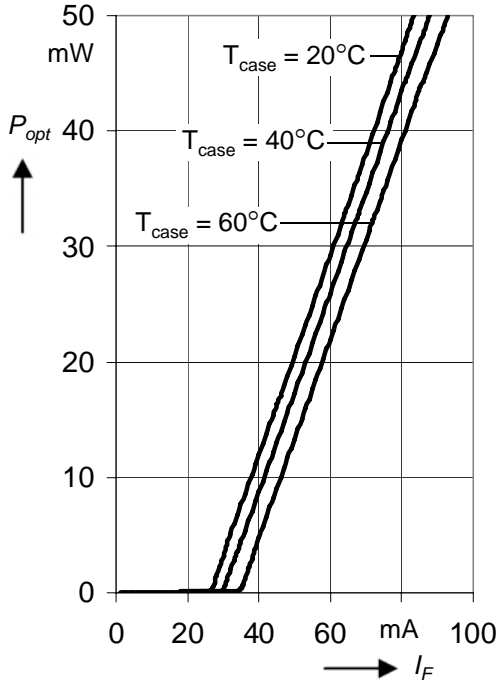
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Emission Wavelength ³⁾	λ_{peak}	440	–	460	nm
Spectral Width (FWHM) ³⁾	$\Delta\lambda$	–	2	–	nm
Threshold Current	I_{th}	–	30	60	mA
Operating Current ³⁾	I_{F}	–	80	120	mA
Operating Voltage ³⁾	V_{F}	–	5.5	6.5	V
Beam Divergence (FWHM) ³⁾	$\theta_{\parallel} \times \theta_{\perp}$	4x15	–	15x25	deg
Polarization ³⁾	P_{gr}	20:1		–	
Modulation Frequency	f	–	>100	–	MHz

3)

Standard operating conditions refer for
DL-445-50-1B to output power $P_{\text{op}}=30\text{mW}$
DL-445-50-1 to output power $P_{\text{op}}=50\text{mW}$

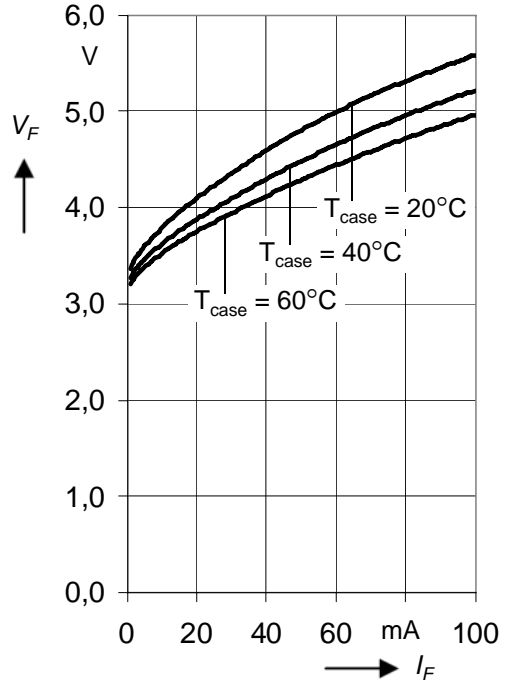
Optical Output Power

$P_{opt} = f(I_F)$



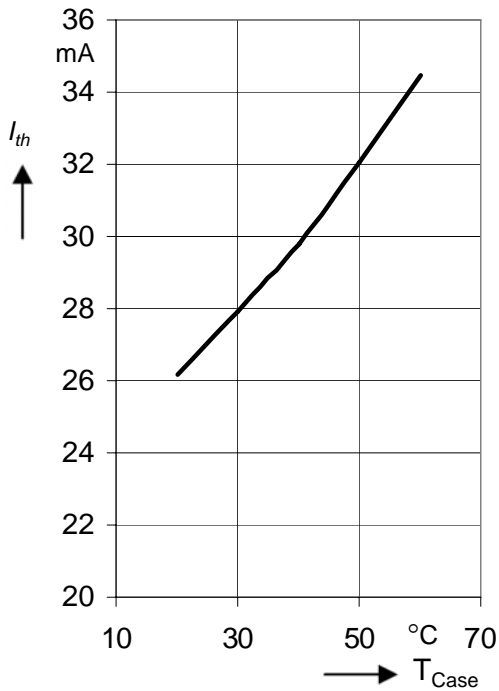
Operating Voltage

$V_F = f(I_F)$



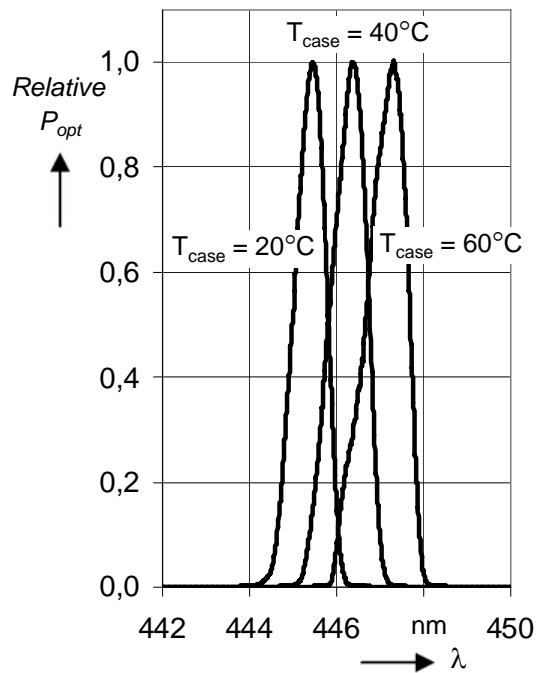
**Schwellstrom
Threshold Current**

$I_{th} = f(T_{Case})$



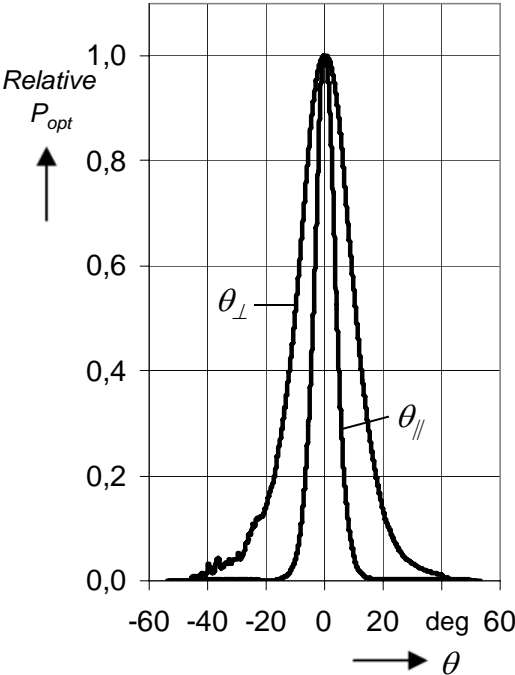
**Zentrale Emissionswellenlänge
Emission Wavelength**

$\lambda = f(T_{Case})$



Beam Divergence

$P_{opt} = f(\theta), T_{Case} = 25^{\circ}C$



Important notes of operation for laser diode:

a) Safety of laser product:

The laser diode is classified in **class 3B acc. IEC 60825-1**. The actual laser light emitted by the laser diode strongly depends on the mode of operation.

b) Electrical operation:

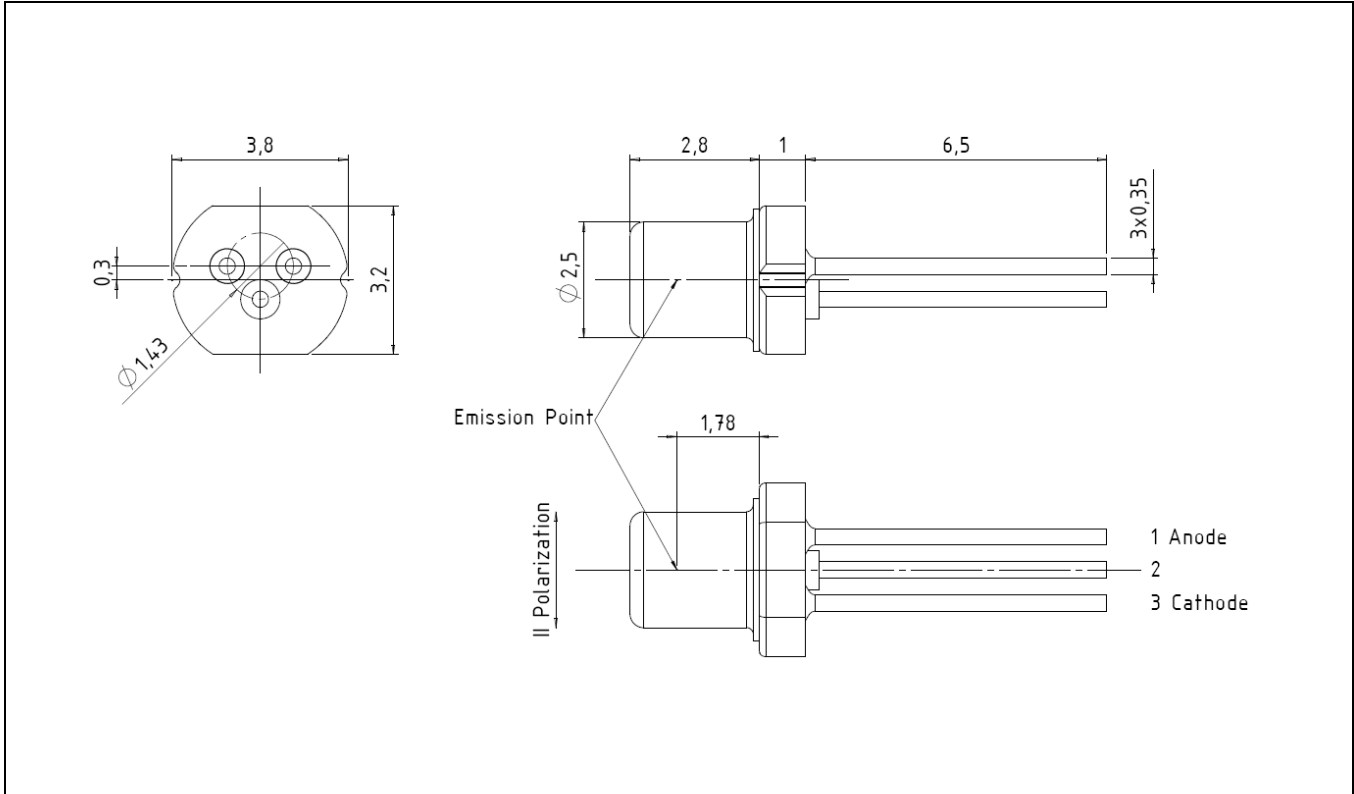
Laser diodes are designed for maximum performance and reliability. Operating the laser diode above the maximum rating even for very short periods of time can damage the laser diode or reduce its lifetime. The laser diode must be operated with a suitable power supply with minimized electrical noise.

The laser diode is very sensitive to electrostatic discharge (ESD). Proper precautions must be taken.

c) Mounting instructions:

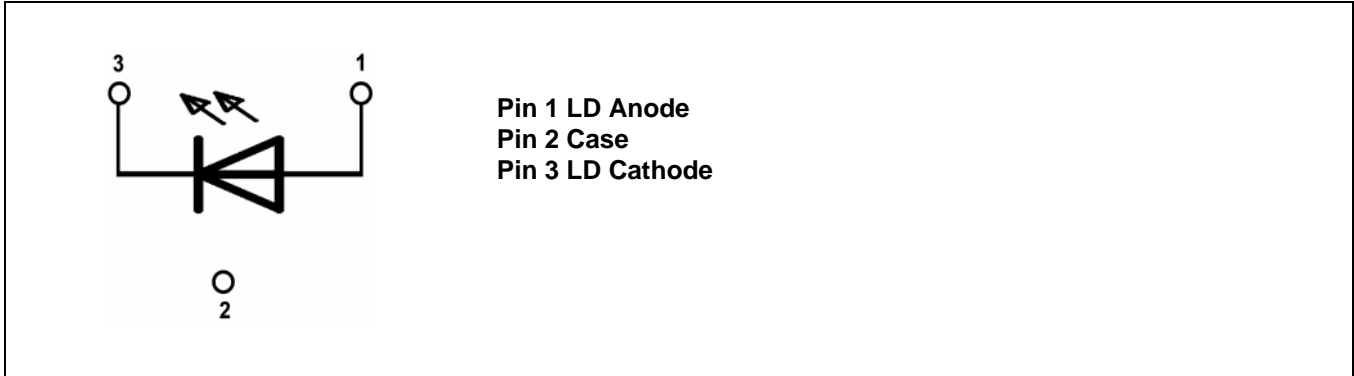
In order to maintain the lifetime of the laser diode proper heat management is essential. Due to the design of the laser diode heat is dissipated only through the base plate of the diode's body. A proper heat conducting interconnection between the diodes base plate and the heat sink must be maintained.

Preliminary Package Outlines



Maße in mm / Dimensions in mm

**Vorläufige Pinbelegung
Preliminary Pin Connection**



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The information describes the type of component and shall not be considered as assured characteristics. Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances. For information on the types in question please contact our Sales Organization.

Packing

Please use the recycling operators known to you. We can also help you get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

Components used in life-support devices or systems must be expressly authorized for such purpose! Critical components, may only be used in life-support devices or systems with expressed written approval.

A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system. Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health of the user may be endangered.

Revision History:

Previous Version:

Page	Subjects (major changes since last revision)	Date of change