LITEON OPTOELECTRONICS

Data Sheet

PULSED LASER DIODE
LTE-L201E-01

Descriptions

The LTE-L201E-01 is a nano-stacked pulsed laser diode in a TO56 package.

Applications

- Electronic equipment
- Equipment illumination
- Laser range finder, speed measurement
- Long range 3D sensing
- IR night illumination, motion detection, CCTV surveillance

Features

- 75W peak power at 30A operating current
- 95W peak power at 40A operating current
- Laser wavelength 905nm
- Suited for short laser pulses from 1ns to 100ns
- Laser aperture 200um x 10um

Ordering Information

Part Number	Packaging Type	Package	Quantity
LTE-L201E-01	Plastic Tray	TO56	Contact Sales

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Outline Dimensions

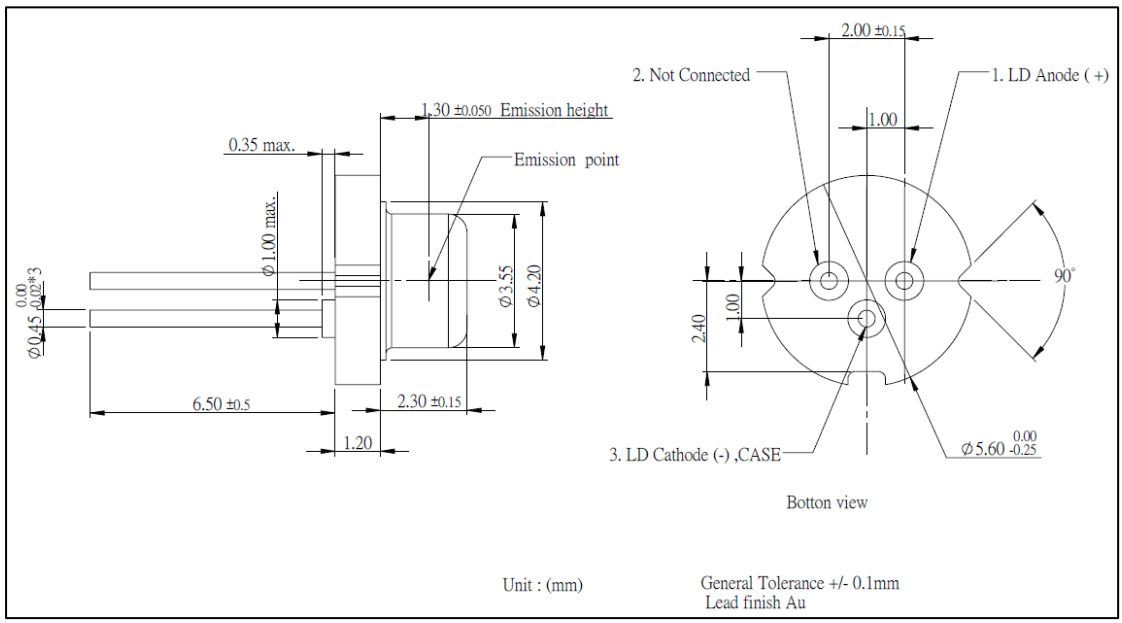

Figure 1 Dimensional drawings

Maximum Ratings

Operating T_{OP} = 25°C, unless otherwise stated.

Parameter	Symbol	Min.	Max.	Unit
Operating Temperature	T_{OP}	-40	85	°C
Storage Temperature	T_{ST}	-40	100	°C
Peak Output Power	P_{PEAK}		110	W
Operating Current	I_{OP}		40	A
Pulse Width	T_P		100	ns
Duty Cycle	D_C		0.1	%
Reverse Voltage	V_R		5	V
Soldering Temperature – Note 1 - 10 seconds max - 2mm from bottom edge of case			260	°C

Notes:

1. Based on IEC60068-2-20 (edition 6.0), Resistance to soldering heat, Test Tb, Method 1 solder bath, Pb-free; Depth of immersion 2mm from bottom edge of the case, with PCB as spacer.

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Electrical-Optical Specifications

Conditions, unless otherwise stated:

Operating Current I_{OP} = 40A; Pulse Width = 100ns; Duty Cycle = 0.01%; Operating T_{OP} = 25°C.

Description	Symbol	Min.	Typ.	Max.	Unit
Peak Output Power @ 30A I_{OP}	P_{PEAK}		75		W
Peak Output Power @ 40A I_{OP}	P_{PEAK}	80	95		W
Operating Current	I_{OP}		30	40	A
Threshold Current	I_{TH}		0.5		A
Operating Voltage	V_{OP}		13	15	V
Peak Wavelength	λ_{PEAK}	895	905	915	nm
Spectral Width (FWHM)	$\Delta\lambda$		9		nm
Peak Wavelength Temperature Coefficient			0.25		nm/K
Beam Divergence Parallel to pn-Junction	$\Theta_{\parallel}$		10		Deg
Beam Divergence Perpendicular to pn-Junction	$\Theta_{\perp}$		25		Deg
Emitter Aperture Size	w x h		200x10		μm^2
Thermal Resistance – Junction to Solder Point – Note2	R_{JS}		38		K/W

Notes:

2. Mounted on 16mm^2 pad PCB

Characteristics

Conditions, unless otherwise stated: Operating Current I_{OP} = 40A; Pulse Width = 100ns; Duty Cycle = 0.01%; Operating T_{OP} = 25°C.

Figure 2 Spectral Distribution Plot

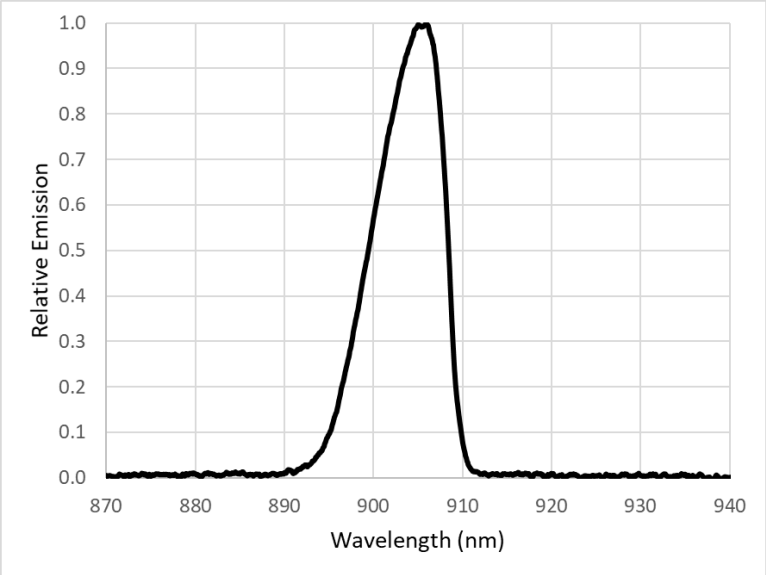


Figure 3 Forward Voltage vs Drive Current

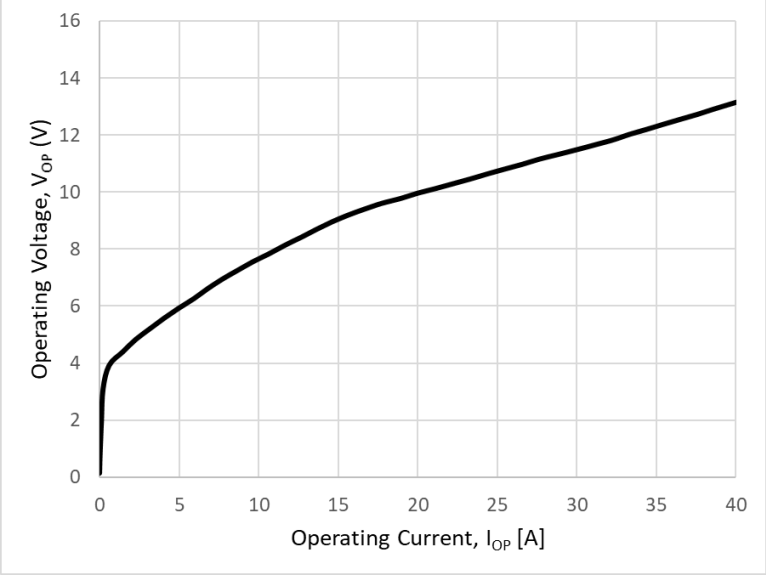


Figure 4: Far Field Pattern Perpendicular to PN-Junction

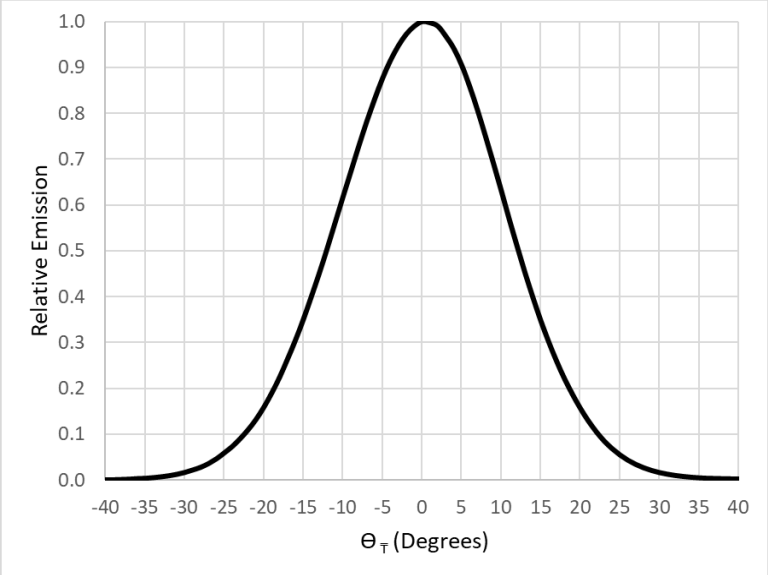


Figure 5: Far Field Pattern Parallel to PN-Junction

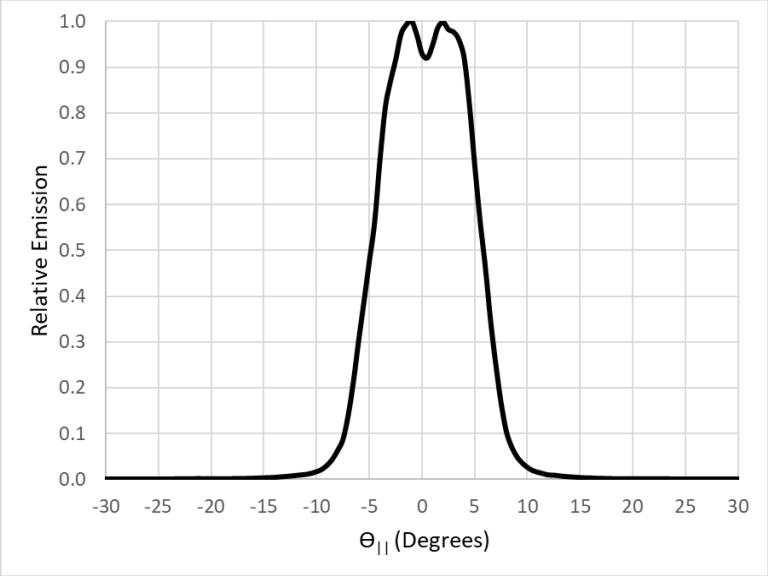


Figure 6 Peak Power vs Drive Current

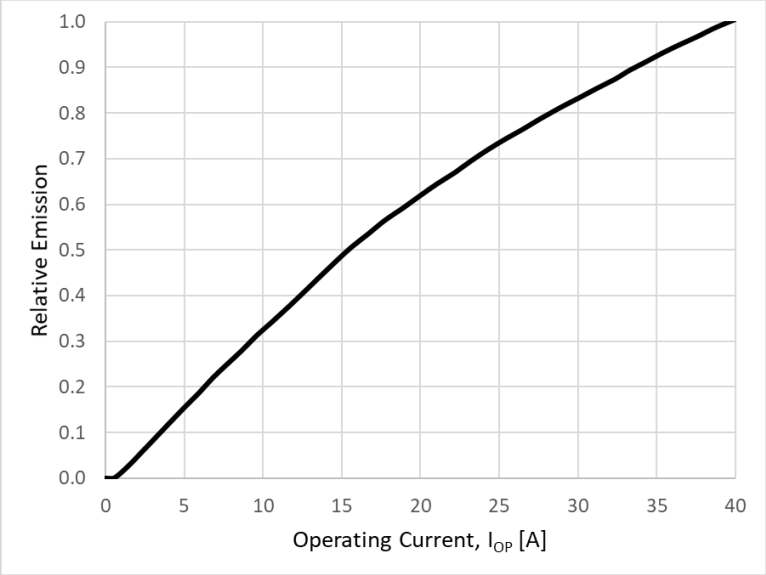


Figure 7 Peak Power vs Ambient Temperature

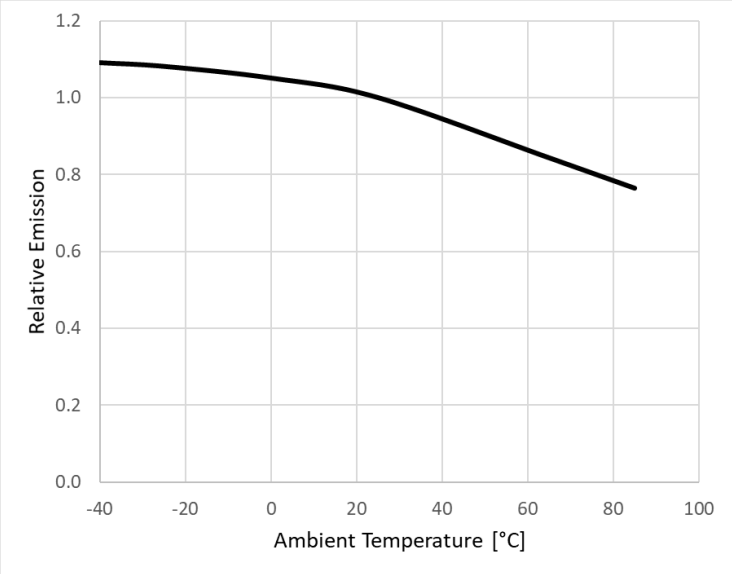


Figure 8 Peak Wavelength vs Drive Current

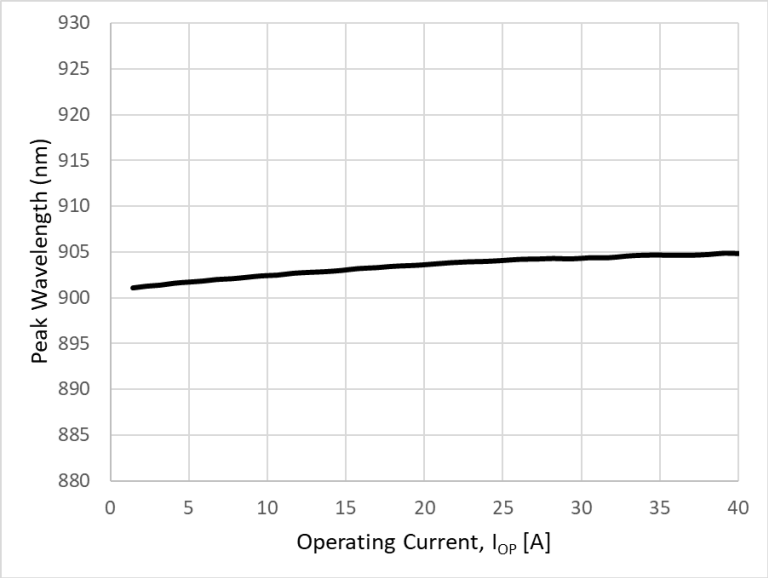
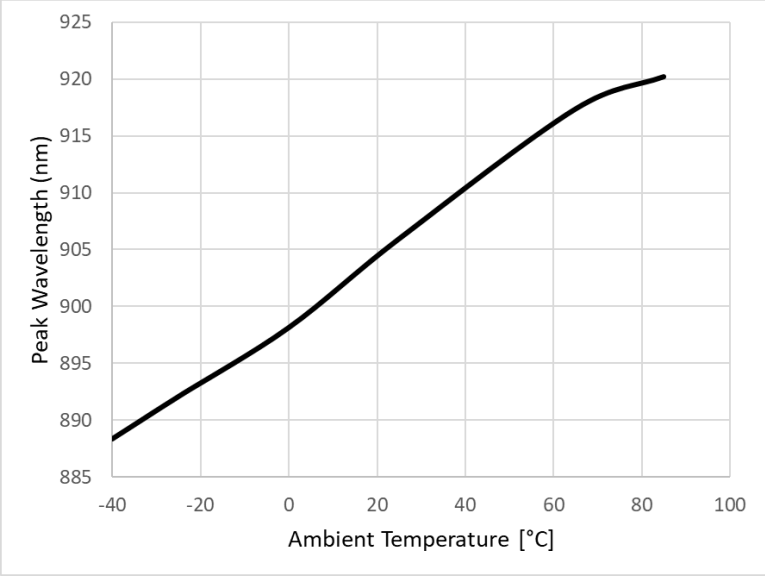


Figure 9 Peak Wavelength vs Ambient Temperature



Laser Safety

Depending on the mode of operation, the device produces invisible electromagnetic radiation that may be harmful to the human eye. It is the responsibility of the user incorporating a laser into a product to certify the class of use and ensure that it follows the safety precautions given in IEC 60825-1.

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Revision Table

Version	Update	Page	Date
1.0	Datasheet created	Total 9 pages	18/04/2023

Mouser Electronics

Authorized Distributor

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LITEON:

LTE-L201E-01