

Product Specification
 850nm 50W VCSEL Pulsed Laser Diode
 LD0850-C050-0120CBP-3535/T018 (V. 01)

PRODUCT FEATURES

- 850nm Multimode VCSEL
- Superexcellent thermal conduction
- Oxide Isolation Technology
- 97 Apertures design
- Modulation bandwidth>1Gbps
- Relatively small emission area

APPLICATIONS

- 3D Sensing
- Laser Curtain
- Range finder sensors
- Telescope distance meter
- Lidars
- Military applications

PRODUCT IDENTIFY

Part Number	Description
LD0850-C050-0120CBP-3535/T018	850nm 50W VCSEL Pulsed Laser Diode

I. Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to 105°C
Case Operating Temperature	-40 to 80°C
Relative Humidity	10% to 85%
Reverse Power Supply Voltage	5V
Maximum Forward Pulse Current	140A (Duty cycle 0.1% max.)
ESD Exposure (Human Body Model)	1000V

Notice

1. Stresses greater than those listed under " Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or other conditions above those indicated in the operations section for expended periods of time may affect reliability.
2. In its maximum rating diode laser operation could damage its performance or cause potential safety hazard such as equipment failure.
3. Electrostatic discharge is the main reason for the laser fault of the diode. Take effective precautions against ESD. When dealing with laser diodes, use the wrist strap, grounding work surface and strict antistatic technology.

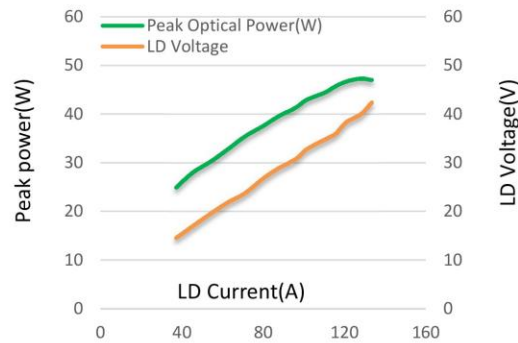
II. Electro-Optical Characteristics (Top 25°C, pulsewidth 6.2ns at 11.68 kHz)

VCSEL Parameters	Conditions	Symbol	Unit	Min.	Typ.	Max.
Pulse Optical Power	$I_f=120$ A	P_o	W	48	50	52
Threshold Current	-	I_{th}	A	-	0.1	-
Forward Pulse Current	-	-	A	-	120	-
Emission Area	-	-	um	-	370*371	-
Peak Wavelength	$P_o=50$ W	-	nm	840	850	860
Laser Forward Voltage	$I_f=120$ A	V_f	V	36	38	40
Series Resistance	$I_f=120$ A	R	Ω	0.30	0.32	0.33
Beam Angle	$I_f=120$ A	-	Degrees	-	20	-
Wavelength Shift	$I_f=120$ A	-	nm/°C	-	0.07	-
Rise Time	-	T_r	ns	-	2	-
Soldering Temperature	-	-	°C	-	-	260(10s)
Duty Cycle	-	-	%	-	-	0.1
Substrate	3535 Al ₂ O ₃ /T018 Cu					

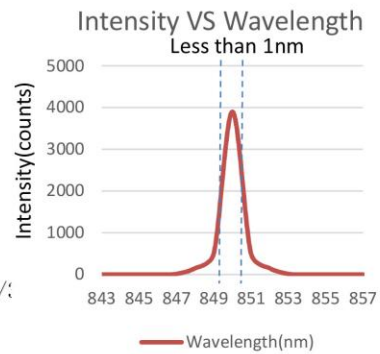
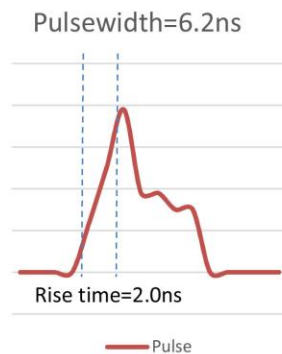
III. Enviromental Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Ref.
Case Operating Temp	T_{op}	-40	20	80	°C	-
Storage Temp	T_{sto}	-40	20	80	°C	-

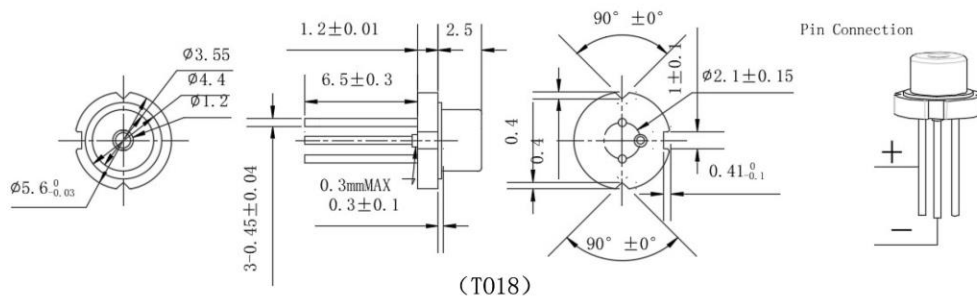
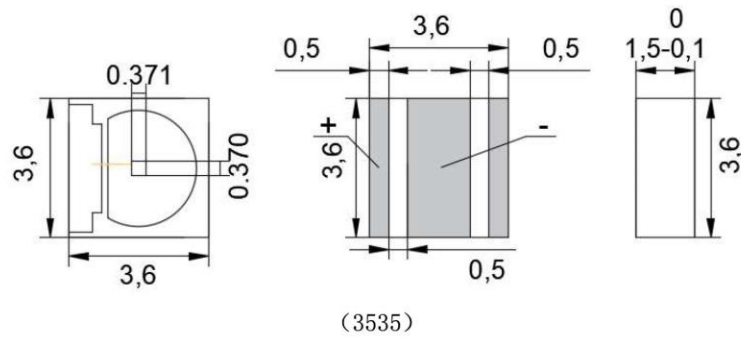
IV. LIV Graph



V. Pulse and Wavelength



VI. Mechanical Specifications (unit:mm)



VII. Revision History

Revision	Date	Description
V. 01	2019/03/04	Official datasheet created