

Laser Diode LT-LD-RGB-23.1W-A

LT-LD-RGB-23.1W-A is a high-efficiency multi-beam laser diode delivering up to 23.1W CW. Packaged with nine integrated emitters, Blue 2 series, Green 3 series, Red 4 series, and built-in Zener diode protection, it provides reliable performance for demanding high-power laser applications.

■ Absolute Maximum Ratings (T_c=25°C)

Parameter	Symbol	Color	Value	Unit
Forward Current	I _f	Blue	3.5	A
		Green	2.3	A
		Red	3.45	A
Cathode Current (CW) *	I _f	Multiple	5.0	A
Allowable Reverse Current	I _R	Blue	85	mA
		Green	85	mA
		Red	85	mA
Storage Temperature	T _{stg}	-	-40~85	°C
Operating Case Temperature	T _m	-	0~55	°C

* When two or more different colored chips are operated simultaneously

■ Initial Electrical/Optical Characteristics (Tc=25°C)

Parameter		Symbol	Color	Condition	Min	Typ.	Max	Unit
Optical Output Power		P _o	Blue	CW	7.1	8.3	9.5	W
			Green		4.0	4.8	5.5	W
			Red		8.5	10.	11.5	W
Dominant Wavelength		λ _d	Blue	CW	458	(465)	472	nm
			Green		519	(525)	531	nm
			Red ¹		635	(639) (643) (647)	651	nm
Threshold Current		I _{th}	Blue	CW	300	-	550	mA
			Green		150	-	500	mA
			Red		400	-	650	mA
Slope Efficiency		η	Blue	CW	-	3.2	-	W/A
			Green		-	2.5	-	W/A
			Red		-	4.0	-	W/A
Operating Voltage		V _{op}	Blue	CW	7.0	8.4	10.0	V
			Green		12.5	14.5	17.5	V
			Red		7.5	9.0	11.0	V
Beam Divergence	Parallel	θ _{//}	Blue	CW	0	0.8	1.6	°
			Green		-0.4	0.4	1.2	°
			Red		4.0	5.0	6.0	°
	Perpendicular	θ _⊥	Blue	CW	-1.5	0	1.5	°
			Green		-1.5	0	1.5	°
			Red		-1.5	0	1.5	°

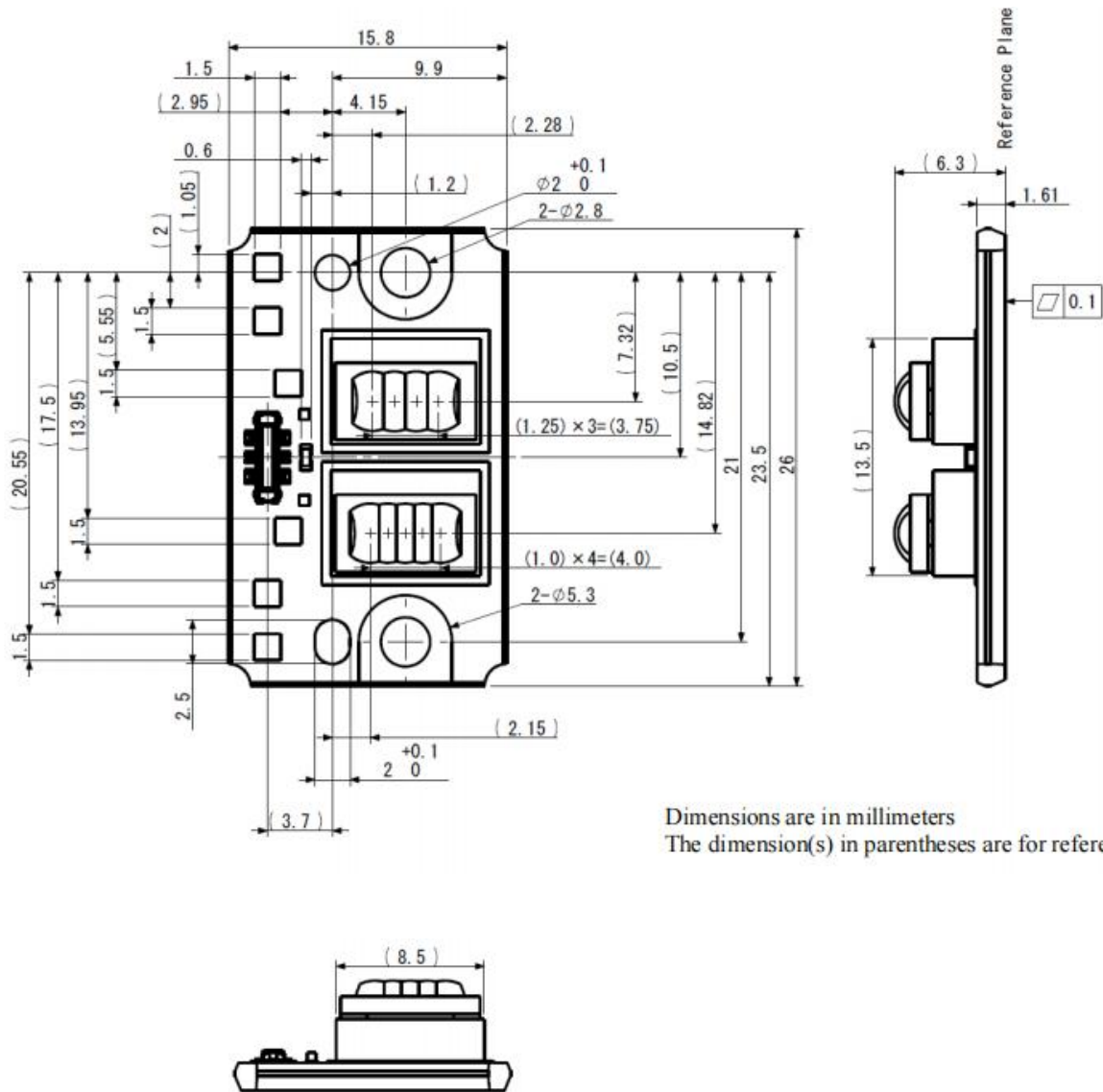
() are reference figures.

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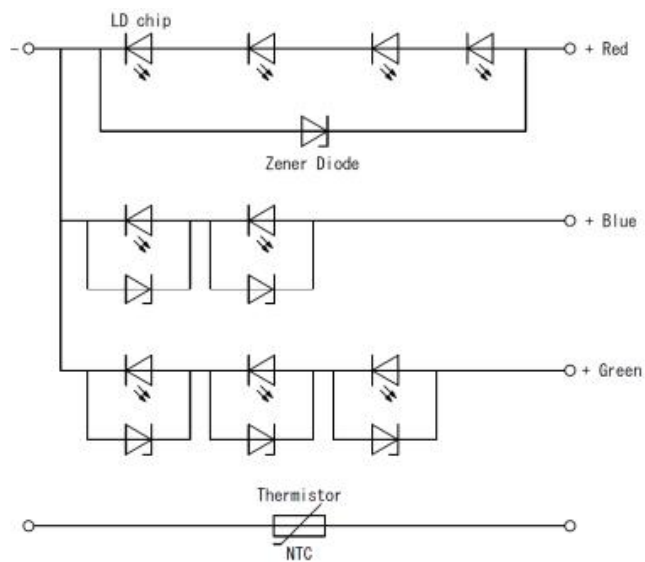
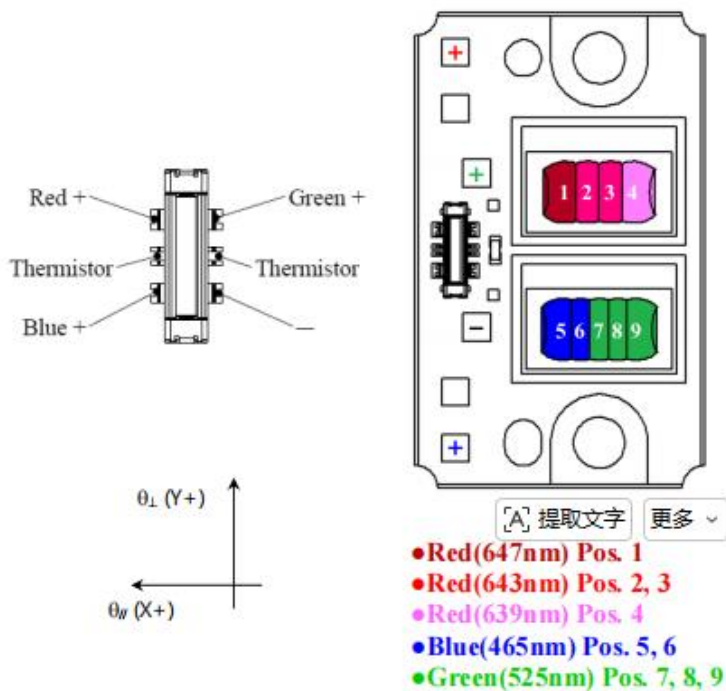
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■ Outline Dimension (Unit:mm)



■ LD die Position No.& Pad connection



This model has a Zener Diode built in as a protection circuit against static electricity.

■ Cautions

1. Laser light can damage the human eye and skin. Do not expose the eye and skin to any laser light directly or through optical lenses. Focused laser beam through optical instruments will increase the chance of eye hazard.
2. The laser needs a stable driver to avoid surges. The instantaneous reverse current and reverse voltage should not exceed the absolute maximum ratings, otherwise it will damage the laser diode.
3. Semiconductor lasers are sensitive to temperature, working at high temperatures will reduce the photoelectric conversion efficiency and accelerate the aging of laser diode. It should be used under adequate heat dissipation or cooling conditions.
4. The laser should be used at the rated current and rated power, the output power is too high will accelerate the aging of laser diode.
5. Semiconductor lasers are electrostatic sensitive devices, anti-static measures should be taken during storage and transportation.
6. Lasers should be stored or work in a dry, ventilated environment to prevent damage to the laser from condensation.
7. The light emitting surface (cavity surface) is the key parts of the laser diode, any handling to damage the cavity surface should be strictly prohibited. It should be ensured that the laser diode is not contaminated, and damaged in mechanical.

