激光二极管

点击图标即可链接至罗姆官网的产品介绍页面。可通过官网确认最新情况。

激光二极管

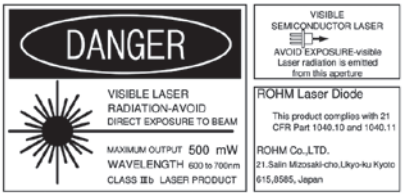
红光激光二极管

Part No.	Wavelength λP (nm)	Absolute Maximum Ratings (Tc=25°C)			Electrical and Optical Characteristics (Tc=25°C)							Po (mW)	Package	Equivalent Circuit
		Po (mW)	VR (V)	Topr Max (°C)	ITH (mA)	Iop (mA)	η (W/A)	Vop (V)	Im (mA)	θ⊥ (deg)	θ// (deg)			
RLD65MZT7	659	7	2	70	20	28	0.70	2.3	0.24	27.0	8.0	5	ϕ5.6mm	PD (2) (3) LD (1)
RLD63NPC5 (Pure red)	635	6	2	40	24	33	0.55	2.2	0.18	32.0	8.0	5	ϕ5.6mm (Open)	
RLD63NPC6 (Pure red)	638	12	2	50	28	43	0.70	2.3	0.15	32.0	8.0	10	ϕ5.6mm (Open)	
RLD63NPC7 (Pure red)	638	17	2	50	32	57	0.60	2.2	0.16	30.0	8.0	15	ϕ5.6mm (Open)	
RLD63NPC8 (Pure red)	638	24	2	50	32	65	0.60	2.25	0.20	30.0	8.0	20	ϕ5.6mm (Open)	PD (2) (3) LD (1)
New RLD65NZN5	660	10	2	60	11	20	0.75	2.25	0.65	25	9	7	ϕ5.6mm	
RLD65NZX1 (Higher temp.)	663	10	2	80	15	24	0.85	2.3	0.30	27.0	9.0	7	ϕ5.6mm	
RLD65NZX2 (Higher ESD)	658	7	2	70	25	33	0.60	2.3	0.20	28.0	8.5	5	ϕ5.6mm	
RLD63PZCA (Pure red)	638	7	2	50	28	33	0.80	2.2	0.08	32.0	8.0	5	ϕ5.6mm	
RLD65PZX2 (Higher ESD)	658	7	2	70	25	33	0.60	2.3	0.20	28.0	8.5	5	ϕ5.6mm	PD (2) (3) LD (1)
RLD65PZX3 (Higher ESD)	658	12	2	70	25	42	0.60	2.3	0.30	28.0	8.5	10	ϕ5.6mm	

注：除另行标注外，所有电气及光学特性皆为标准值。

●关于开封品

开封产品(包装MARK为P的产品)的特性和可靠性可能因外部环境而恶化。
对于包含碳粉、人为异物、香烟烟雾在内的异物、离子导致的腐蚀、粘接剂及助焊剂的挥发性成分带来的影响、冷凝、光镊子效应等，请采取足够完善的解决措施。
此外，请注意不要触碰激光芯片发光部等组成器件。



红外半导体激光二极管

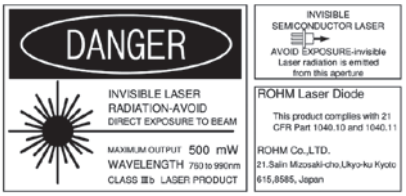
Part No.	Wavelength λP (nm)	Absolute Maximum Ratings (Tc=25°C)			Electrical and Optical Characteristics (Tc=25°C)							PO (mW)	Package	Equivalent Circuit
		PO (mW)	VR (V)	Topr Max (°C)	ITH (mA)	Iop (mA)	η (W/A)	Vop (V)	Im (mA)	θ⊥ (deg)	θ// (deg)			
RLD78MZA6	790	4.5	2	70	25	35	0.35	1.9	0.15	37.0	11.0	3	ϕ5.6mm	PD (2), (3), LD (1)
RLD78MZM7	792	20	2	60	11	33	0.65	1.8	0.50	24.0	8.5	15	ϕ5.6mm	
RLD78NZM5	793	10	2	60	10	20	0.55	1.8	1.15	28.0	9.0	6	ϕ5.6mm	PD (2), (3), LD (1)
RLD78NZM7	792	20	2	60	11	33	0.65	1.8	0.90	24.0	8.5	15	ϕ5.6mm	
RLD82NZJ1	822	220	2	60	50	255	0.95	2.4	0.30	17.0	9.5	200	ϕ5.6mm	
RLD84NZJ2	842	220	2	60	40	250	0.95	2.4	0.40	19.0	9.5	200	ϕ5.6mm	
RLD85NZJ4	852	220	2	60	40	250	0.95	2.4	0.40	19.0	9.5	200	ϕ5.6mm	
RLD78PZM7	792	20	2	60	11	33	0.65	1.8	0.65	24.0	8.5	15	ϕ5.6mm	PD (2), (3), LD (1)
RLD82PZJ1	822	220	2	60	50	255	0.95	2.4	0.30	17.0	9.5	200	ϕ5.6mm	
RLD84PZJ2	842	220	2	60	40	250	0.95	2.4	0.40	19.0	9.5	200	ϕ5.6mm	
RLD85PZJ4	852	220	2	60	40	250	0.95	2.4	0.40	19.0	9.5	200	ϕ5.6mm	
RLD94PZJ5	942	285	2	65	55	325	0.75	2.2	0.90	30.0	35.0	200	ϕ5.6mm	

注：除另行标注外，所有电气及光学特性皆为标准值。

多光束半导体激光二极管

Part No.	Wavelength λP (nm)	Absolute Maximum Ratings (Tc=25°C)			Electrical and Optical Characteristics (Tc=25°C)							PO (mW)	Package	Equivalent Circuit
		PO (mW)	VR (V)	Topr Max (°C)	ITH (mA)	Iop (mA)	η (W/A)	Vop (V)	Im (mA)	θ⊥ (deg)	θ// (deg)			
New RLD2BPNG5	792	25	2	60	10	42	0.8	1.8	0.7	27.5	9.5	25	ϕ5.6mm CAN (4PIN)	PD (4), LD2 (2), (3), LD1 (1)

注：除另行标注外，所有电气及光学特性皆为标准值。



激光二极管

高输出功率半导体激光二极管

Part No.	Wavelength λP (nm)	Absolute Maximum Ratings (TC=25°C) IF (A)	PO (W)	Topr Max (°C)	Electrical and Optical Characteristics (TC=25°C) IF (A)	PO (W)	ITH (A)	VF (V)	θ⊥ (deg)	θ// (deg)	Emission area (μm×μm)	Measurement pulse condition	Package	Equivalent Circuit
New RLD90QZWA	905	6	17	85	5	15	0.3	13	20	14	35×10	Pulse width 50ns duty ratio 0.05%	φ5.6mm	(3) LD (2) (1)
RLD90QZWJ		9	25		9	25	0.4	15	20	14	50×10		φ5.6mm	
New RLD90QZWB		11	30		9	25	0.4	13	25	14	50×10		φ5.6mm	
RLD90QZW5		9	25		9	25	0.4	14	25	12	70×10		φ5.6mm	
New RLD90QZWC		11	30		9	25	0.4	12	25	13	70×10		φ5.6mm	
RLD90QZWD		13	40		12	35	0.5	11	25	13	100×10		φ5.6mm	
RLD90QZW3		28	90		23	75	0.9	11	25	12	225×10		φ5.6mm	
New RLD90QZW8		46	145		38	120	—	13	20	11	270×10		φ5.6mm	

注：除另行标注外，所有电气及光学特性皆为标准值。

VCSEL(表面发光激光二极管)*

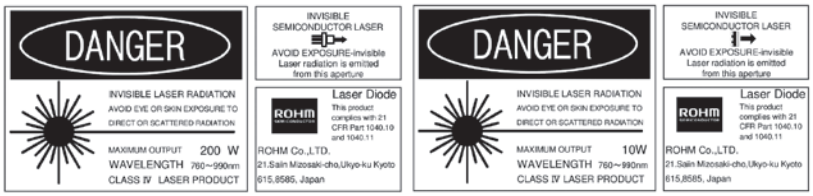
Part No.	Wavelength λP (nm)	Electrical and Optical Characteristics (TC=25°C) PO (mW)	IF (mA)	VF (V)	ITH (mA)	PCE (%)	θ [FWHM] (deg)	η (W/A)	Emission area (mm×mm)	Measurement pulse condition	Package	Equivalent Circuit
☆RLD94SAQ6	940	200	300	2	70	33	13	0.85	0.41×0.23	Pulse width 800μs 1shot	t=0.77	(2) LD (1)
☆RLD94SAQ8	940	2,400	3,000	2	750	40	−00A: 20 −10A: 60×45 −20A: 72×55 −30A: 90×69 −40A: 110×85	1	1.10×0.82	Pulse width 400μs 1shot	−00x: t=0.77 other: t=0.97	

注：除另行标注外，所有电气及光学特性皆为标准值。
*也可出售元件。详细内容请咨询销售人员。

☆: 开发中

●关于安全性

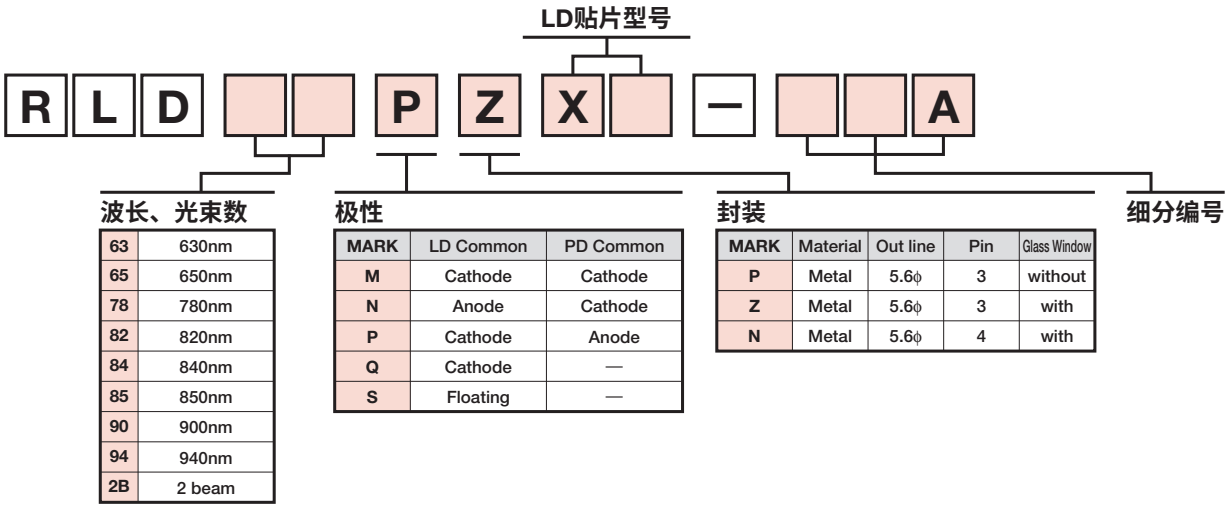
本产品旨在用于普通的电子设备或装置。
激光二极管发出的光对人体有害，因此不要直视或用镜片、硬化纸板等观看发光部。



如果需要在要求极高可靠性的、因产品故障或误操作会直接引起人身安全的机器或装置中使用时，请事先向ROHM销售代表咨询。

激光二极管

●品名构成说明



63	630nm
65	650nm
78	780nm
82	820nm
84	840nm
85	850nm
90	900nm
94	940nm
2B	2 beam

MARK	LD Common	PD Common
M	Cathode	Cathode
N	Anode	Cathode
P	Cathode	Anode
Q	Cathode	—
S	Floating	—

MARK	Material	Out line	Pin	Glass Window
P	Metal	5.6ϕ	3	without
Z	Metal	5.6ϕ	3	with
N	Metal	5.6ϕ	4	with

●记号和定义

■绝对最大额定值

在任何外部条件下，就是瞬间也不得超过的数值即绝对最大额定值。
以外壳温度T_C＝25°C时的数值作出规定。

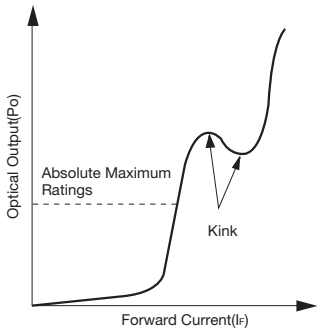
Parameter	Symbol	Definition
Optical Output	P_O	Maximum allowable optical output during continuous or pulse operation. No kinks will appear in the output vs. forward current curve up to this output value. (Fig.1)
Reverse Voltage	V_R	The maximum allowable voltage when a reverse bias is applied to the device. Lasers and photo diodes are rated separately.
Operating Temperature	Topr	Allowed ambient temperature range when the device is in operation. Delined to be the case temperature of the device.
Storage Temperature	Tstg	Allowed temperature range when the device is being stored.

■电气及光学特性

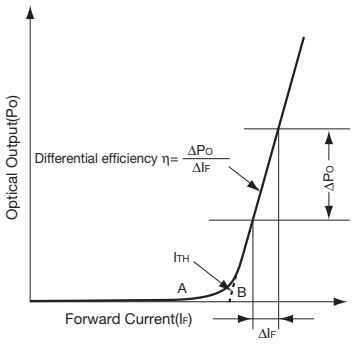
Item	Symbol	Definition
Threshold Current	I_{TH}	In Fig.2, A is the spontaneous emission range and B is the stimulated emission range. The threshold current is the current at which laser emission begins.
Operating Current	I_{OP}	The forward current required to generate the specified optical output.
Operating Voltage	V_{OP}	The forward voltage required to generate the specified optical output.
Differential Efficiency	η	The average increase in the output per unit of drive current. In the laser emission range, this is the slope of the linear optical output vs. forward current curve. (Fig.2)
Monitor Current	I_m	When the specified optical output is generated, this is the output current of the photodiode when a specified reverse voltage is applied to the monitor photodiode.
Parallel Divergence Angle Perpendicular Divergence Angle	θ// θ⊥	Light emitted from the laser spreads as shown in Fig.3. The result of measurements of this spread in the parallel (x) and perpendicular (y) directions with respect to the junction surface is shown in Fig.3. The widths of the spread at the points where the strength drops to 1/2 the peak strength (half value full angles) are defined as angles and called θ//and θ⊥. (Fig.4)
Parallel Deviation Angle Perpendicular Deviation Angle	Δϕ// Δϕ⊥	These values express the deviation of the optical axis with respect to the reference plane, and are defined for the parallel and perpendicular spread angles (Fig.4) to be (a - b)/2 (Fig.5).
Emission Point Accuracy	ΔX, ΔY, ΔZ	This indicates the amount of deviation of the emission point.ΔX and ΔY indicate deviation from the center of the package, and ΔZ indicates deviation from the reference plane. (Fig.6)
Peak Emission Wavelength	λ_p	Peak emission wavelength when generating the specified output. As shown in Fig.7, the emission spectrum has both a single mode and a multimode. In the multimode, the wavelength is delined as the wavelength with the highest intensity.
Power Conversion Efficiency	PCE	This indicates the ratio of optical output to input electric power.

激光二极管

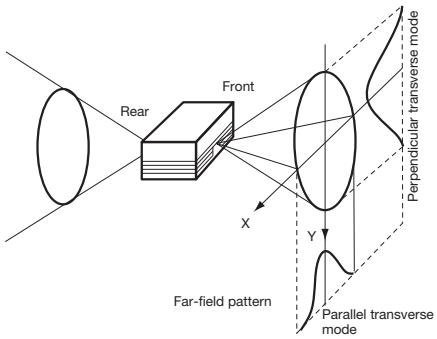
■Fig.1 光输出-正向电流特性



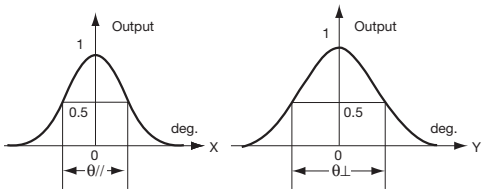
■Fig.2 光输出-正向电流特性



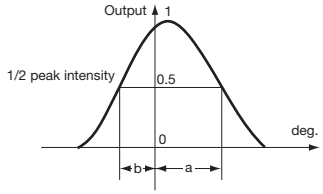
■Fig.3 辐射特性



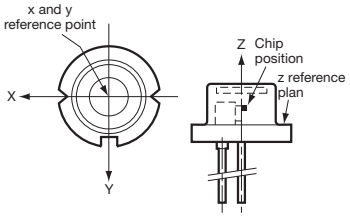
■Fig.4 辐射特性



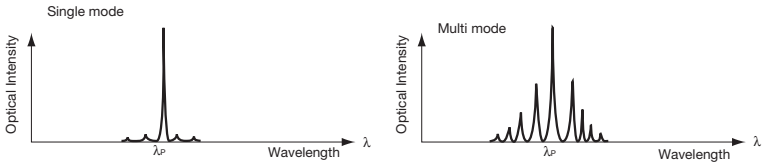
■Fig.5 光轴倾角



■Fig.6 发光点位置



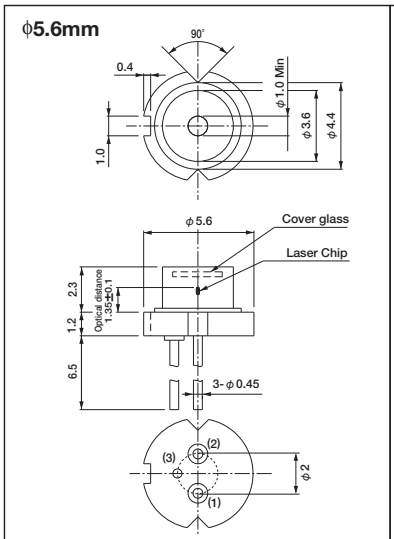
■Fig.7 振荡光谱特性



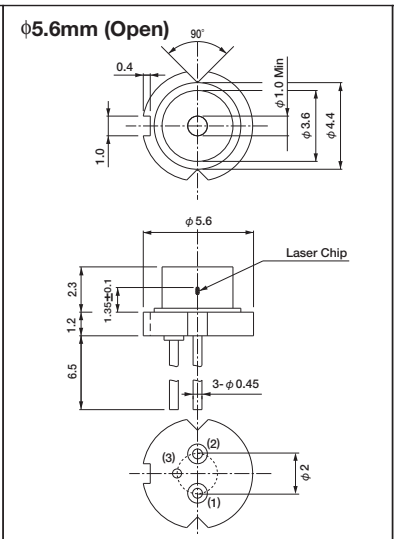
封装规格

●外形尺寸图 (单位:mm)

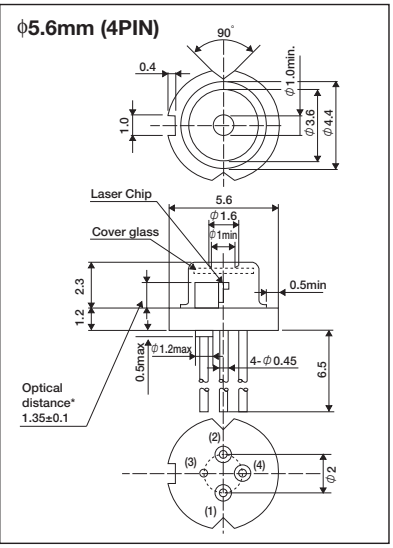
ϕ5.6mm



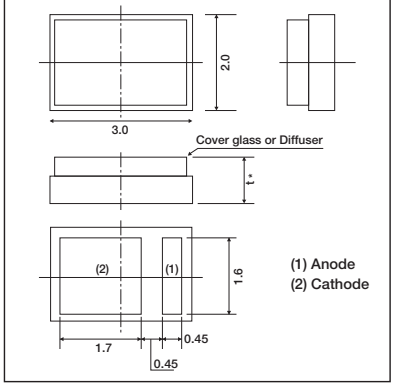
ϕ5.6mm (Open)



ϕ5.6mm (4PIN)



Infrared VCSEL
RLD94SAQ6/RLD94SAQ8



*根据品名有所不同，使用前请务必确认规格书。