
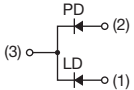

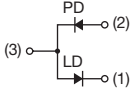










## 激光二极管

红光激光二极管	P.271	红外激光二极管	P.272
大功率红外激光二极管	P.273	红外表面发光激光二极管	P.273
品名构成说明、记号和定义	P.274	封装规格	P.275

## 激光二极管

### 红光激光二极管

Part No.	Wavelength $\lambda_P$ (nm)	Absolute Maximum Ratings ( $T_C=25^\circ\text{C}$ )			Electrical and Optical Characteristics ( $T_C=25^\circ\text{C}$ )								$P_o$ (mW)	Package	Equivalent Circuit
		$P_o$ (mW)	$V_R$ (V)	$T_{opr}$ Max ( $^\circ\text{C}$ )	$I_{TH}$ (mA)	$I_{op}$ (mA)	$\eta$ (W/A)	$V_{op}$ (V)	$I_m$ (mA)	$\theta_{L}$ (deg)	$\theta_{//}$ (deg)				
RLD65MZT7	655	7	2	70	20	30	0.70	2.3	0.24	27.0	8.0	5			
RLD63NPC5 (Pure red)	635	6	2	40	24	33	0.55	2.2	0.18	32.0	8.0	5			
RLD63NPC6 (Pure red)	638	12	2	50	28	43	0.70	2.3	0.15	32.0	8.0	10			
RLD63NPC7 (Pure red)	638	17	2	50	32	57	0.60	2.2	0.16	30.0	8.0	15			
RLD63NPC8 (Pure red)	638	24	2	50	32	65	0.60	2.25	0.20	30.0	8.0	20			
RLD65NZX1 (Higher temp.)	663	10	2	80	15	24	0.85	2.3	0.30	27.0	9.0	7			
RLD65NZX2 (Higher ESD)	658	7	2	70	25	33	0.60	2.3	0.20	28.0	8.5	5			
RLD63PZCA (Pure red)	638	7	2	50	28	33	0.80	2.2	0.08	32.0	8.0	5			
RLD65PZX2 (Higher ESD)	658	7	2	70	25	33	0.60	2.3	0.20	28.0	8.5	5			
RLD65PZX3 (Higher ESD)	658	12	2	70	25	42	0.60	2.3	0.30	28.0	8.5	10			


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。

**DANGER**



VISIBLE LASER  
RADIATION-AVOID  
DIRECT EXPOSURE TO BEAM

MAXIMUM OUTPUT 500 mW  
WAVELENGTH 400 to 700nm  
CLASS IIb LASER PRODUCT


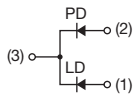













VISIBLE SEMICONDUCTOR LASER  
AVOID EXPOSURE-visible  
Laser radiation is emitted  
from this aperture

ROHM Laser Diode


This product complies with 21  
CFR Part 1040.10 and 1040.11

ROHM Co.,LTD.  
21, Sain Mitsuishi-cho, Ukyo-ku Kyoto  
615,8585, Japan

# 激光二极管

红外激光二极管														
Part No.	Wavelength $\lambda_p$ (nm)	Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )			Electrical and Optical Characteristics ( $T_c=25^\circ\text{C}$ )							$P_o$ (mW)	Package	Equivalent Circuit
		$P_o$ (mW)	$V_R$ (V)	$T_{opr}$ Max ( $^\circ\text{C}$ )	$I_{TH}$ (mA)	$I_{op}$ (mA)	$\eta$ (W/A)	$V_{op}$ (V)	$I_m$ (mA)	$\theta_{\perp}$ (deg)	$\theta_{//}$ (deg)			
RLD78MZA6	790	4.5	2	70	25	35	0.35	1.9	0.15	37.0	11.0	3		
RLD78MZM7	792	20	2	60	11	33	0.65	1.8	0.50	24.0	8.5	15		
RLD78NZM5	793	10	2	60	10	20	0.55	1.8	1.15	28.0	9.0	6		
RLD78NZM7	792	20	2	60	11	33	0.65	1.8	0.90	24.0	8.5	15		
RLD82NZJ1	822	220	2	60	50	255	0.95	2.4	0.30	17.0	9.5	200		
RLD84NZJ2	842	220	2	60	40	250	0.95	2.4	0.40	19.0	9.5	200		
RLD85NZJ4	852	220	2	60	40	250	0.95	2.4	0.40	19.0	9.5	200		
RLD94NZJ7	942	220	2	60	40	300	0.75	2.4	1.00	17.0	9.5	200		
RLD78PZM7	792	20	2	60	11	33	0.65	1.8	0.65	24.0	8.5	15		
RLD82PZJ1	822	220	2	60	50	255	0.95	2.4	0.30	17.0	9.5	200		
RLD84PZJ2	842	220	2	60	40	250	0.95	2.4	0.40	19.0	9.5	200		
RLD85PZJ4	852	220	2	60	40	250	0.95	2.4	0.40	19.0	9.5	200		
RLD94PZJ5	942	285	2	65	55	325	0.75	2.2	0.90	30.0	35.0	200		

注：除另行标注外，所有电气及光学特性皆为标准值。



**DANGER**

INVISIBLE LASER  
RADIATION-AVOID  
DIRECT EXPOSURE TO BEAM

MAXIMUM OUTPUT 500 mW  
WAVELENGTH 760 to 990nm  
CLASS IIIb LASER PRODUCT


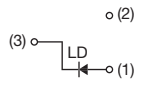







INVISIBLE SEMICONDUCTOR LASER

AVOID EXPOSURE-invisible Laser radiation is emitted from this aperture

**ROHM Laser Diode**


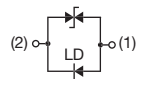

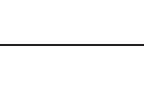

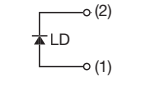


This product complies with 21 CFR Part 1040.10 and 1040.11

ROHM Co.,LTD.  
21-5ain Mizosaki-cho,Ukyo-ku Kyoto 615-8585, Japan

大功率红外激光二极管														
Part No.	Wavelength $\lambda_p$ (nm)	Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )			Electrical and Optical Characteristics ( $T_c=25^\circ\text{C}$ )							Measurement pulse condition	Package	Equivalent Circuit
		$P_o$ (W)	$I_F$ (A)	$V_{pr}$ Max (V)	$P_o$ (W)	$I_{TH}$ (A)	$I_{op}$ (A)	$V_{op}$ (V)	$\theta_{\perp}$ (deg)	$\theta_{//}$ (deg)	Emission area ( $\mu\text{m}\times\mu\text{m}$ )			
☆RLD90QZWA	905	17	6	85	15	0.3	5	13	20	14	35×10	Pulse width 50ns duty 0.05%		
RLD90QZWJ		25	9		25	0.4	9	15	20	14	50×10			
☆RLD90QZWB		30	11		25	0.4	9	13	25	14	50×10			
RLD90QZW5		25	9		25	0.4	9	14	25	12	70×10			
☆RLD90QZWC		30	11		25	0.4	9	12	25	13	70×10			
RLD90QZWD		40	13		35	0.4	12	11	25	13	100×10			
RLD90QZW3		90	30		75	0.9	27	16	25	10	225×10			
☆RLD90QZW8		145	50		120	1	40	16	25	10	270×10			

注：除另行标注外，所有电气及光学特性皆为标准值。

☆：开发中

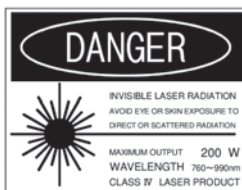
红外表面发光激光二极管*													
Part No.	Wavelength $\lambda_p$ (nm)	Electrical and Optical Characteristics ( $T_c=25^\circ\text{C}$ )							Emission area (mm×mm)	Measurement pulse condition	Package	Equivalent Circuit	
		$P_o$ (mW)	$I_F$ (mA)	$V_F$ (V)	$I_{TH}$ (mA)	PCE (%)	$\theta$ [FWHM] (deg)	$\eta$ (W/A)					
☆RLD94SEQF	940	6	9	1.9	2	33	13	0.85	—	Pulse width 800 $\mu\text{s}$ 1shot			
☆RLD94SEQP	940	7	9	1.9	2	40	20	1	—	Pulse width 800 $\mu\text{s}$ 1shot			
☆RLD94SAQ6	940	200	300	2	70	33	13	0.85	0.41×0.23	Pulse width 800 $\mu\text{s}$ 1shot	 $t^*=0.77$		
☆RLD94SAQ8	940	2,000	3,000	2	750	40	-00x: 20 -10x: 60×45 -20x: 72×55 -30x: 90×69 -40x: 110×85	1	1.10×0.82	Pulse width 400 $\mu\text{s}$ 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

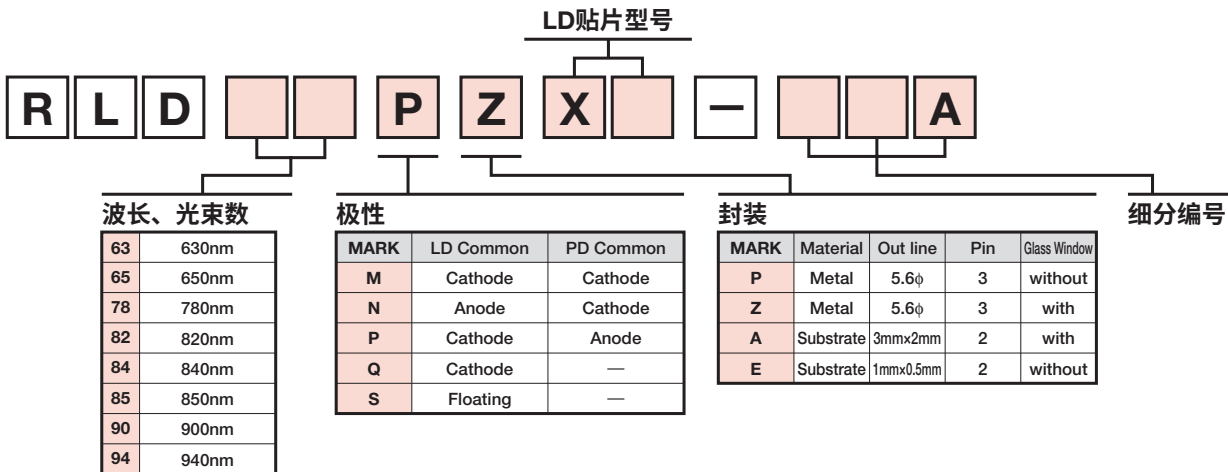
本产品旨在用于普通的电子设备或装置。  
激光二极管发出的光对人体有害，因此不要直视  
或用镜片、硬化纸板等观看发光部。



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，请事先向ROHM销售代表咨询。

## 激光二极管

### ●品名构成说明



### ●记号和定义

#### ■绝对最大额定值

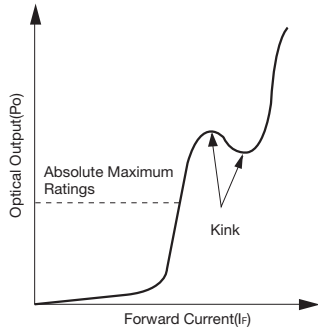
在任何外部条件下，就是瞬间也不得超过的数值即绝对最大额定值。  
以外壳温度 $T_c = 25^\circ\text{C}$ 时的数值作出规定。

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	$T_{opr}$	Allowed ambient temperature range when the device is in operation. Defined to be the case temperature of the device.
Storage Temperature	$T_{stg}$	Allowed temperature range when the device is being stored.

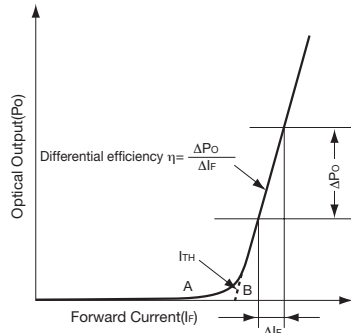
#### ■电气及光学特性

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	$\eta$	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	$\theta_{//}$ $\theta_{\perp}$	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 $\theta_{//}$ and $\theta_{\perp}$ . (Fig.4)
Parallel Deviation Angle Perpendicular Deviation Angle	$\Delta\phi_{//}$ $\Delta\phi_{\perp}$	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	$\Delta X, \Delta Y, \Delta Z$	This indicates the amount of deviation of the emission point. $\Delta X$ and $\Delta Y$ indicate deviation from the center of the package, and $\Delta Z$ indicates deviation from the reference plane. (Fig.6)
Peak Emission Wavelength	$\lambda$	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 defined as the wavelength with the highest intensity.
Power Conversion Efficiency	PCE	This indicates the ratio of optical output to input electric power.

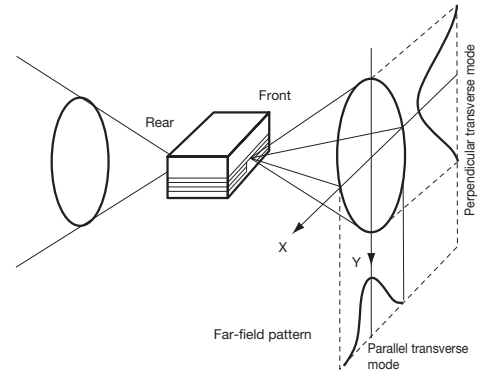
■Fig.1 光输出-正向电流特性



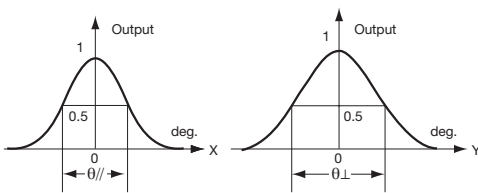
■Fig.2 光输出-正向电流特性



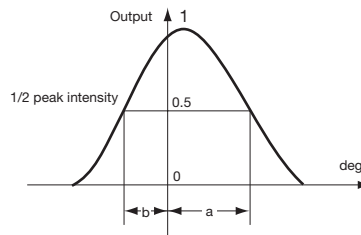
■Fig.3 辐射特性



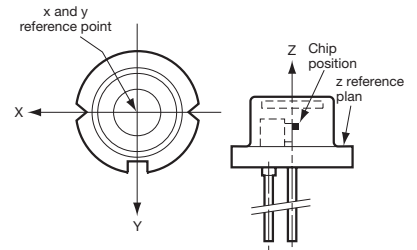
■Fig.4 辐射特性



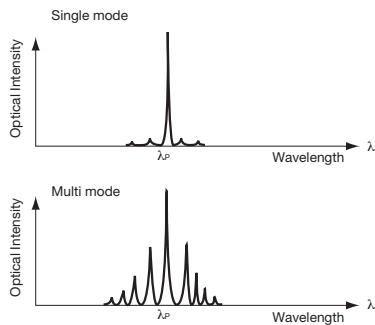
■Fig.5 光轴倾角



■Fig.6 发光点位置

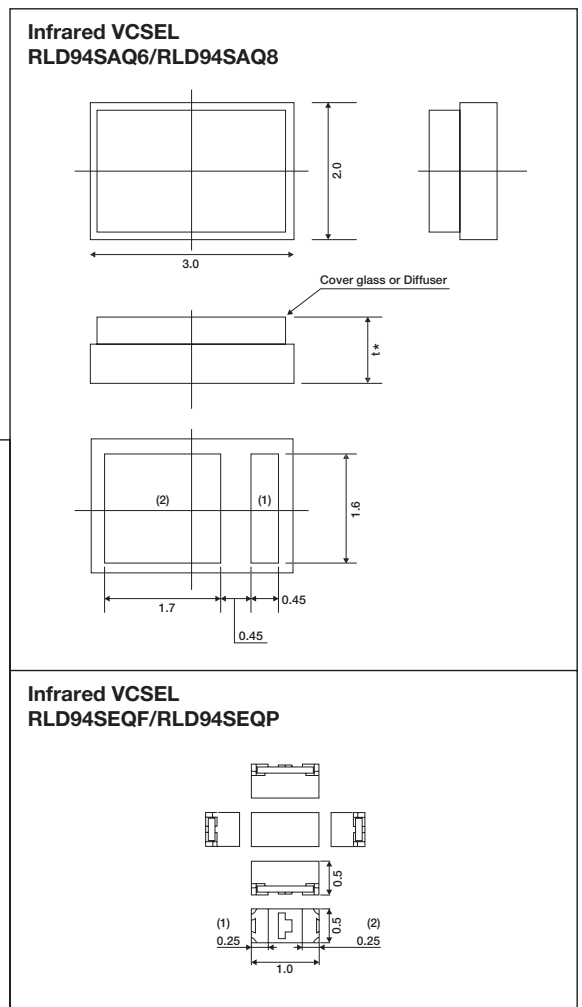
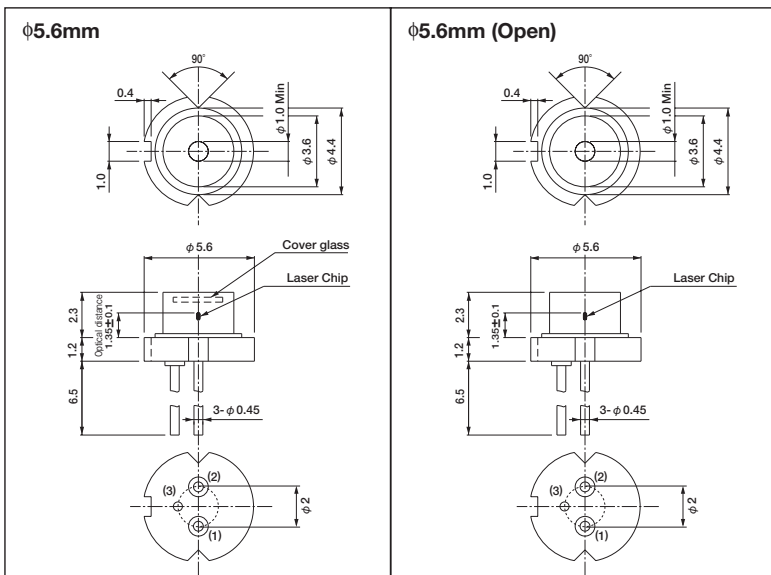


■Fig.7 振荡光谱特性



## 封装规格

●外形尺寸图 (单位:mm)



\*根据品名有所不同, 使用前请务必确认规格书。