



Lead (Pb) Free Product – RoHS Compliant

LED810-xxAU Infrared LED Lamp

This series of LED810-xxAU is an AlGaAs LED mounted on a lead frame and encapsulated in various types of epoxy lens, which offer different design settings.

On forward bias, it emits a high power radiation of typical 22mW with a peak wavelength at 810nm.

• Specifications

1) Chip material	AlGaAs
2) Peak wavelength	810nm
3) Package	Epoxy resin
4) Solder	Lead free



• Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P _D	170	mW	T _a =25°C
Forward Current	I _F	100	mA	T _a =25°C
Pulse Forward Current	I _{FP}	500	mA	T _a =25°C
Reverse Voltage	V _R	5	V	T _a =25°C
Operating Temperature	T _{OPR}	-30 ~ +85	°C	
Storage Temperature	T _{STG}	-40 ~ +100	°C	
Soldering Temperature	T _{SOL}	265	°C	

• Electro-Optical Characteristics [T_a=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V _F	I _F =50mA		1.7	1.9	V
Reverse Current	I _R	V _R =5V			10	uA
Total Radiated Power	P _O	I _F =50mA	17.0	22.0		mW
Peak Wavelength	λ _P	I _F =50mA		810		nm
Half Width	Δλ	I _F =50mA		35		nm
Rise Time	t _r	I _F =50mA		50		ns
Fall Time	t _f	I _F =50mA		25		ns

**• Characteristics of Radiant Intensity [Ta=25°C]**

Type	Viewing Half Angle	Radiant Intensity IF= 50mA [mW/sr]			Outer Dimension	Dimension Figure
		Minimum	Typical	Maximum		
LED810-01AU	± 10°		100		Ø 5	1
LED810-02AU	± 7°		100		Ø 5	2
LED810-03AU	± 10°		100		Ø 5	3
LED810-04AU	± 20°		48		Ø 5	4
LED810-05AU	± 40°		10		Ø 5	5
LED810-06AU	± 7°		170		Ø 5	6
LED810-09AU	± 25° (Long)		80		Ø 5	7
	± 15° (Short)				Oval	
LED810-46AU					Ø 5	8
LED810-41AU	± 16°		60		Ø 4	9
LED810-42AU	± 23°		35		Ø 4	10
LED810-31AU					Ø 3	11
LED810-33AU	± 18°		40		Ø 3	12
LED810-34AU					Ø 3	13
LED810-36AU	± 33°		25		Ø 3	14

► Total Radiated Power is measured by Photodyne # 500.

► Brightness is measured by Tektronix J-16.



- Outer Dimension of LED Lamp

Figure-1 Ø 5Mold (Type01)

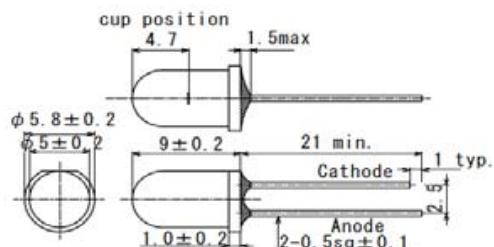


Figure-2 Ø 5Mold (Type02)

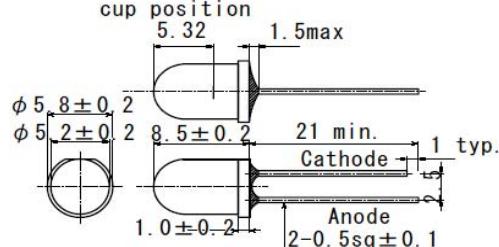


Figure-3 Ø 5Mold (Type03)

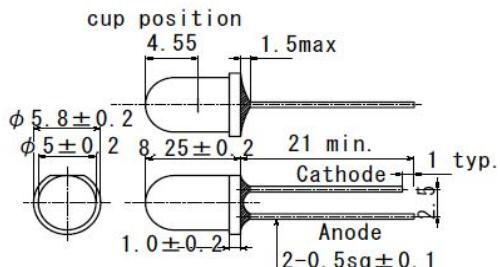


Figure-4 Ø 5Mold (Type04)

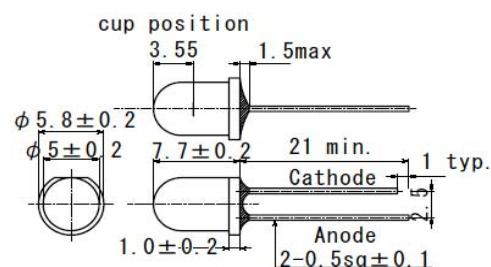


Figure-5 Ø 5Mold (Type05)

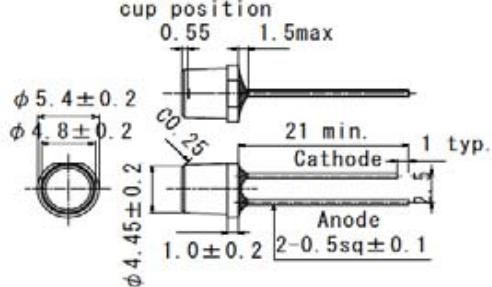


Figure-6 Ø 5Mold (Type06)

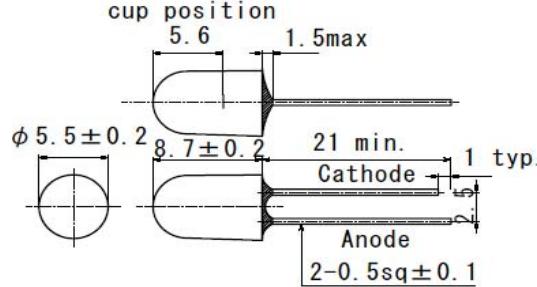


Figure-7 Ø 5Mold (Type09)

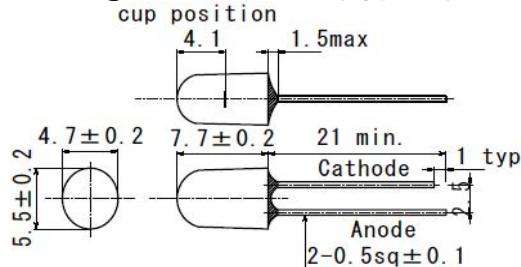


Figure-8 Ø 5Mold (Type46)

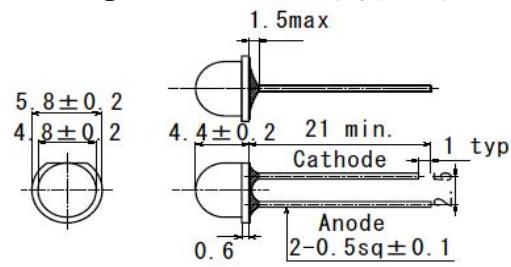


Figure-9 Ø 4Mold (Type41)

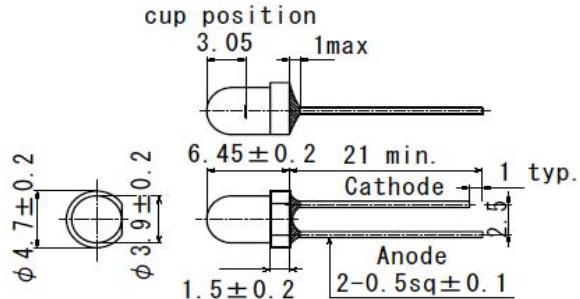


Figure-10 Ø 4Mold (Type42)

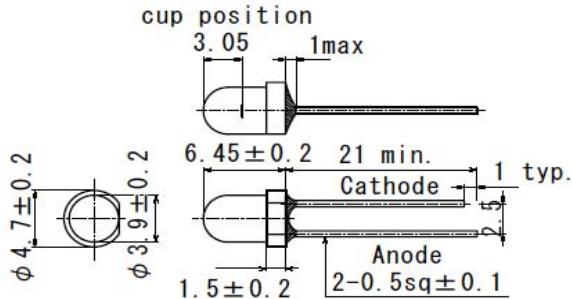




Figure-11 Ø 3Mold (Type31)

cup position

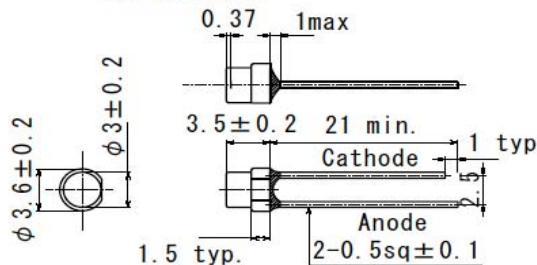


Figure-12 Ø 3Mold (Type33)

cup position

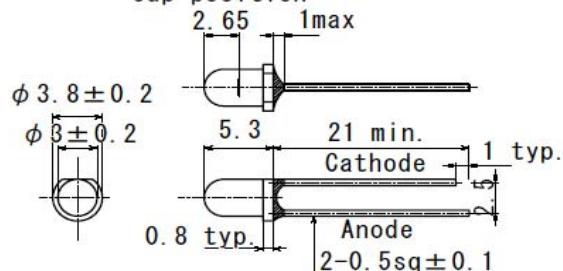


Figure-13 Ø 3Mold (Type34)

cup position

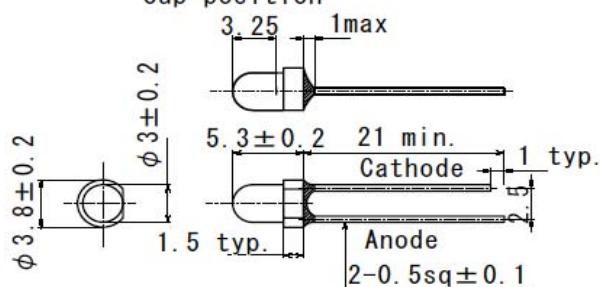
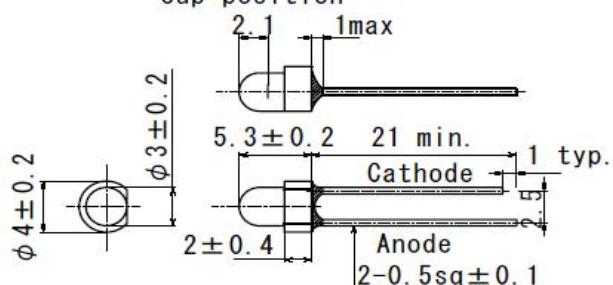


Figure-14 Ø 3Mold (Type36)

cup position





- The Viewing half angle

Figure-1 Ø 5Mold (Type01)

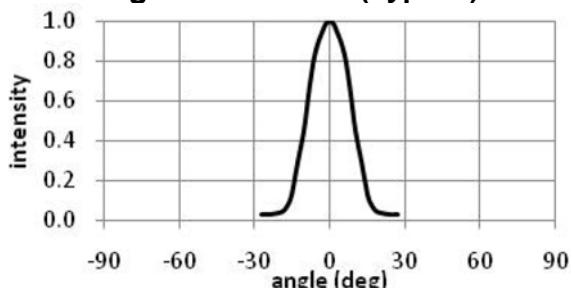


Figure-2 Ø 5Mold (Type02)

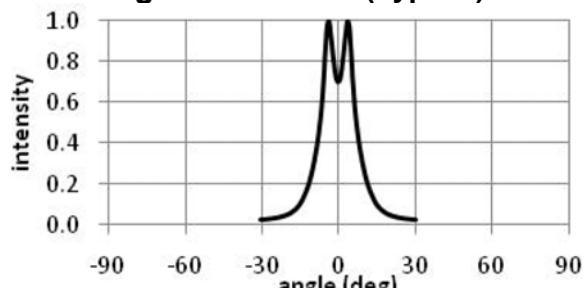


Figure-3 Ø 5Mold (Type03)

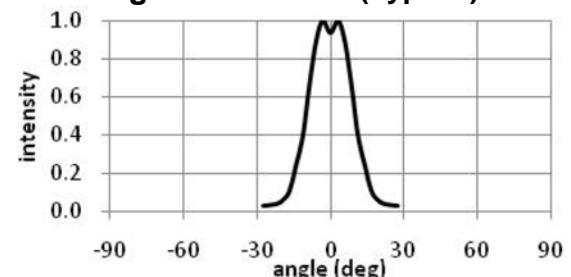


Figure-4 Ø 5Mold (Type04)

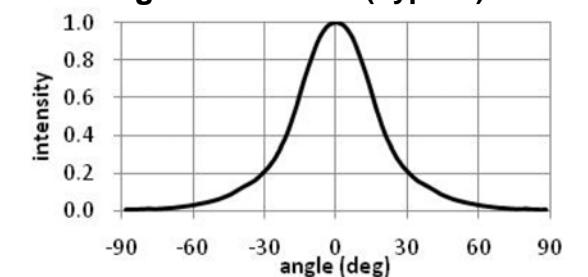


Figure-5 Ø 5Mold (Type05)

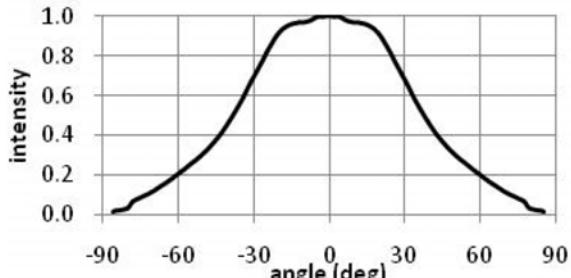


Figure-6 Ø 5Mold (Type06)

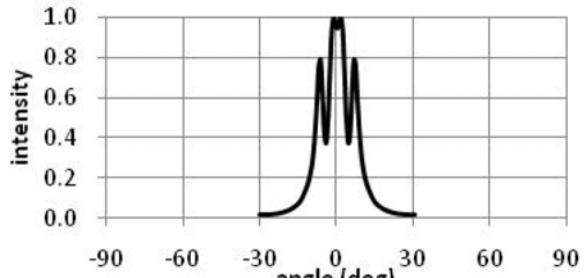


Figure-7 Ø 5Mold (Type09)

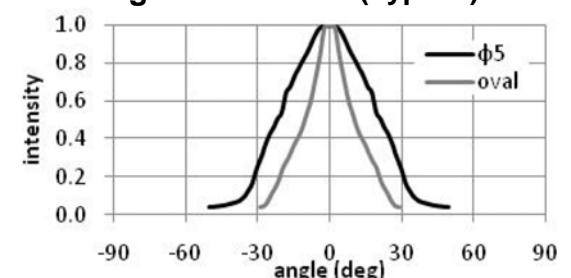
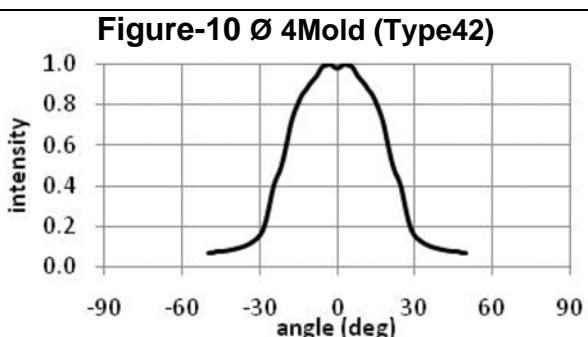
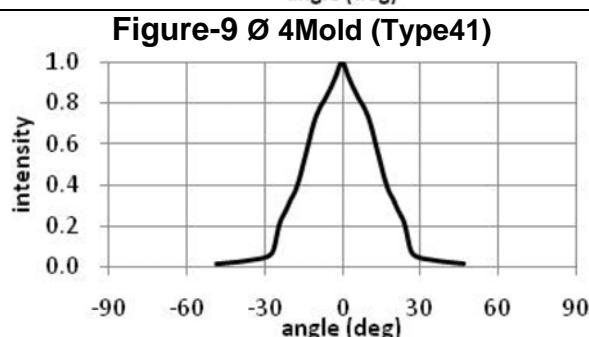


Figure-8 Ø 5Mold (Type46)





ROITHNER LASERTECHNIK

Wiedner Hauptstraße 76, A-1040 Vienna, Austria

Tel.: ++43 1 586 52 43-0, Fax -44, office@roithner-laser.com



Figure-11 Ø 3Mold (Type31)

Figure-12 Ø 3Mold (Type33)

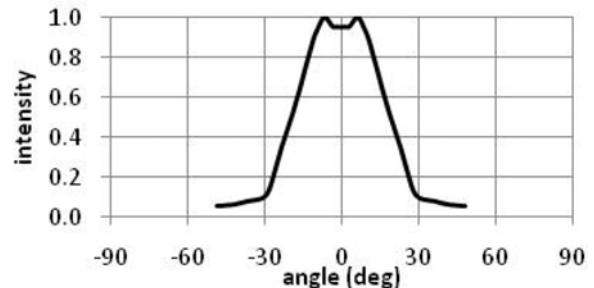
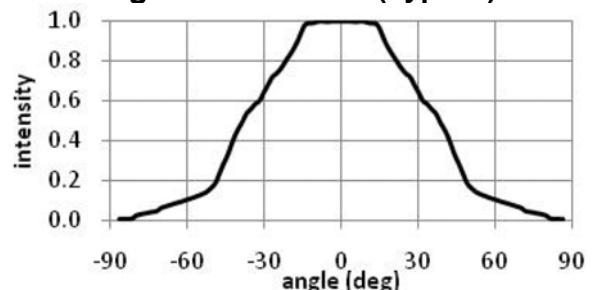


Figure-13 Ø 3Mold (Type34)

Figure-14 Ø 3Mold (Type36)

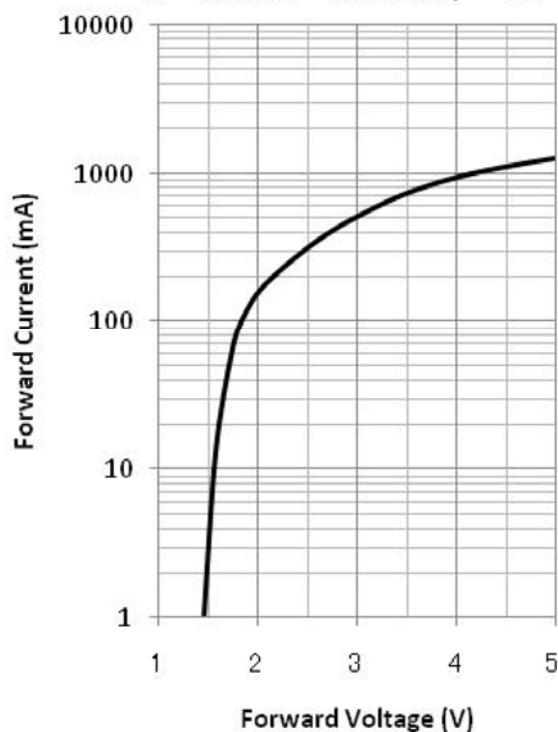




• LED810 - serie

Forward current-Forward Voltage

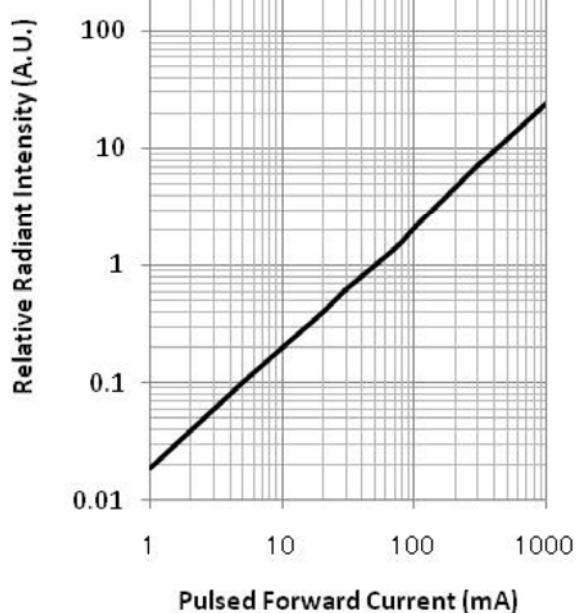
T_a = 25°C, t_w = 10us, Duty = 1%



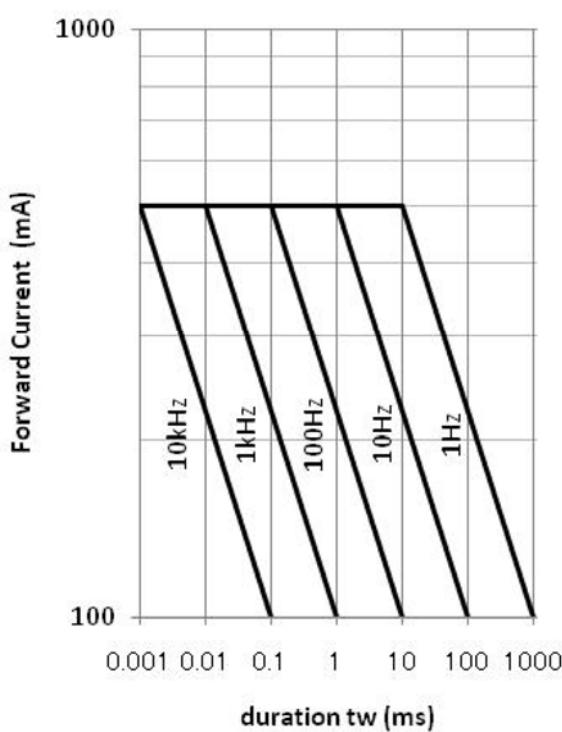
Relative Radiant Intensity - Pulsed Forward Current

(T_a = 25°C, t_w = 10us, Duty = 1%)

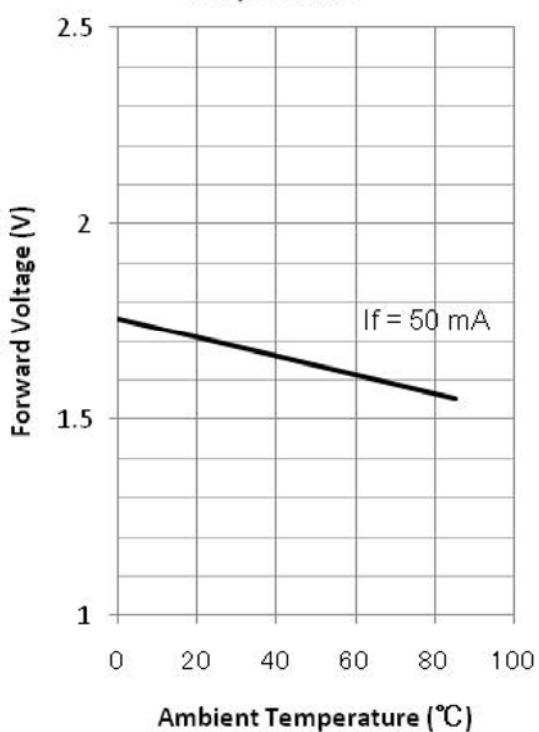
50mA standard



Forward Current - Pulse Duration

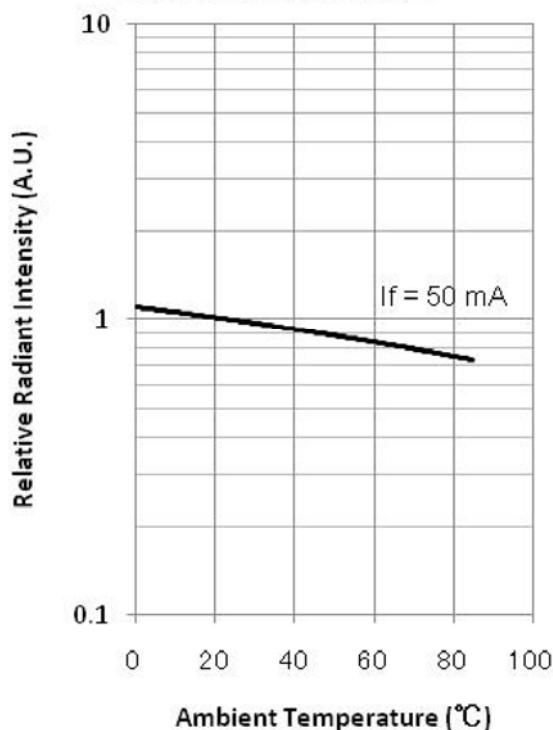


Forward Voltage - Ambient Temperature

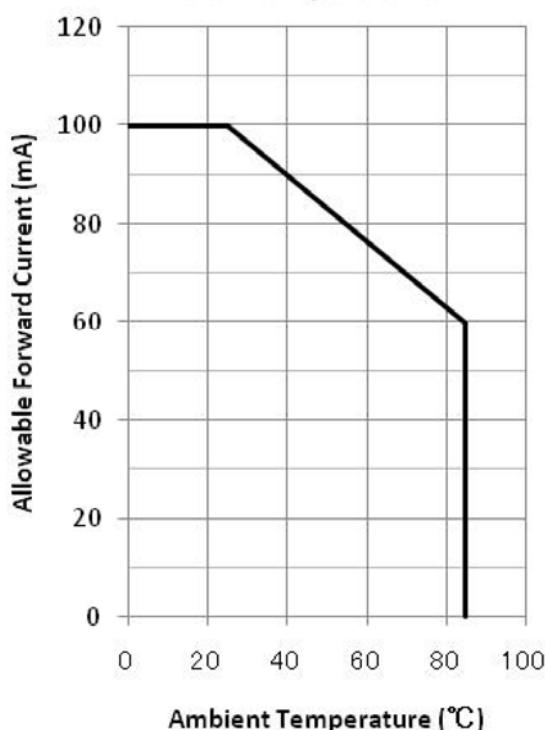




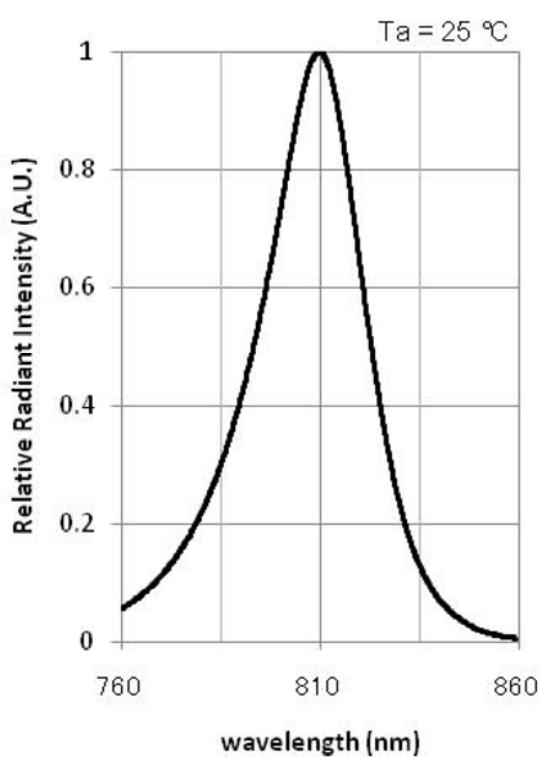
Relative Radiant Intensity -
Ambient Temperature



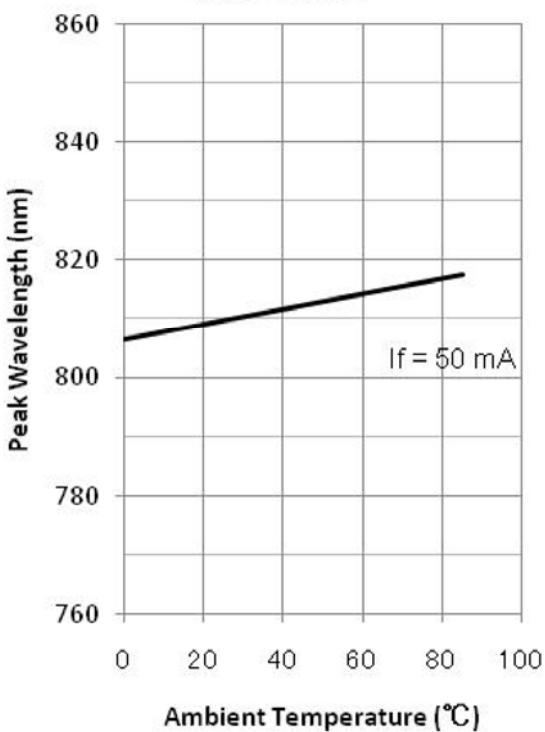
Allowable Forward Current -
Ambient Temperature



Peak Wavelength



Peak Wavelength - Ambient
Temperature





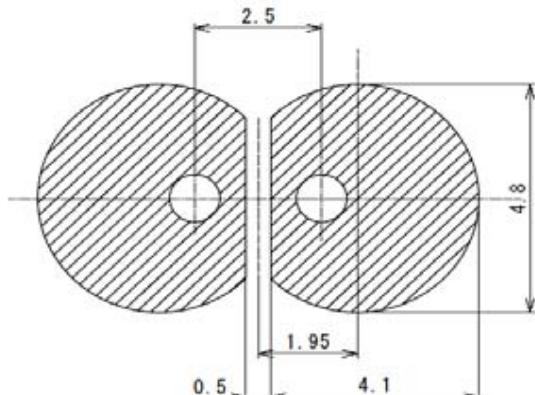
ROITHNER LASERTECHNIK

Wiedner Hauptstraße 76, A-1040 Vienna, Austria

Tel.: ++43 1 586 52 43-0, Fax -44, office@roithner-laser.com



Recommended Land Layout (mm)



Soldering Conditions

