epitex Opto-Device & Custom LED

High Power Infrared LED (870 nm) Lead(Pb)Free Product-RoHS Compliant

L870-33UP

Infrared LED Lamp

L870-33UP is an AlGaAs LED mounted on a lead frame with a clear epoxy lens.
On forward bias it emits a spectral band of radiation, which peaks at 870nm.

Features
- High Power Infrared LED
- Peak wavelength typ. 870 nm
- Very High radiant Intensity
- Emission angle ±15°

Applications
- Infrared Illumination for CCTV
- IR Data Transmission
- Vein Image at Biometrics
- Industrial Sensors

Safety Advices
Depending on the application, these devices which emit infrared light may exceed over Accessible Emission Limit and cause the damage to the human eye.
Keep the safety precautions given in IEC 60825-1 and IEC 625471 before using.

Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	PD	160	mW	Ta=25°C
Forward Current	IF	100	mA	Ta=25°C
Pulse Forward Current	IFP	1000	mA	Ta=25°C
Reverse Voltage	VR	5	V	Ta=25°C
Operating Temperature	TOPR	-40 ~ +100	°C	
Storage Temperature	TSTG	-40 ~ +100	°C	
Soldering Temperature	TSOL	265	°C	

‡Pulse Forward Current condition: Duty=1% and Pulse Width=10us.
‡Soldering condition: Soldering condition must be completed within 3 seconds at 265°C

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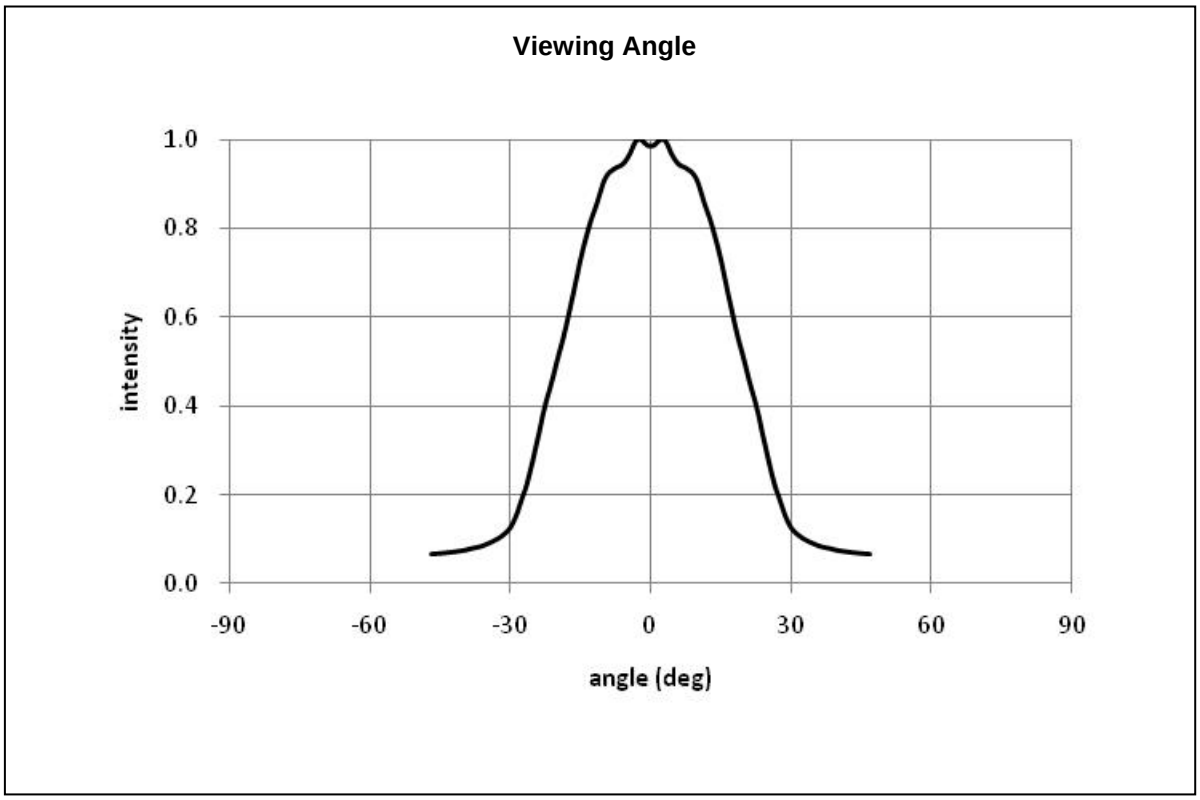
Electro-Optical Characteristics (Ta=25°C)

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	VF	IF=50mA		1.5	1.7	V
Reverse Current	IR	VR=5V			10	uA
Total Radiated Power	PO	IF=50mA	20	26		mW
Radiant Intensity	IE	IF=50mA		50		mW/sr
Peak Wavelength	λP	IF=50mA		870		nm
Half Width	Δλ	IF=50mA		40		nm
Viewing Half Angle	$\theta_{1/2}$	IF=50mA		±15		deg.
Rise Time	tr	IF=50mA		15		ns
Fall Time	tr	IF=50mA		10		ns

‡Total Radiated Power is measured by Photodyne #500.
‡Radiant Intensity is measured by Tektronix J-6512.



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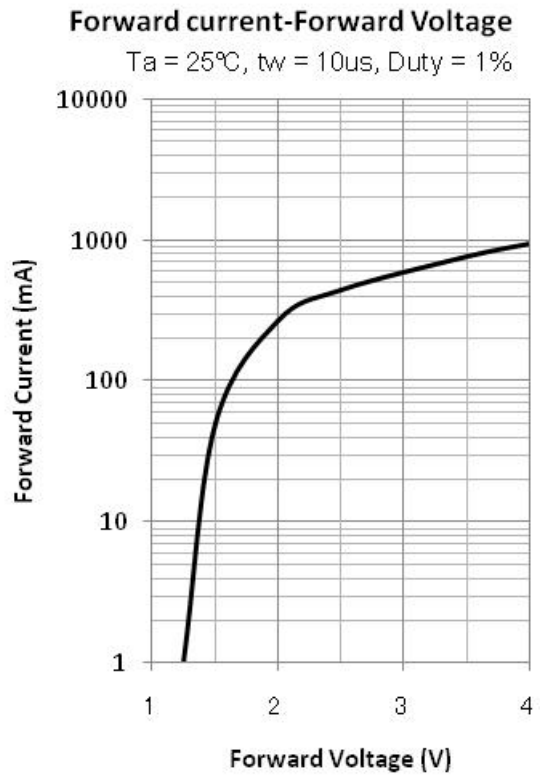

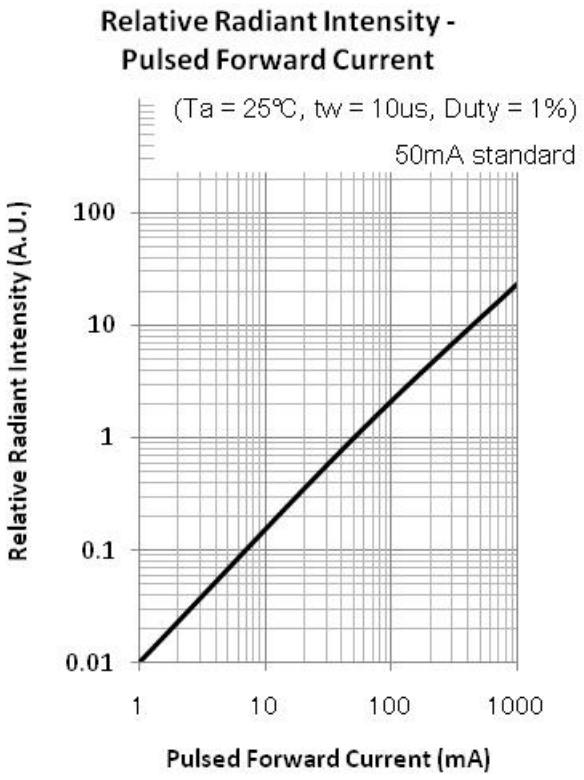

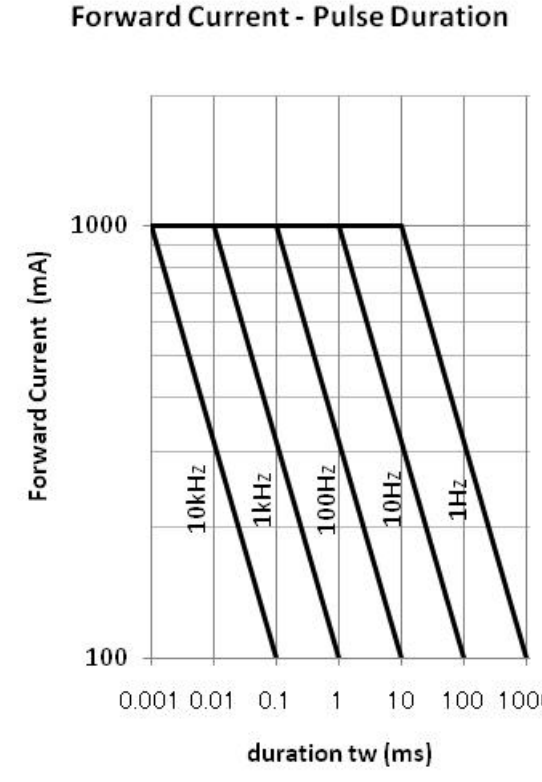

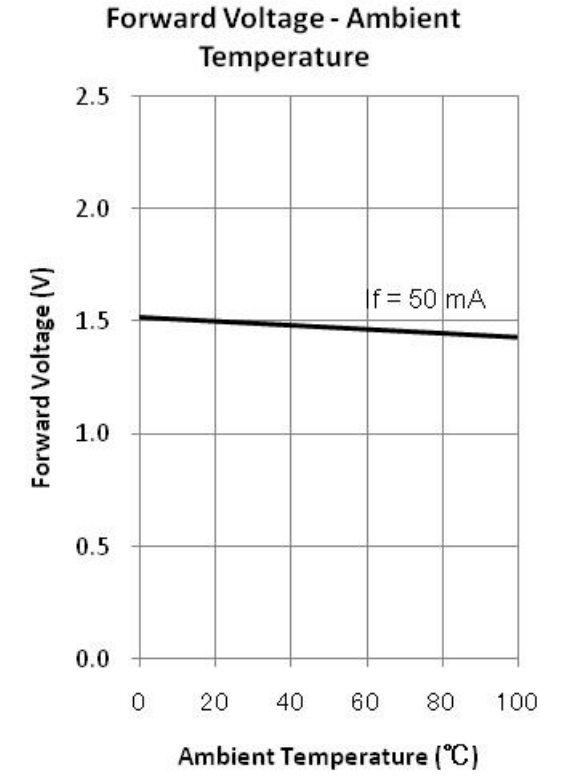

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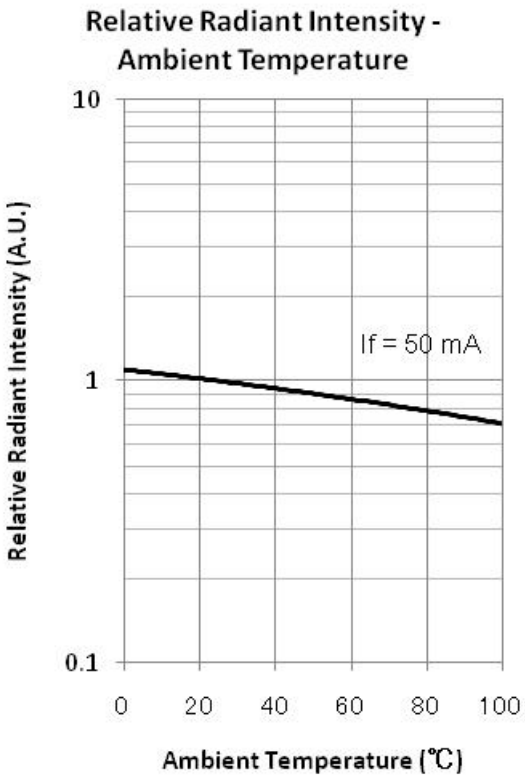

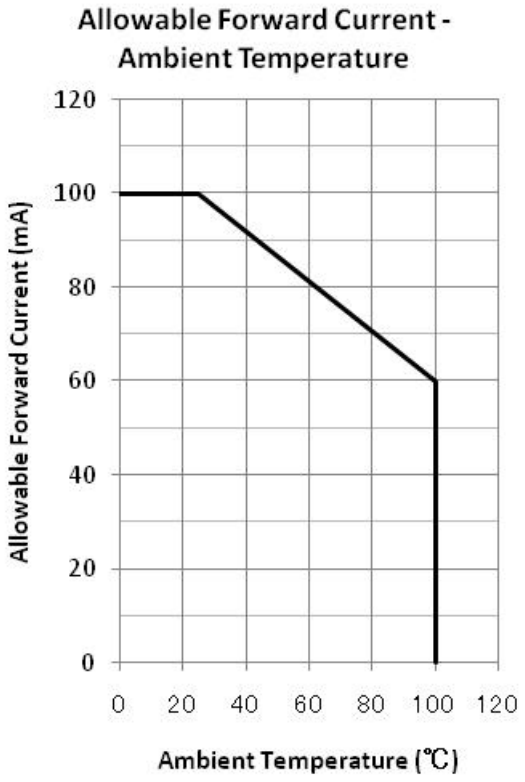

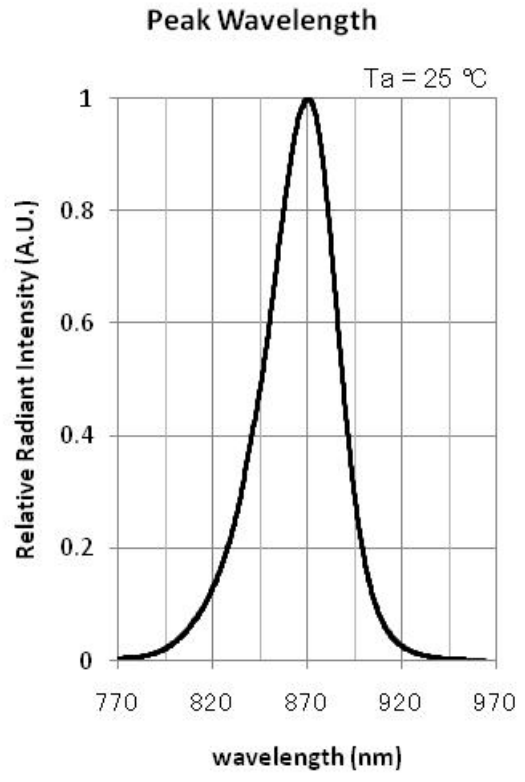

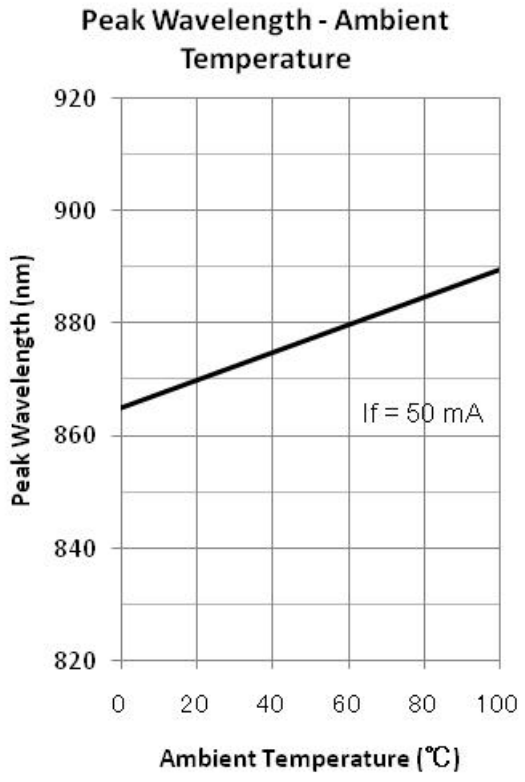

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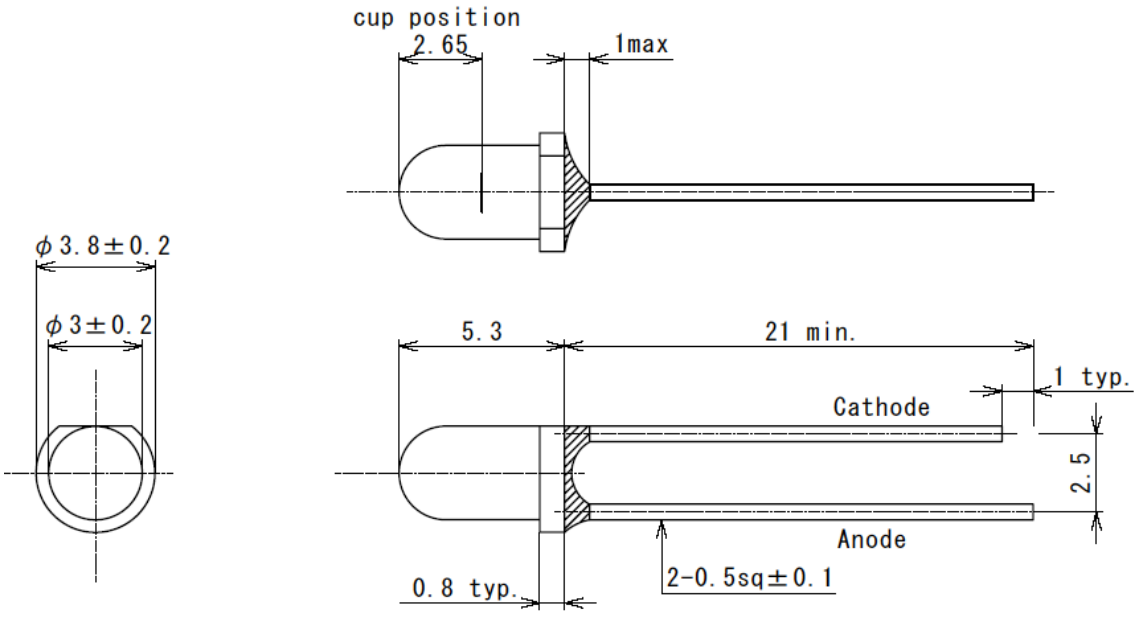
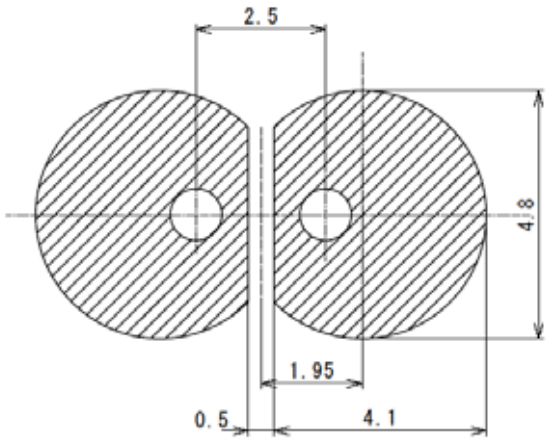
Outer Dimension (Unit: mm)



Recommended Land Layout (unit: mm)



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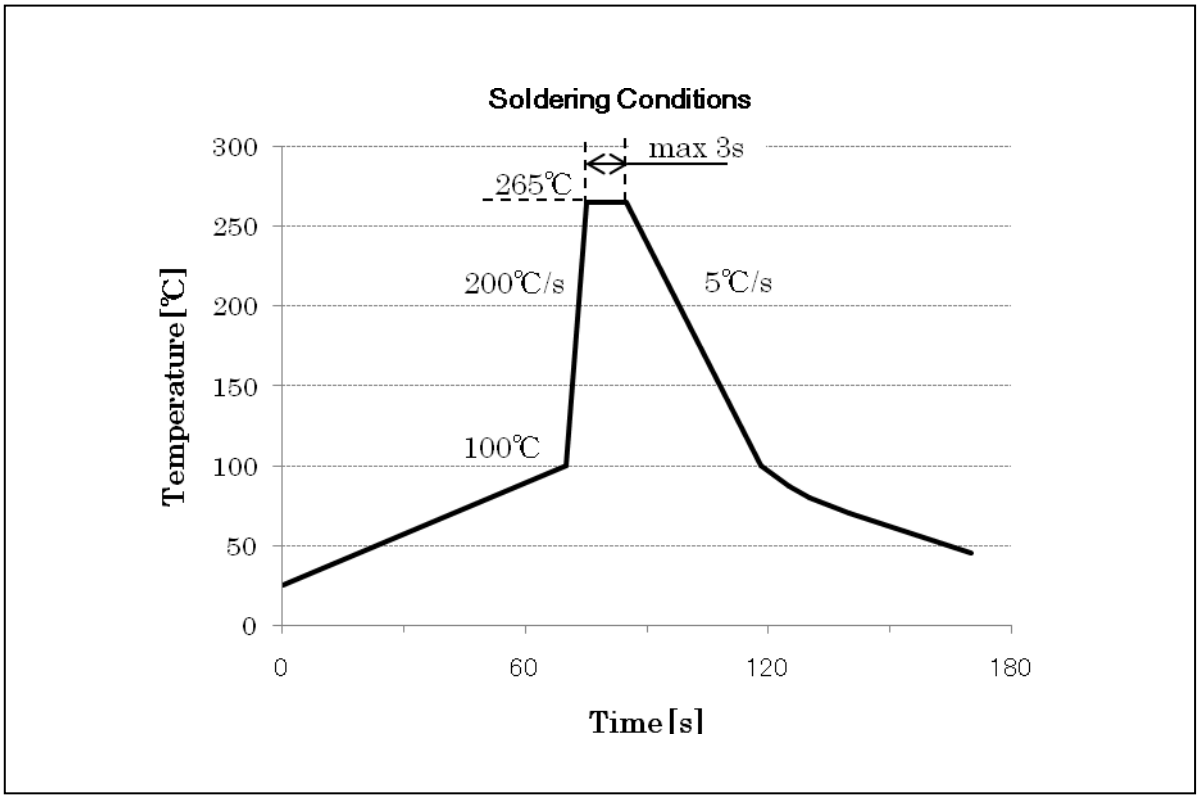
Soldering Conditions
300
250
200
150
100
50
0
Temperature [℃]
max 3s
265℃
200℃/s
5℃/s
100℃
0
60
120
180
Time [s]