

L10922

Surface mount type 2-wavelength LED array

The L10922 is a 2-wavelength LED array containing a red LED chip with a peak emission wavelength at 670 nm and an infrared LED chip with a peak emission wavelength at 870 nm.

Features

- High output
- Compact, surface mount type package (3.5 × 2.6 × 1.8^t mm)
- High reliability
- Low cost
- Compatible with lead-free reflow

Applications

- Optical switches
- Analysis and measurement

Absolute maximum ratings (Ta=25 °C unless otherwise noted)

Parameter	Symbol	Condition	Value		Unit
			Red LED	Infrared LED	
Reverse voltage	V _R		5		V
Forward current	I _F		70	80	mA
Forward current decrease rate	ΔI _F	T _a > 25 °C	0.9	1.1	mA/°C
Pulse forward current	I _{FP}	Pulse width=10 μs, duty ratio=1%	0.6	0.5	A
Pulse forward current decrease rate	ΔI _{FP}	T _a > 25 °C	8	13	mA/°C
Power dissipation	P _{d max}		150		mW
Operating temperature	T _{opr}	No dew condensation*1	-30 to +85		°C
Storage temperature	T _{stg}	No dew condensation*1	-40 to +100		°C
Reflow soldering conditions	-	JEDEC J-STD-020 MSL 5a	Peak temperature: 240 °C, 1 time		-

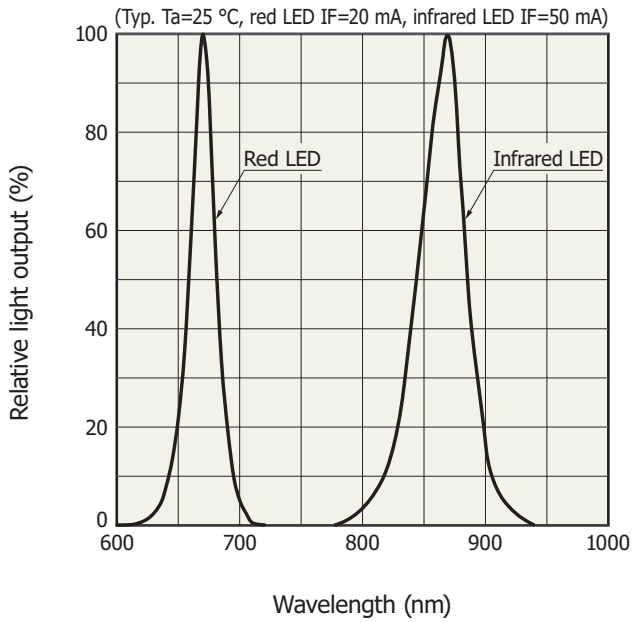
*1: When there is a temperature difference between a product and the surrounding area in high humidity environment, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.

Electrical and optical characteristics (Ta=25 °C)

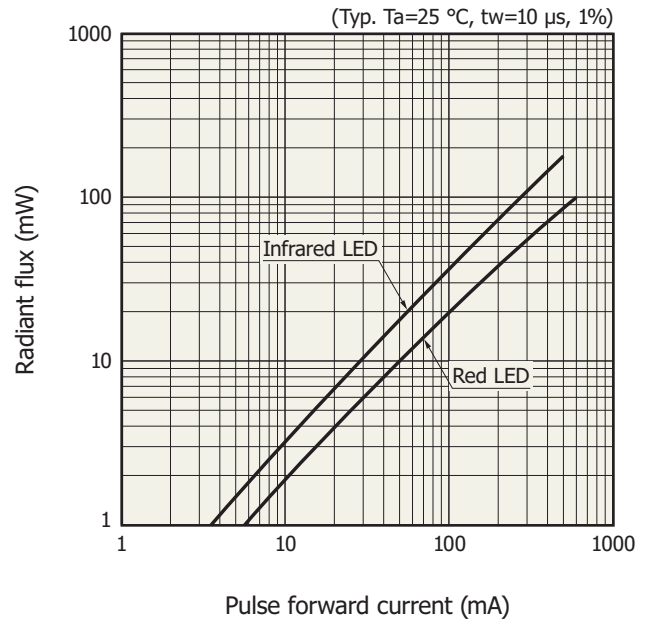
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λ _R	Red LED I _F =20 mA	650	670	700	nm
		Infrared LED I _F =50 mA	840	870	900	
Spectral half width	Δλ	Red LED I _F =20 mA	-	25	50	nm
		Infrared LED I _F =50 mA	-	45	80	
Radiant flux	φ _e	Red LED I _F =20 mA	2.7	4	6.5	mW
		Infrared LED I _F =50 mA	12	18	26	
Forward voltage	V _F	Red LED I _F =20 mA	-	1.8	2.1	V
		Infrared LED I _F =50 mA	-	1.47	1.55	
Reverse current	I _R	Red LED V _R =5 V	-	-	20	μA
		Infrared LED V _R =5 V	-	-	5	
Frequency characteristics*2	f _c	Red LED I _F =50 mA ± 1 mAp-p	2.2	3	-	MHz
		Infrared LED I _F =50 mA ± 1 mAp-p	25	40	-	

*2: Frequency at which the light output drops by 3 dB relative to the output at 100 kHz

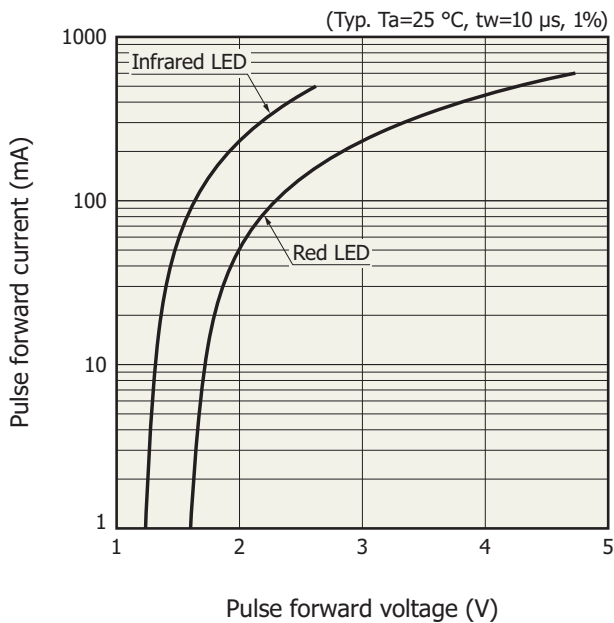
Emission spectrum



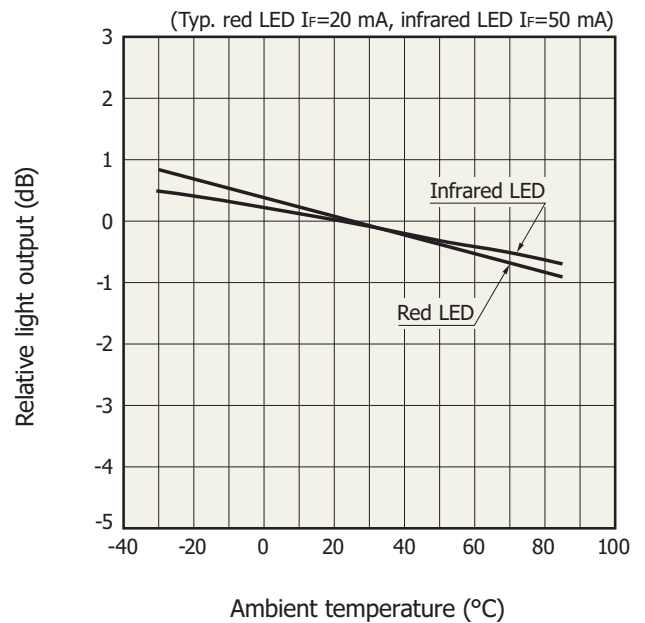
Radiant flux vs. pulse forward current



Pulse forward current vs. pulse forward voltage

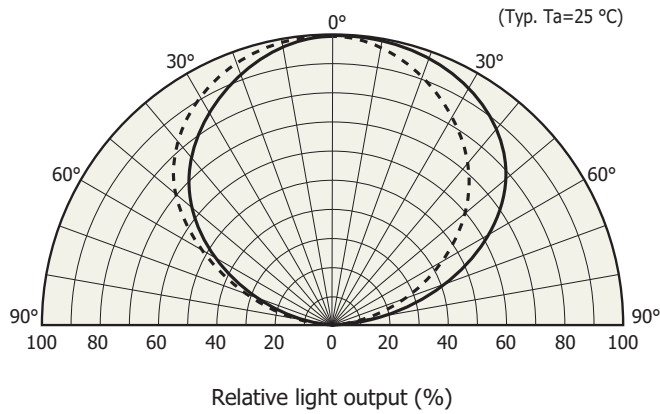


Light output vs. ambient temperature

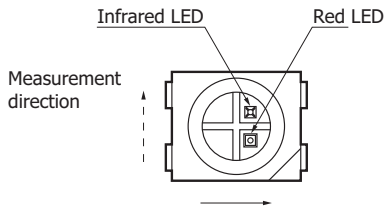
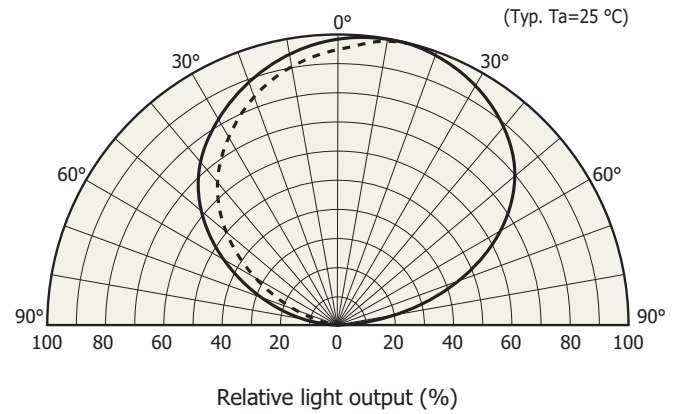


Directivity

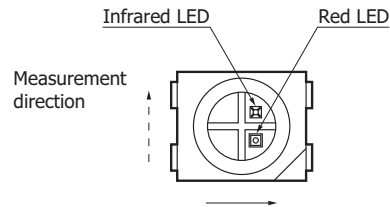
Red LED



Infrared LED



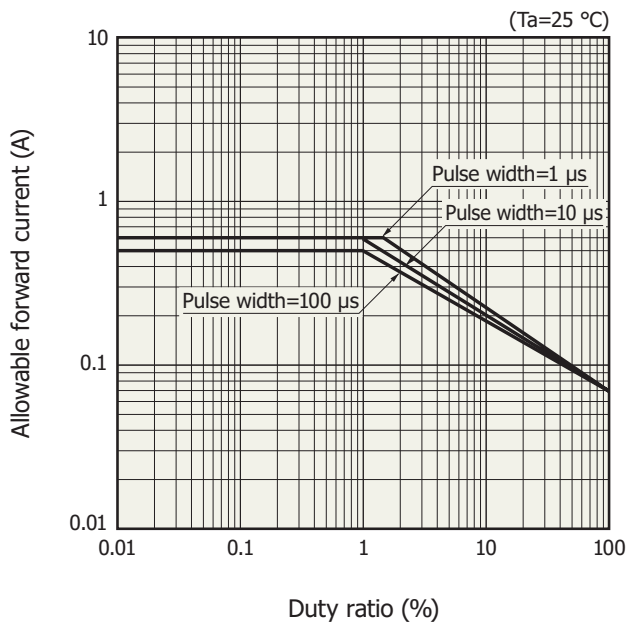
KLEDB0532EA



KLEDB0533EA

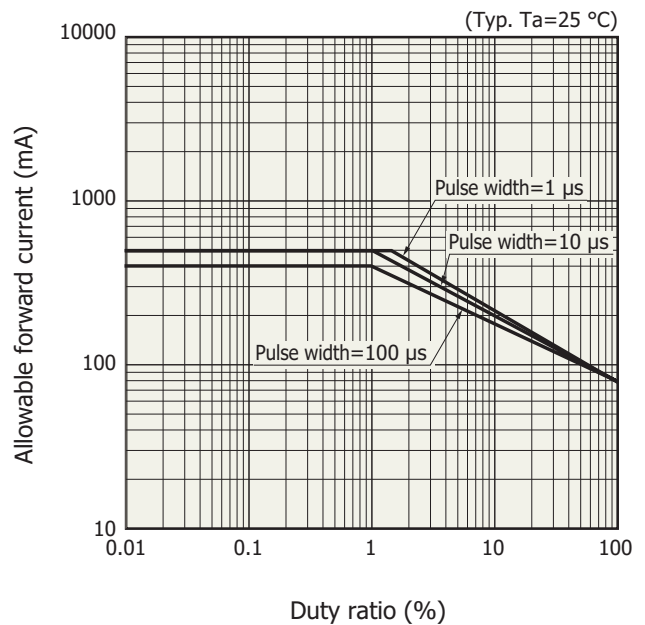
Allowable forward current vs. duty ratio

Red LED



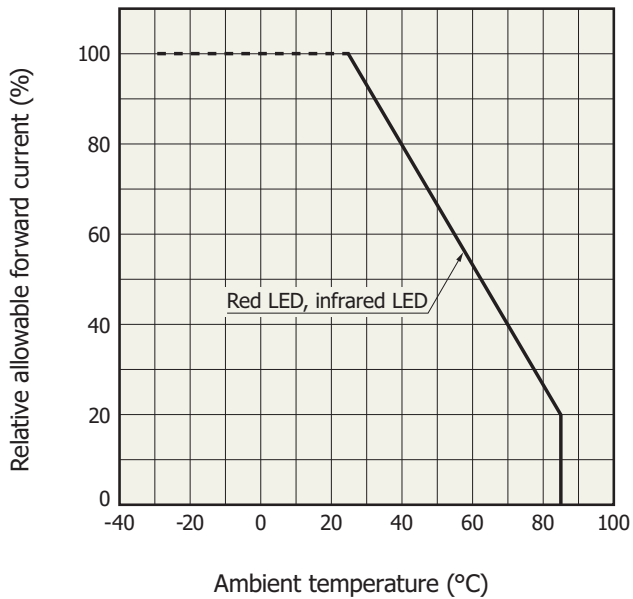
KLEDB0193EB

Infrared LED



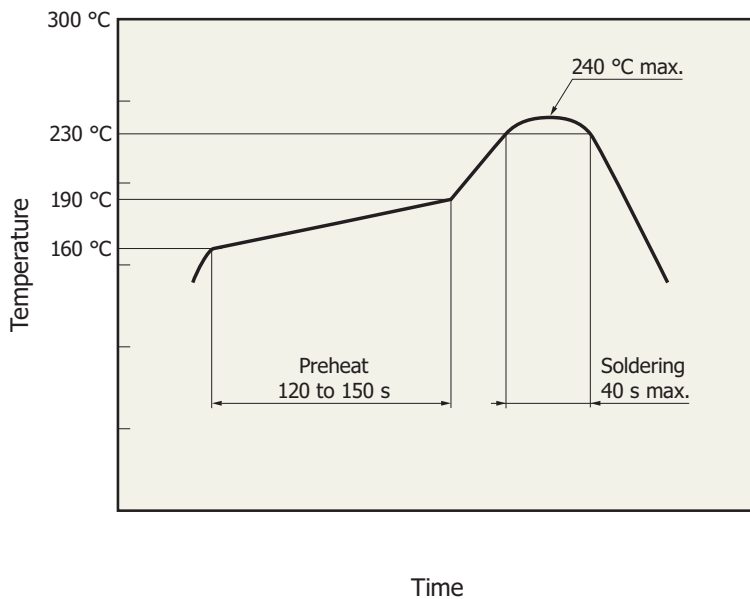
KLEDB0363EA

▣ Allowable forward current vs. ambient temperature



KLEDB0027EC

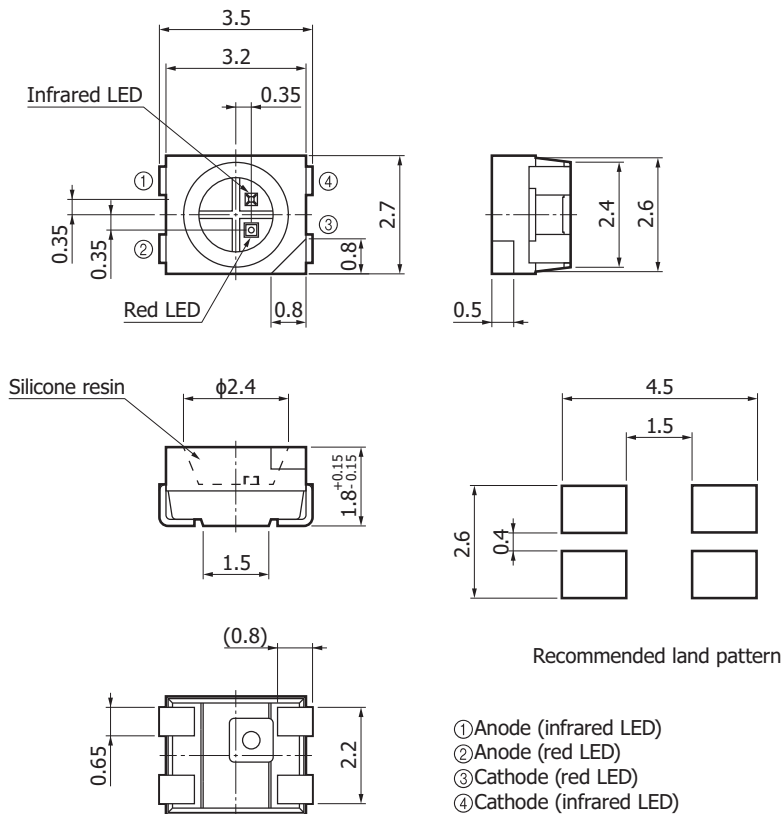
▣ Recommended solder reflow conditions



- After unpacking, store the device in an environment at a temperature range of 5 to 30 °C and a humidity of 60% or less, and perform reflow soldering within 24 hours.
- The effect that the product receives during reflow soldering varies depending on the circuit board and reflow oven that are used.
- When you set reflow soldering conditions, check that problems do not occur in the product by testing out the conditions in advance.

KLEDB0531EA

Dimensional outline (unit: mm)



- ① Anode (infrared LED)
 ② Anode (red LED)
 ③ Cathode (red LED)
 ④ Cathode (infrared LED)

Tolerance unless otherwise noted: ± 0.1
 Standard packing state: reel (1000 pcs/roll)

KLEDA0111EA

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

■ Precautions

- Disclaimer
- Surface mount type products

■ Technical information

- LED

Information described in this material is current as of July 2019.

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