

L10762



Resonant cavity LED for POF data communication

The L10762 is a red LED designed for POF data communications. A microball lens is bonded to the LED chip to enhance fibre-coupling efficiency.

Features

- **Improved fiber-coupling efficiency**
A microball lens is bonded to the LED chip surface to enhance the coupling efficiency to optical fibers.
Fiber end output power ^{*2} was boosted about 7 times higher than our conventional type.
- **High-speed response: 70 MHz**

Applications

- **POF (plastic optical fiber) data communication**

Absolute maximum ratings

Parameter	Symbol	Value	Unit
Reverse voltage	V _R	3	V
Forward current	I _F	50	mA
Pulsed forward current ^{*1}	I _{FP}	80	mA
Operating temperature	T _{opr}	-30 to +85	°C
Storage temperature	T _{stg}	-40 to +100	°C

^{*1}: Pulse width: 1 μs, Duty ratio=50 %

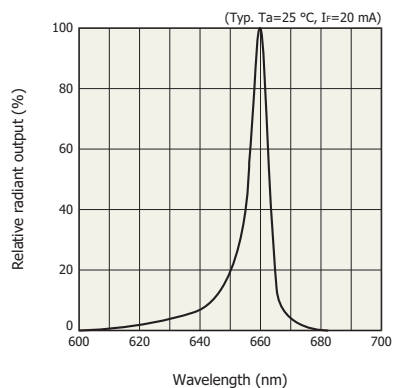
Electrical and optical characteristics (T_a=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λ _p	I _F =20 mA	640	660	670	nm
Spectral half width	Δλ	I _F =20 mA	-	10	20	nm
Fiber end output ^{*2}	P _f	I _F =20 mA	0.7	1.0	-	mW
Forward voltage	V _F	I _F =20 mA	-	1.9	2.4	V
Reverse current	I _R	V _R =3 V	-	-	10	μA
Cut-off frequency ^{*3}	f _c	I _F =20 mA ±1 mAp-p	60	70	-	MHz

^{*2}: Plastic fiber: 1 mm in core diameter, 1 meter in length, and Z (distance between cap surface and fiber end)=0.3 mm

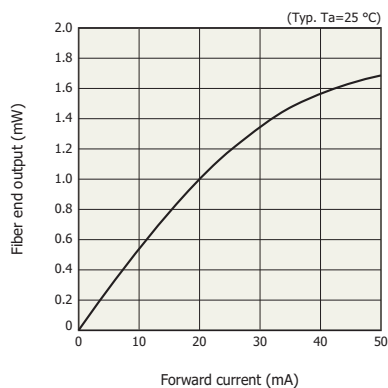
^{*3}: Frequency at which the radiant output drops by 3 dB relative to the output at 100 kHz

Emission spectrum



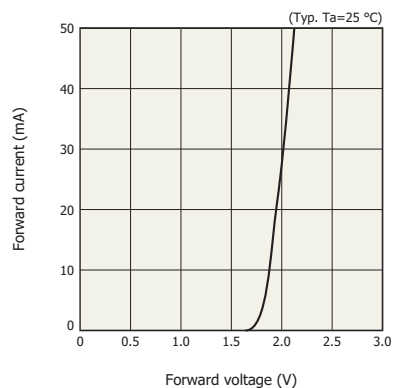
KLED80264EA

Fiber end output vs. forward current



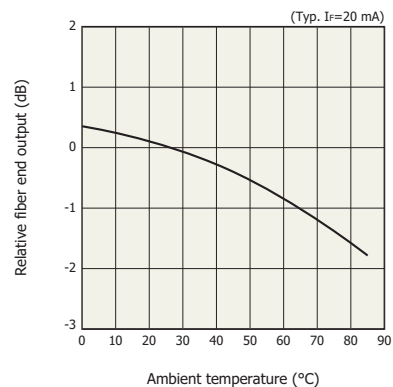
KLED80331EA

Forward current vs. forward voltage



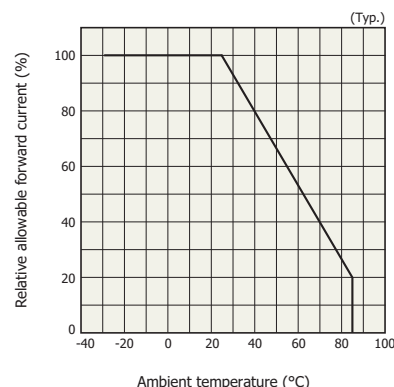
KLED80267EA

Fiber end output vs. ambient temperature



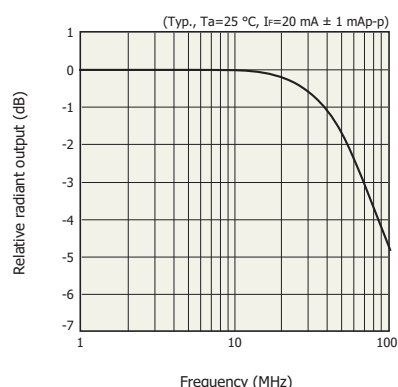
KLED80330EA

Allowable forward current vs. ambient temperature



KLED80027EB

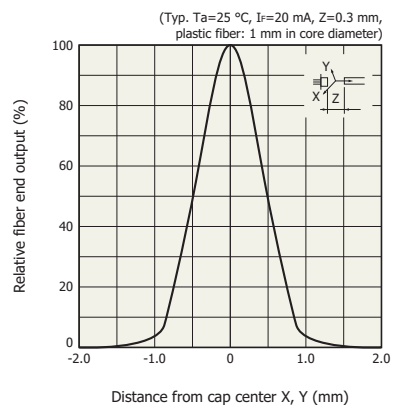
Frequency characteristic



KLED80318EA

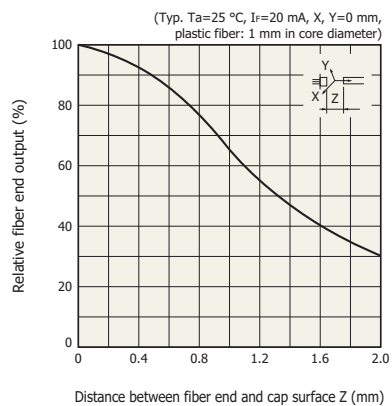
Fiber coupling characteristics

X, Y directions



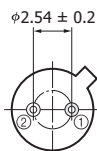
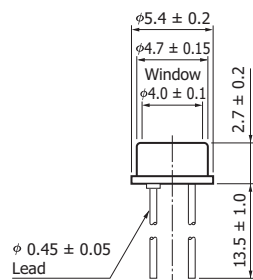
KLED80313EA

Z direction



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Dimensional outline (unit: mm)



Common to case



KLEDA0089EA

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Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein.

Type numbers of products listed in the specification sheets or supplied as samples may have a suffix "(X)" which means tentative specifications or a suffix "(Z)" which means developmental specifications. ©2009 Hamamatsu Photonics K.K.

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