

Features

- Optimized wavelength for Plastic optical fiber
- High Bandwidth
- No threshold
- Surface emitting
- High coupling efficiency
- Hermetically sealed

Applications

- IEEE1394b
- 155Mbps ATM
- Homenetworking
- Industrial applications

Ordering Information

ZL60003/TBD TO-46 Package

-20 to +70°C

Description

This unique Resonant Cavity Surface-Emitting LED (RCLED) is designed for optical communications over Plastic Optical Fiber (POF) in applications such as IEEE1394b (S100, S200) and 155 Mbps ATM. For very high speed operation, i.e. above 200 Mbps, an electrical pre-emphasis circuit is recommended to increase the bandwidth of the device. ZL60003 is also well suited for applications where visible light is required, such as in sensing and positioning.

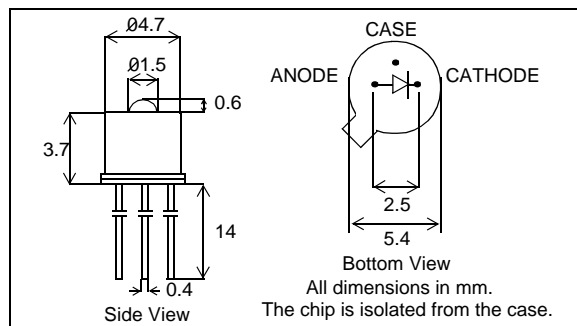


Figure 1 - Pin Description

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Fiber-Coupled Power	P_{fiber}	1.2			mW	$I_F=30\text{mA}$ (Note1)
Optical Power	P_o		2.0		mW	$I_F=30\text{mA}$
Beam Divergence (FWHM)	$2\Theta_{1/2}$		25		deg	$I_F=30\text{mA}$
Bandwidth (3dBel)	f_c	125			MHz	$I_F=30\text{mA}$ (Note1)
Peak Wavelength	λ_p	640	650	660	nm	$I_F=30\text{mA}$ (Note1)
Spectral Width (FWHM)	$\Delta\lambda$			20	nm	$I_F=30\text{mA}$ (Note1)
Forward Voltage	V_F			2.3	V	$I_F=30\text{mA}$

Note: Fiber: POF 980/1000µm Step Index, NA=0.48. For high speed communication, a low NA POF or a graded index POF are recommended.

Table 1 - Optical and Electronic characteristics (25°C Case temperature)

Parameter	Symbol	Limit
Storage Temperature	T_{stg}	-55 to +125 ⁰ C
Operating Temperature	T_{op}	-20 to +70 ⁰ C
Electrical Power Dissipation	P_{tot}	130 mW
Continuous Forward Current (f<10 kHz)	I_{F}	40 mA
Peak Forward Current (duty cycle<50%,f>1 MHz)	I_{FRM}	85 mA
Reverse Voltage	V_{R}	5 V
Soldering Temperature (2mm from the case for 10 sec.)	T_{sld}	260 ⁰ C

Table 2 - Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Thermal Resistance - Infinite Heat Sink	R_{thjc}		200		⁰ C/W
Thermal Resistance - No Heat Sink	R_{thja}		500		⁰ C/W
Temp. Coefficient - Wavelength	$d\lambda/dT_j$		0.08		nm/ ⁰ C
Optical Power - Fiber Coupled	dP_f/dT_j		-0.7		%/ ⁰ C

Table 3 - Thermal Characteristics



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