

TO-46 Package with Flat Window

DS5472

ISSUE 1

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Ordering Information

MF440

13430.11 TO-46 Package

WARNING: Laser Radiation, avoid exposure to beam. Class 3B laser product, potential eye hazard. Warning labels in each box.

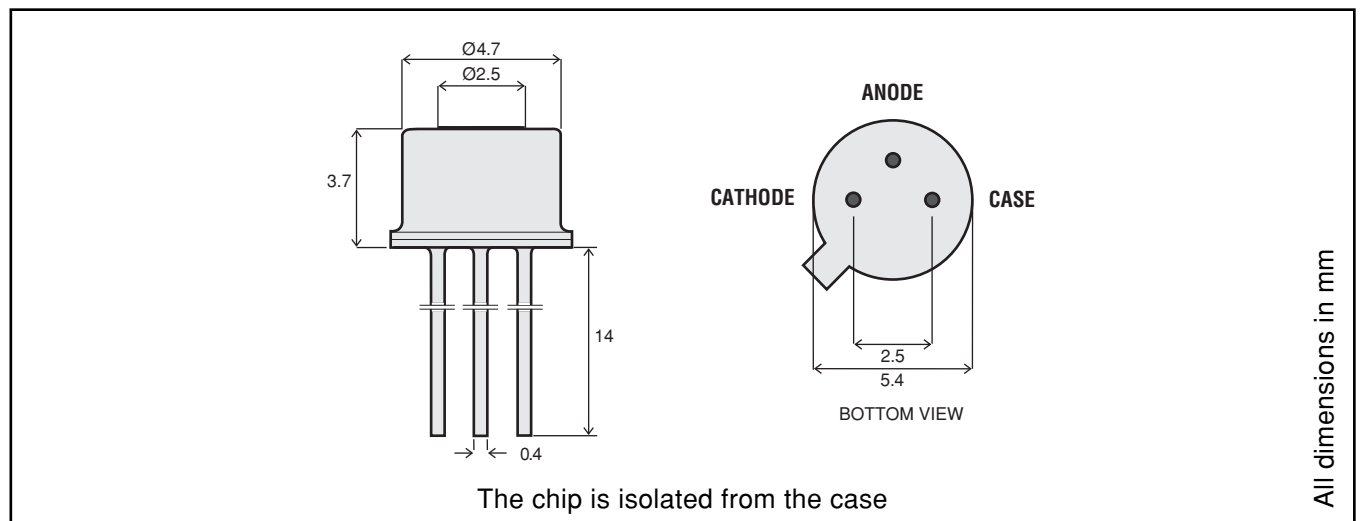
Description

This Vertical Cavity Surface Emitting Laser is designed for Fibre Channel, Gigabit Ethernet, ATM and general applications. It operates in multiple transverse and single longitudinal mode, ensuring stable coupling of power and low noise.

Optical and Electrical Characteristics - Case Temperature 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Fiber-Coupled Power	P_{fiber}		1.3		mW	$I_F=12\text{mA}$ (Note 1)
Optical Power	P_o	0.9	1.7	3.0	mW	$I_F=12\text{mA}$
Slope Efficiency (dP_o/dI_F)	η		200		mW/A	$I_F=12\text{mA}$
Beam Divergence	Θ		15		deg	Full Width at $1/e^2$
Bandwidth (3db _{el})	f_c		1.5		GHz	$I_F=12\text{mA}$
Peak Wavelength	λ_p	830	840	860	nm	$I_F=12\text{mA}$
Spectral Width (FWHM)	$\Delta\lambda$		0.5	1	nm	$I_F=12\text{mA}$
Forward Voltage	V_F		1.9	2.2	V	$I_F=12\text{mA}$
Threshold Current	I_{th}		3.5	6	mA	
Relative Intensity Noise	RIN		-130		dB/Hz	$I_F=12\text{mA}$, $f=1\text{GHz}$

**Note 1: Fiber: 50/125 Graded Index, NA=0.2 or 62.5/125 Graded Index, NA=0.275.
An external glass ball lens with 2 mm diameter is required**



Absolute Maximum Ratings

Parameter	Symbol	Limit
Storage Temperature	T_{stg}	-55 to +125°C
Operating Temperature see (derating: Fig. 4)	T_{op}	0 to +70°C
Electrical Power Dissipation (derating: Fig. 4)	P_{tot}	35 mW
Continuous Forward Current (f<10kHz)	I_F	15 mA
Peak Forward Current (duty cycle<50%, f>1MHz)	I_{FRM}	25 mA
Reverse Voltage	V_R	1.5V
Soldering Temperature (2mm from the case for 10sec)	T_{sld}	260°C

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance - Infinite Heat Sink	R_{thjc}		400		°C/W
Thermal Resistance - No Heat Sink	R_{thja}		700		°C/W
Temperature Coefficient - Wavelength	$d\lambda/dT_j$		0.06		nm/°C
Optical Power - Variation 0 to 70°C	ΔP		±0.7		dB
Threshold Current - Variation 0 to 70°C	ΔI_{th}		±0.6		mA

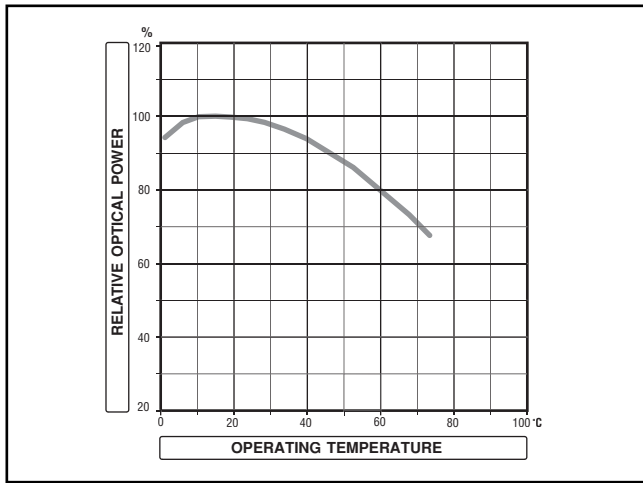


Figure 1

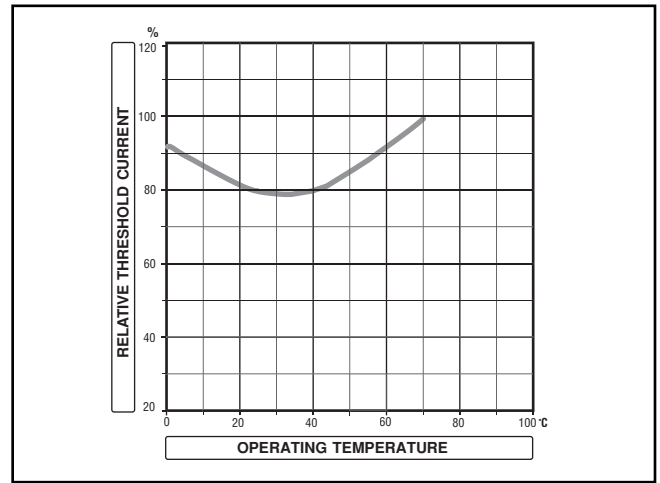


Figure 2

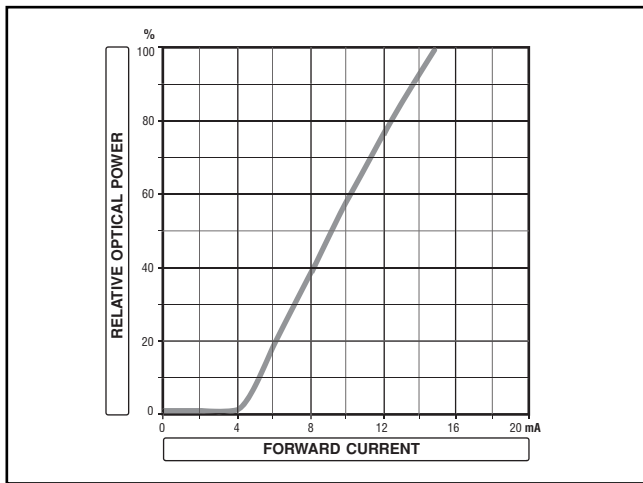


Figure 3

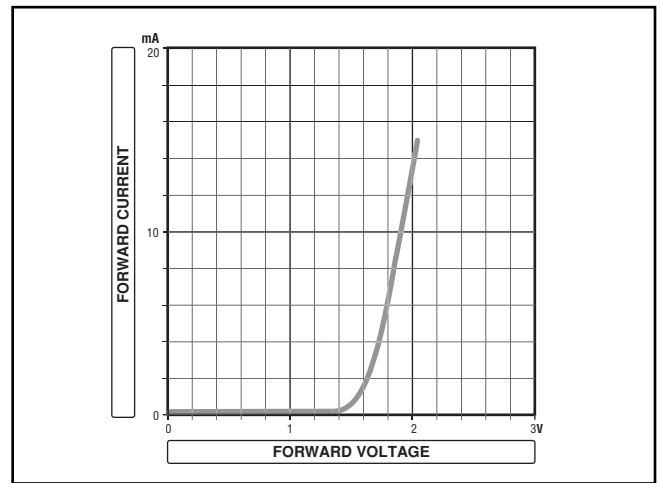


Figure 4

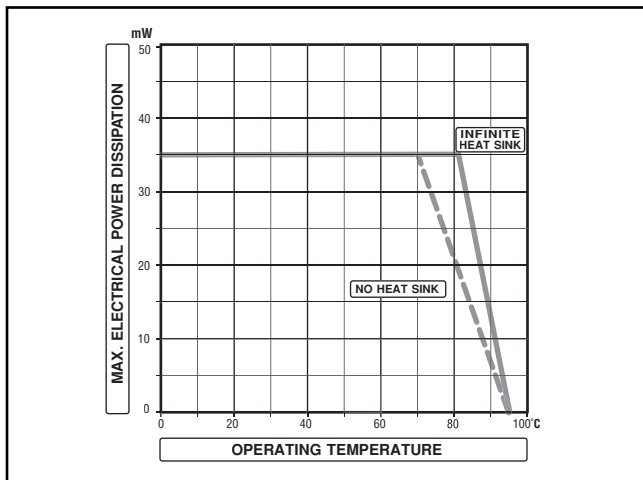


Figure 5

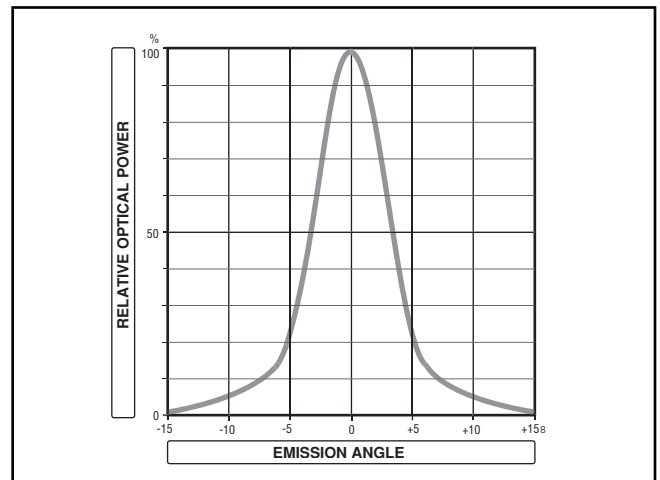


Figure 6



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