

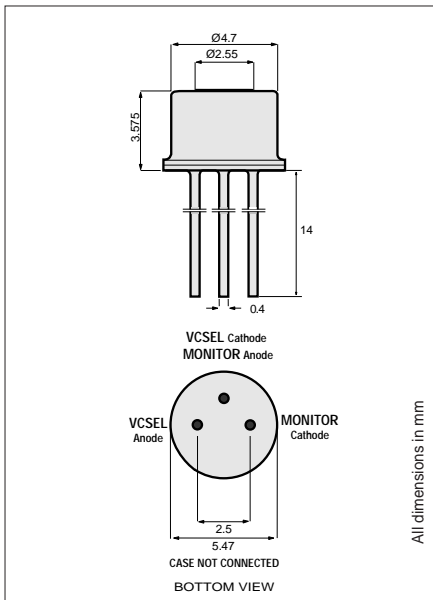
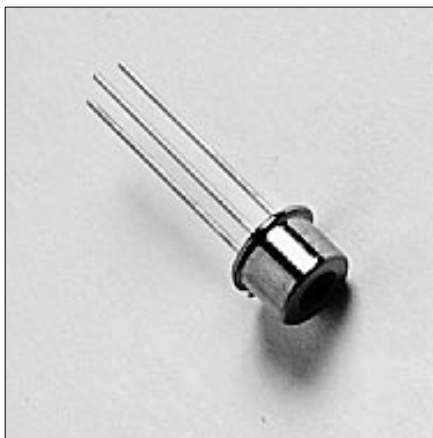
PRODUCT INFORMATION

840nm

2B455
VCSEL Laser Diode

Datacom

This Vertical Cavity Surface-Emitting Laser is designed for Fibre Channel, Gigabit Ethernet, ATM and general applications. It incorporates a photodiode to monitor the optical power and allow for feedback control.



TO-46 Package With Flat Window

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

13590.11 1999-04-01

Optical and Electrical Characteristics (25° C Case Temperature)

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 _{e1})	f_C		2		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	
Monitor Current	I_m	20	30		μA	$I_F=12\text{mA}$, $V_R>1\text{V}$
Monitor Dark Current	I_d			30	nA	$V_R=5\text{V}$
Relative Intensity Noise	RIN		-130		dB/Hz	$I_F=12\text{mA}$, $f=1\text{GHz}$

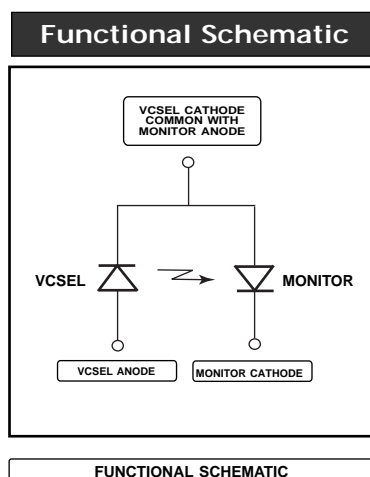
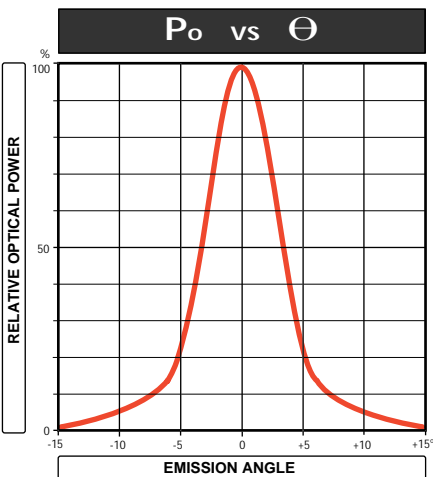
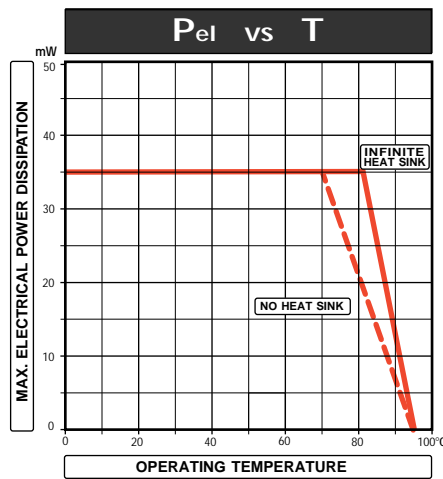
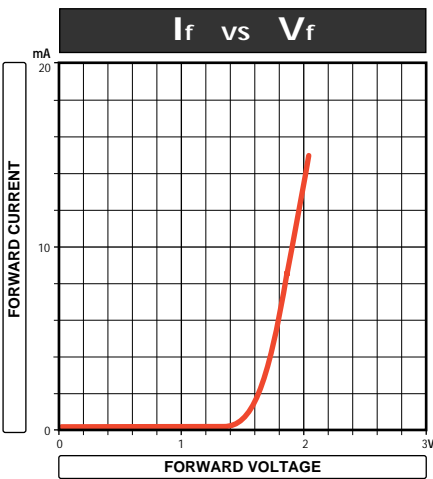
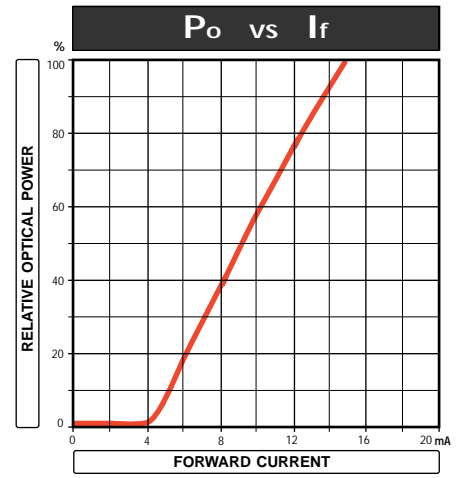
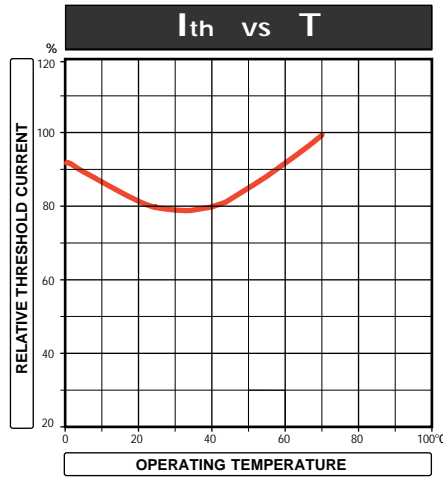
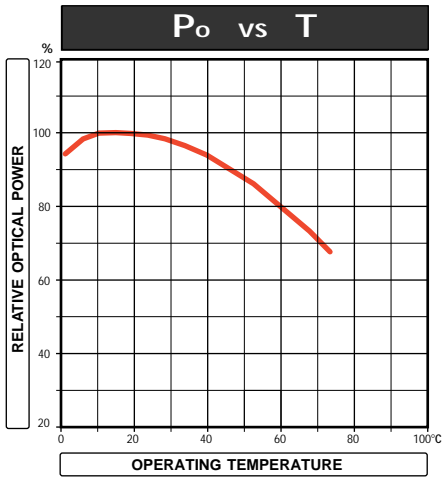
Note 1: Fiber: 50/125 Graded Index, NA=0.2 or 62.5/125 Graded Index, NA=0.275. An external glass ball lens with 2 mm diameter is required.

Absolute Maximum Ratings

PARAMETER	SYMBOL	LIMIT
Storage Temperature	T_{stg}	-55 to +125°C
Operating Temperature	T_{op}	0 to +70°C
Electrical Power Dissipation	P_{tot}	35 mW
Continuous Forward Current ($f \leq 10\text{kHz}$)	I_F	15 mA
Peak Forward Current (duty cycle $\leq 50\%$, $f \geq 1\text{MHz}$)	I_{FRM}	25 mA
VCSEL Reverse Voltage	V_R	1.5 V
Soldering Temperature (2mm from the case for 10 sec)	T_{sld}	260°C

Thermal Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance - Infinite Heat Sink	R_{thjc}		500		°C/W
Thermal Resistance - No Heat Sink	R_{thja}		800		°C/W
Temp. 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





<http://www.mitelsemi.com>

World Headquarters - Canada

Tel: +1 (613) 592 2122
Fax: +1 (613) 592 6909

North America

Tel: +1 (770) 486 0194
Fax: +1 (770) 631 8213

Asia/Pacific

Tel: +65 333 6193
Fax: +65 333 6192

**Europe, Middle East,
and Africa (EMEA)**

Tel: +44 (0) 1793 518528
Fax: +44 (0) 1793 518581

Information relating to products and services furnished herein by Mitel Corporation or its subsidiaries (collectively "Mitel") is believed to be reliable. However, Mitel assumes no liability for errors that may appear in this publication, or for liability otherwise arising from the application or use of any such information, product or service or for any infringement of patents or other intellectual property rights owned by third parties which may result from such application or use. Neither the supply of such information or purchase of product or service conveys any license, either express or implied, under patents or other intellectual property rights owned by Mitel or licensed from third parties by Mitel, whatsoever. Purchasers of products are also hereby notified that the use of product in certain ways or in combination with Mitel, or non-Mitel furnished goods or services may infringe patents or other intellectual property rights owned by Mitel.

This publication is issued to provide information only and (unless agreed by Mitel in writing) may not be used, applied or reproduced for any purpose nor form part of any order or contract nor to be regarded as a representation relating to the products or services concerned. The products, their specifications, services and other information appearing in this publication are subject to change by Mitel without notice. No warranty or guarantee express or implied is made regarding the capability, performance or suitability of any product or service. Information concerning possible methods of use is provided as a guide only and does not constitute any guarantee that such methods of use will be satisfactory in a specific piece of equipment. It is the user's responsibility to fully determine the performance and suitability of any equipment using such information and to ensure that any publication or data used is up to date and has not been superseded. Manufacturing does not necessarily include testing of all functions or parameters. These products are not suitable for use in any medical products whose failure to perform may result in significant injury or death to the user. All products and materials are sold and services provided subject to Mitel's conditions of sale which are available on request.

M Mitel (design) and ST-BUS are registered trademarks of MITEL Corporation
Mitel Semiconductor is an ISO 9001 Registered Company
Copyright 1999 MITEL Corporation
All Rights Reserved
Printed in CANADA

TECHNICAL DOCUMENTATION - NOT FOR RESALE