

# PRODUCT INFORMATION

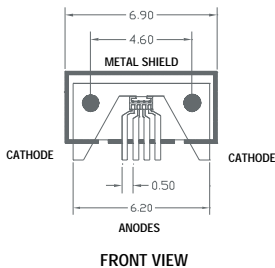
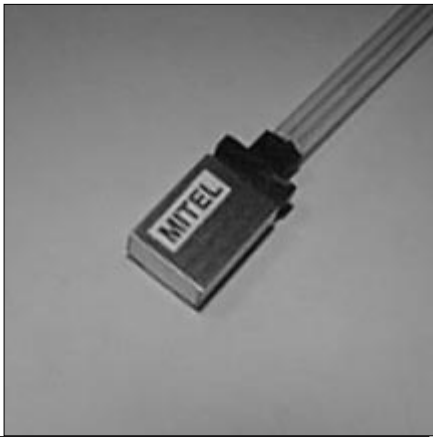
840nm

**4D469**  
VCSEL Array

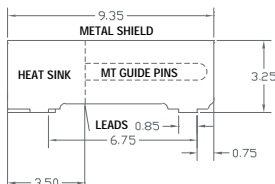
Parallel Datacom, Telecom

PRELIMINARY/β

This device consists of a 4-channel VCSEL array in a miniature surface-mountable MT package. It is based on a unique combination of self-alignment technology and direct optical coupling to fiber, resulting in pure beam shapes and optimum coupling efficiency without need for active alignment. Applications include parallel Fibre Channel and optical interconnect inter/intra-board. And it matches the 4D470 PIN Photodiode Array.



FRONT VIEW



SIDE VIEW

The cathode is connected to the metal shield

## VCSEL Array in MT Package

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

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## Optical and Electrical Characteristics (25° C Case Temperature)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Fiber-Coupled Power	$P_{\text{fiber}}$		1.0		mW	
Optical Power	$P_o$		1.1		mW	
Slope Efficiency ( $dP_o/dI_F$ )	$\eta$		250		mW/A	
Beam Divergence	$\theta$		15		deg	Full Width at 1/e <sup>2</sup>
Bandwidth (3dB <sub>e1</sub> )	$f_c$		2		GHz	
Peak Wavelength	$\lambda_p$	830	840	860	nm	
Spectral Width (FWHM)	$\Delta\lambda$		0.5	1	nm	
Forward Voltage	$V_F$		1.8		V	
Threshold Current	$I_{th}$		5.5		mA	
Relative Intensity Noise	RIN		-130		dB/Hz	f=1 GHz
Crosstalk	X		-25		dB <sub>e1</sub>	(Note 1)

**Test Condition:**  $I_f=10\text{mA}$ . Fiber Ribbon: 50/125 GI, NA=0.2 or 62.5/125 GI, NA=0.275.

**Note 1:** Crosstalk between adjacent channels operating at 2GHz.

## Absolute Maximum Ratings

PARAMETER	SYMBOL	LIMIT
Storage Temperature	$T_{stg}$	-40 to +85°C
Operating Temperature	$T_{op}$	0 to +70°C
Electrical Power Dissipation	$P_{tot}$	20 mW/Channel
Continuous Forward Current ( $f \leq 10$ kHz)	$I_F$	11 mA/Channel
Peak Forward Current (duty cycle $\leq 50\%$ , $f \geq 1$ MHz)	$I_{FRM}$	18 mA/Channel
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	$R_{th}$		TBD		°C/W
Temp. Coefficient - Wavelength	$d\lambda/dT_j$		0.06		nm/°C
Optical Power - Variation 0 to 70°C	$\Delta P$		$\pm 0.7$		dB
Threshold Current - Variation 0 to 70°C	$\Delta I_{th}$		$\pm 0.6$		mA



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