PM85-F1P1N

1.25/2.5Gbps 850nm VCSEL TO-46 Can Package

Features

: Multi-mode 850nm VCSEL

: 1.25 / 2.5 Gbps data rates

: Low drive current and voltage

: Flat window Type TO-46 Can Package

: Back monitor Photo diode

: Attenuating coating

: Other configurations available on request

Applications

: High speed Data Communications

: Gigabit Ethernet

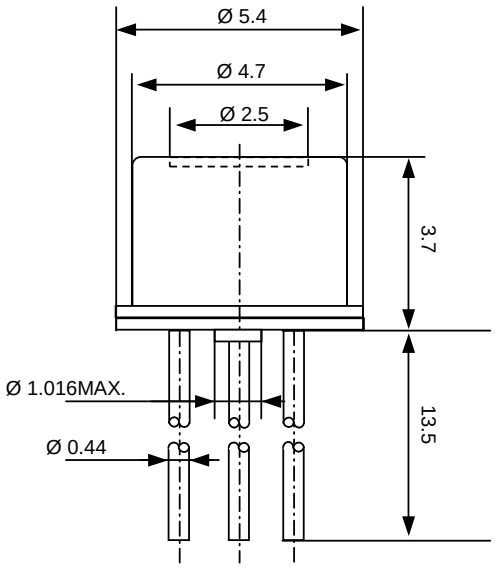
: Fiber Channel

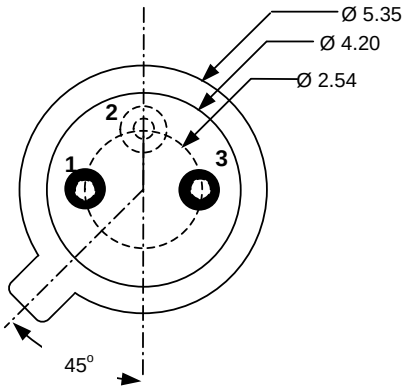
Description

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to 100 ^{o}C
Operating Temperature	0 to 85 ^{o}C
Lead Solder Temperature	260 ^{o}C, 10 sec
Continuous Forward Current	12mA
Continuous Reverse Voltage	5V (@10μA)

Dimensions





Bottom view

PINOUT

Number	Function
1	A_{LD}
2	K_{LD},A_{PD}
3	K_{PD}

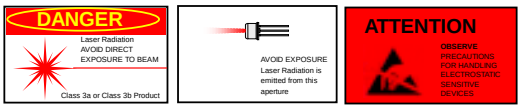
Unit:mm

Electro-Optics Characteristics (T_a=25°C unless otherwise stated)

Parameters	Symbol	Specified			Unit	Test Conditions
		Min.	Typ.	Max.		
Optical Output Power	P_o		0.7		mW	I_f = 7 mA
Threshold Current	I_{th}		1.5	3	mA	CW
I_{th} Temperature Variation	ΔI_{th}		1.5		mA	T_a=0 to 85°C
Slope Efficiency	η	0.08	0.12	0.25	W/A	I_f = 7 mA
η Temperature Variation	Δη / ΔT		-0.5		%/ °C	T_a=0 to 85°C at 7 mA
Peak Wavelength	λ_P	840	850	860	nm	I_f = 7mA
λ_P Temperature Coefficient	Δ λ / ΔT		0.06		nm/ °C	T_a=0 to 85°C at 7mA
Spectral Bandwidth (RMS)	Δ λ			0.85	nm	I_f = 7mA
Forward Voltage	V_f		1.7	2.2	V	I_f = 7mA
Breakdown Voltage	V_b		-10		V	
Rise and Fall Times	t_r t_f			130 150	ps	Prebias Above Threshold, 20%~80%
Relative Intensity Noise	RIN		-130	-122		1 GHz BW, I_f = 7mA
Series Resistance	R_S	20	35	55	Ohm	I_f = 7mA
R_s Temperature Coefficient	dR_s/dT		-3000		PPM/ °C	
Parameters	**Symbol**	**Min.**	**Typ.**	**Max.**	**Unit**	**Test Conditions**
Monitor Current	I_{PD}		0.5		mA	P_0=0.7mW
I_{PD} Temperature Variation	$\Delta I_{PD}/\Delta T$		0.2		%/ °C	P_0=0.7mW
Dark current	I_D			20	nA	P_0=0mW,V_R=3V
PD Reverse Voltage	BVR_{PD}	30	115		V	P_0=0mW,IR=10μA
PD Capacitance	C			100 55	pF	V_R=0V,Freq=1MHz V_R=3V,Freq=1MHz

Notes

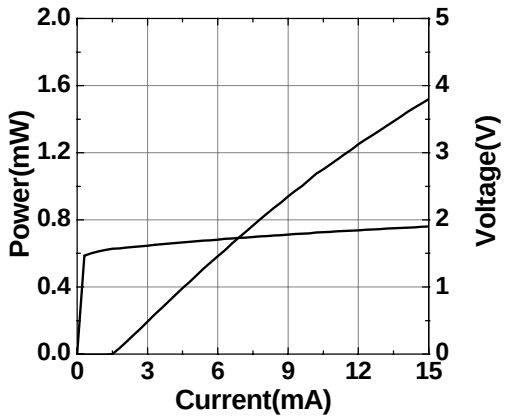
* These specifications are subject to change without notice



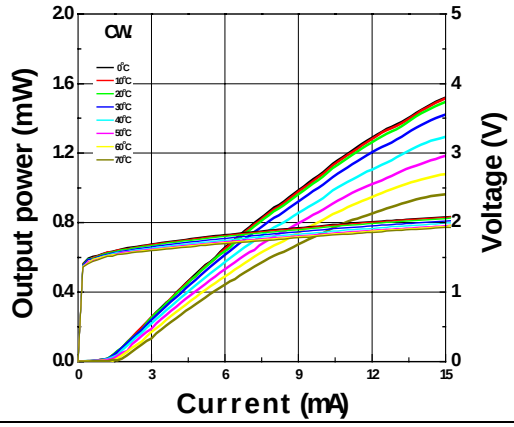
NOTICE	The inherent design of this component causes it to be sensitive to electrostatic discharge(ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product
DANGER	The VCSEL is a class IIIb laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.

Characteristics Curves

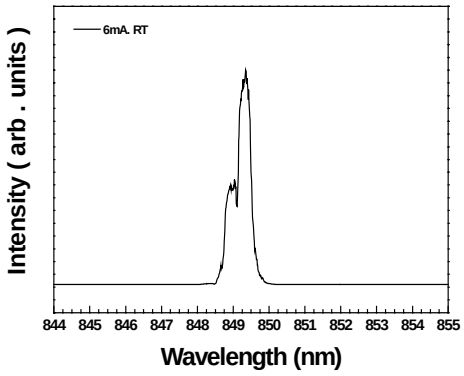
LI Curve



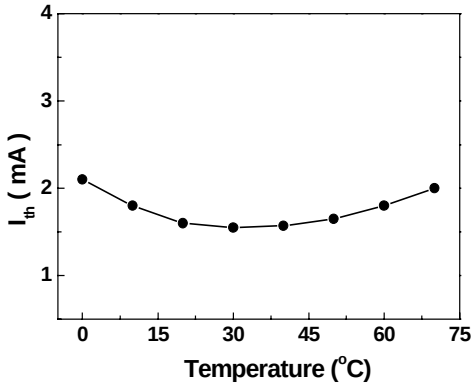
LIV vs Temperature



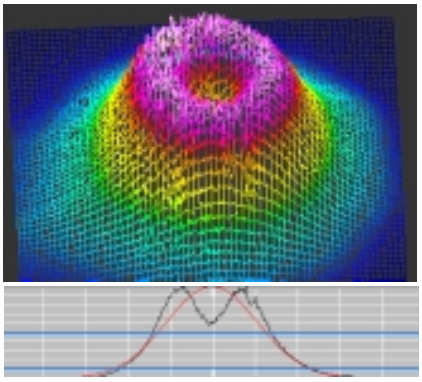
EL Spectrum



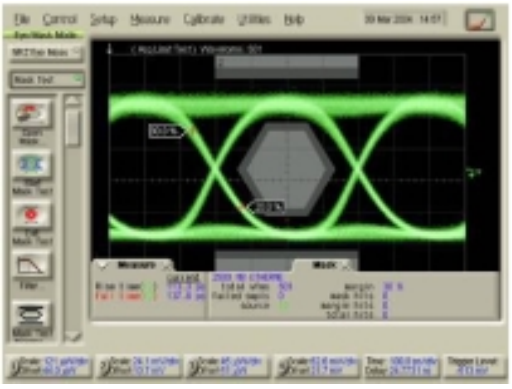
I_{th} vs Temperature



FFP



Eye diagram



Eye diagrams at 7mA Data rate : 2.5Gbps
Extinction ratio : 10dB PRBS : 2^31-1
Filtered 1.87G Low pass filter Back to Back