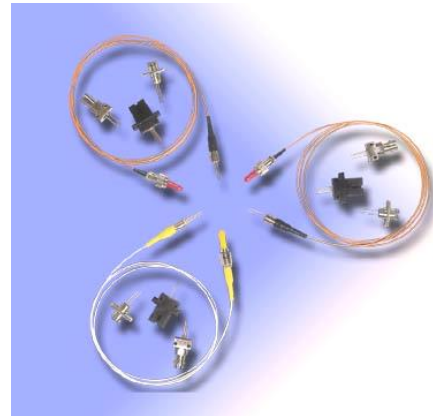


# 1310nm FP Laser Diode SM Module

1310nm FP Laser Diode SM Module

## Features

- Center wavelength 1310nm
- Low threshold current
- High speed  $t_r/t_f < 0.7\text{ns}$
- Built-in InGaAs monitor detector
- Four-lead package
- Wide operating temperature  $-40^\circ\text{C}$  to  $85^\circ\text{C}$
- Hermetically sealed TO-18 package in pigtailed or receptacle housing with FC, ST or SC connector



## Applications

- Fiber In The Loop
- ATM, SONET/SDH
- Motorway and railway networks
- Intra and interoffice links
- Subscriber loops
- Trunk supervision
- Test instruments

## Specifications

### Optical And Electrical Characteristics (T=25+/-3°C unless specified otherwise)

Parameter	Symbol	Test Conditions	Min	Typical	Max	Units
Center Wavelength	$\lambda$	25 °C -40 to 85 °C	1290 1260	1310 -	1330 1360	nm
Spectral Width	$\Delta\lambda$	$P_0$ (RMS, -20dB)	-	1	2	nm
Threshold Current	$I_{th}$	25 °C -40 to 85 °C	3 1	5 -	15 40	mA
Operating Voltage	$V_{op}$	$P_0$	-	1.1	1.5	V
Rise/Fall Time	$t_r / t_f$	10-90%	-	0.3	0.7	ns
Optical Output Power	$P_0$	$I_{th}+20\text{mA}$				
-1			0.1	0.25	-	mW
-2			0.4	0.55	-	mW
-3			0.7	0.9	-	mW
-4			1.2	-	-	mW
Differential Efficiency		$P_0$				
-1	-		0.01	-	-	mW/mA
-2	-		0.02	-	-	mW/mA
-3	-		0.04	-	-	mW/mA
-4	-		0.06	-	-	mW/mA
Monitor Current (PD)	$I_m$	$P_0, V_{RD} = 1\text{V}$	0.1	0.7	-	mA
Dark Current (PD)	$I_d$	$V_{RD} = 10\text{V}$	-	-	0.1	$\mu\text{A}$
Tracking Error	$E_t$	-40 to 85 °C	-	$\pm 1.0$	-	dB

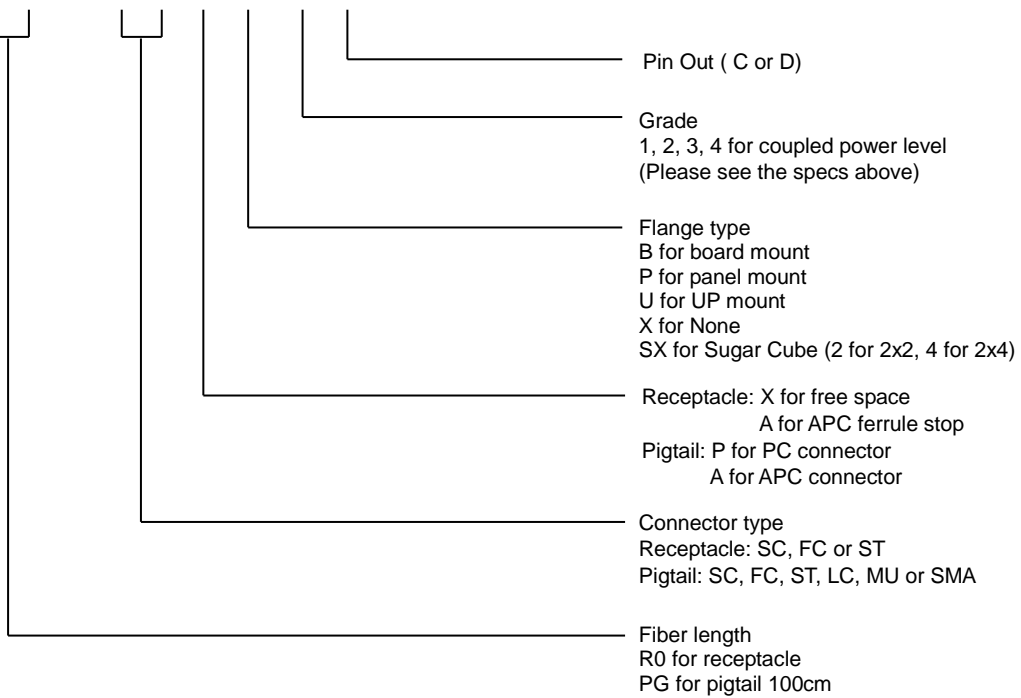
### Absolute Maximum Ratings (T=25°C)

Parameter	Symbol	Min.	Max.	Unit
Forward Current (LD)	$I_{op}$	-	85	mA
Reverse Voltage (LD)	$V_{RL}$	-	2	V
Forward Current (PD)	$I_{FD}$	-	2	mA
Reverse Voltage (PD)	$V_{RD}$	-	20	V
Operating Temperature	$T_O$	-40	+85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40	+125	$^\circ\text{C}$
Lead Soldering Temperature (10 sec)	$T_L$	-	260	$^\circ\text{C}$

# 1310nm FP Laser Diode SM Module

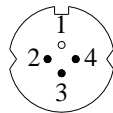
## Ordering Information

LD13□□S1□□□□-□□



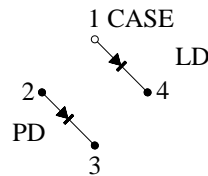
## Pin Connections

BOTTOM VIEW

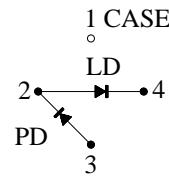


UNIT : MM

C TYPE  
PIN CONNECTIONS



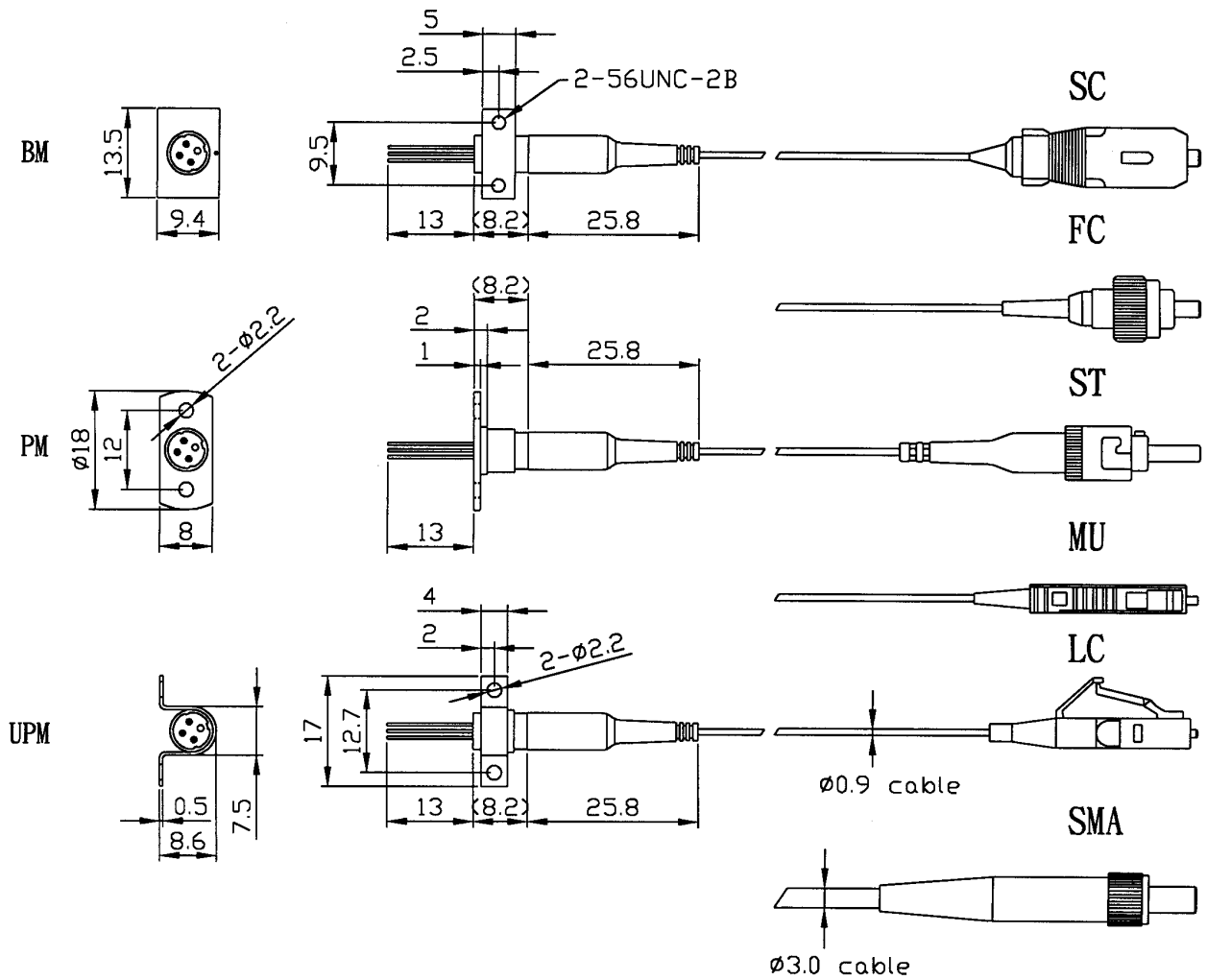
D TYPE  
PIN CONNECTIONS



# 1310nm FP Laser Diode SM Module

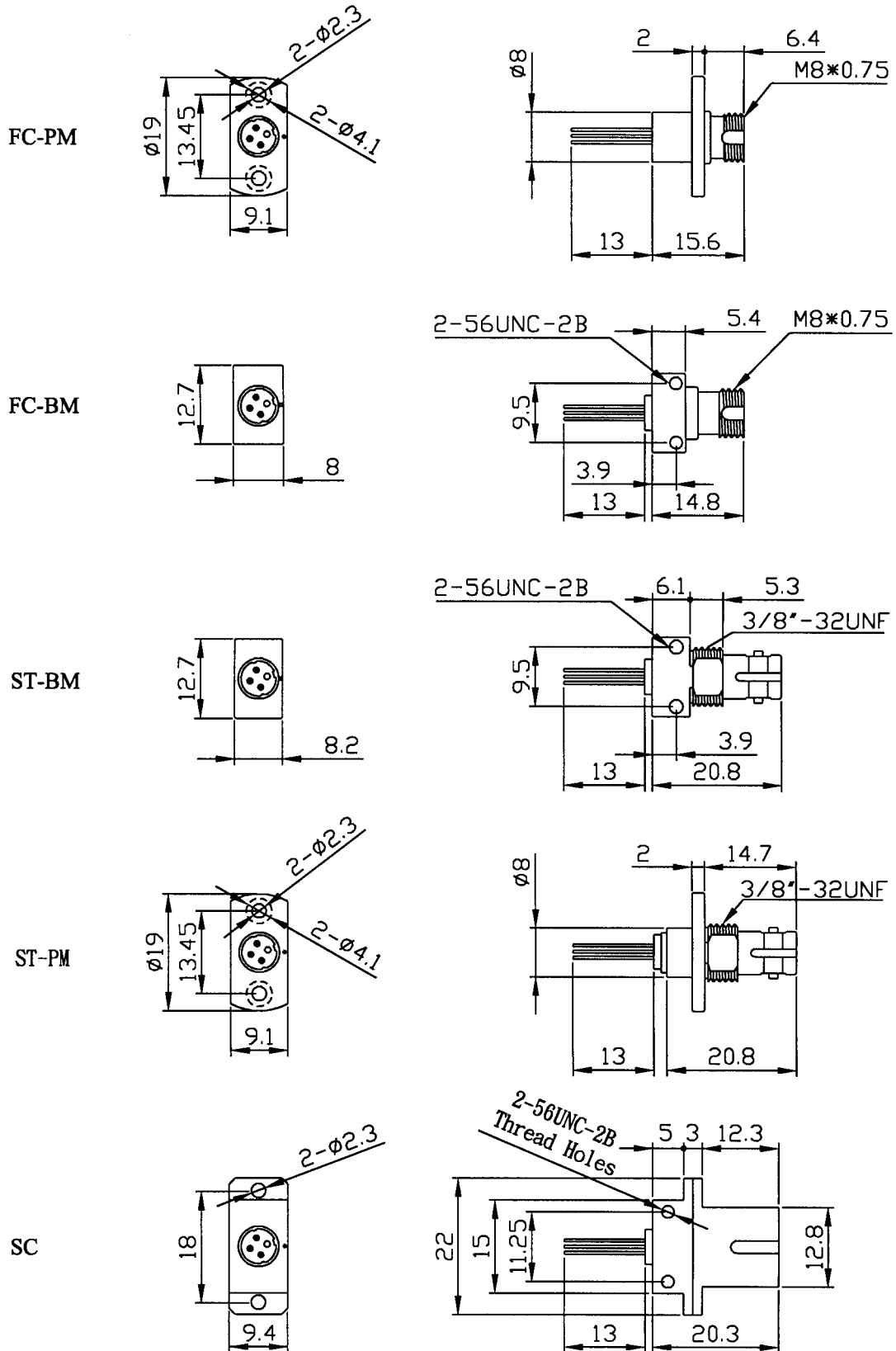
## Dimension

Pigtail Type :



# 1310nm FP Laser Diode SM Module

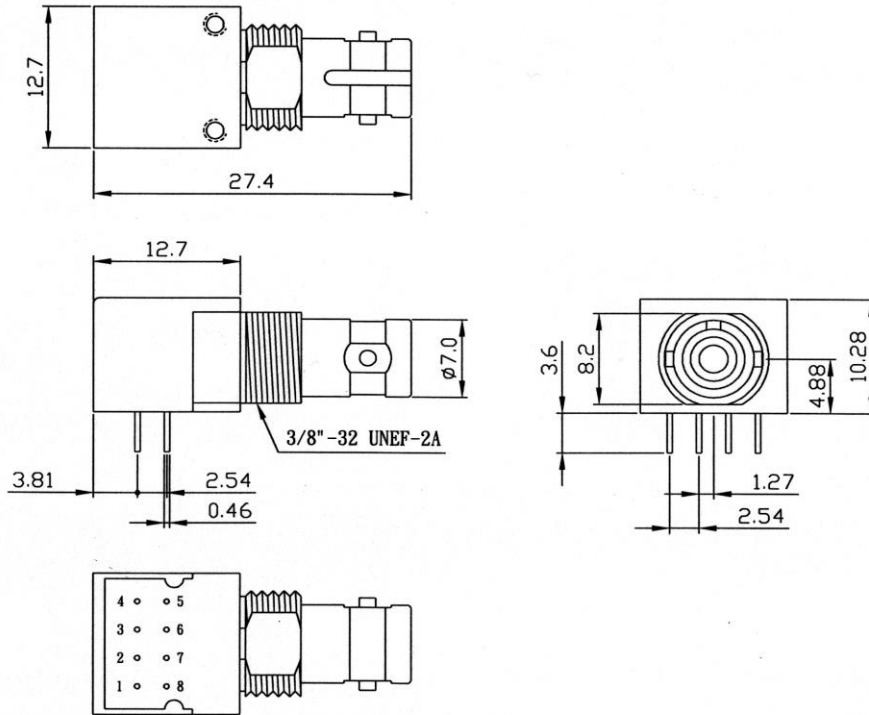
Receptacle Type :



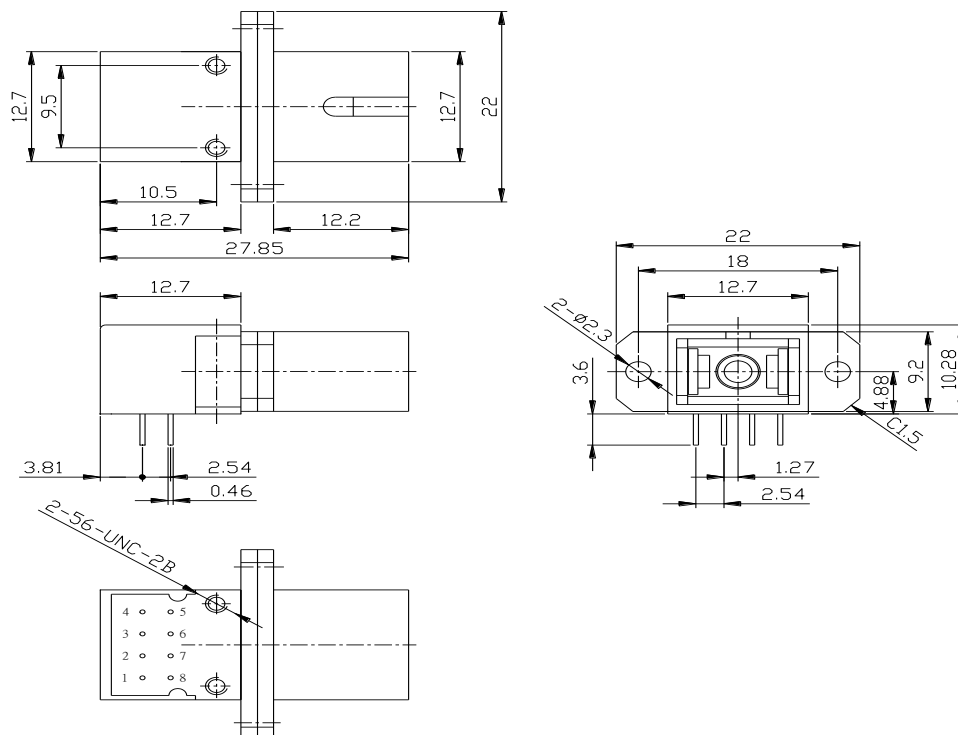
# 1310nm FP Laser Diode SM Module

## Sugar Cube (ST)

Unit : mm

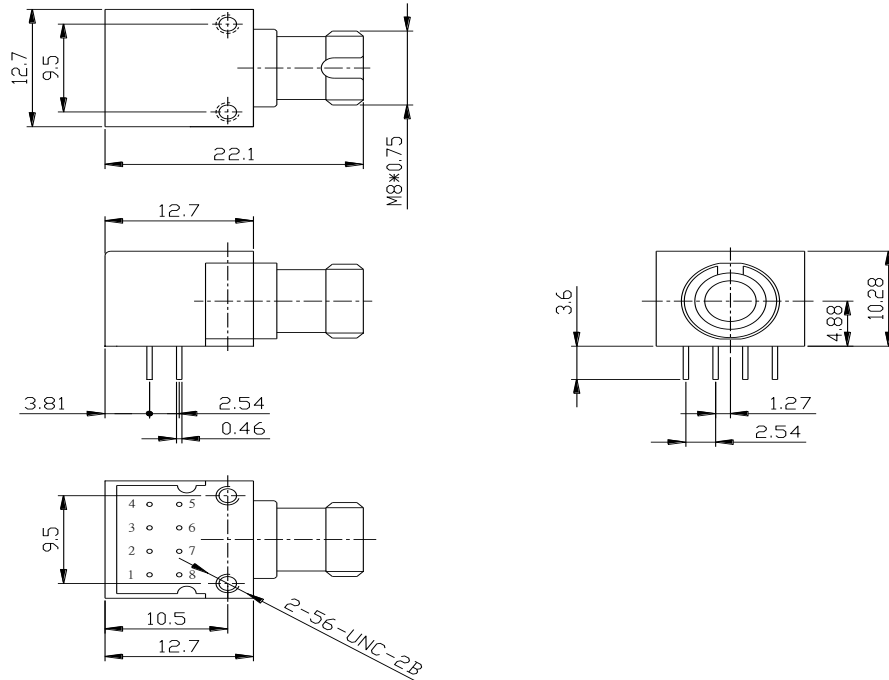


## Sugar Cube (SC)



# 1310nm FP Laser Diode SM Module

## Sugar Cube (FC)



### 2x4 Pin Connections :

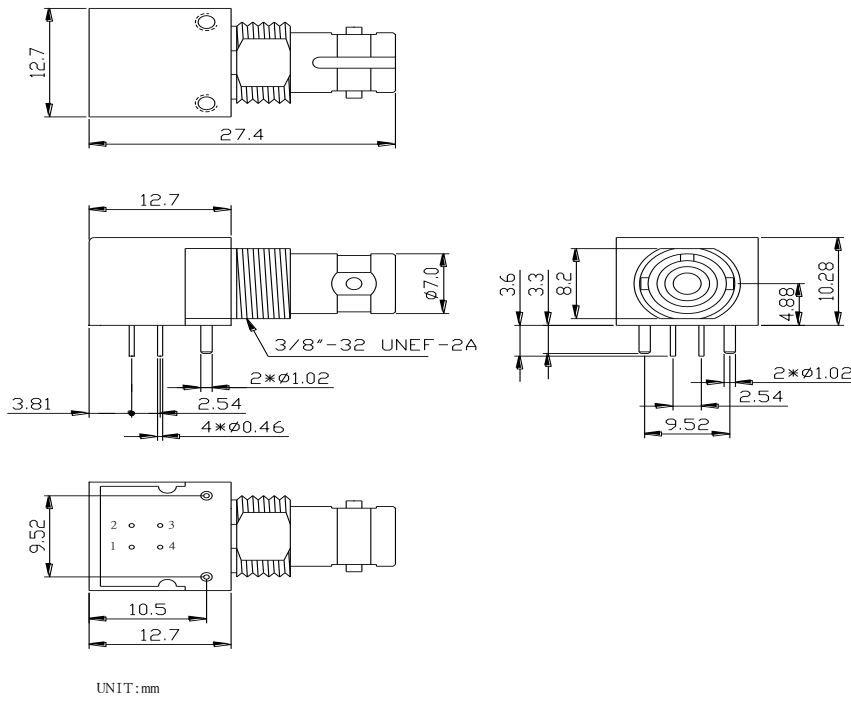
#### Pin Connections (Type A)

PIN No.	FUNCTION
1	NC
2	LD ANODE
3	LD CATHODE
4	NC
5	NC
6	LD ANODE
7	LD ANODE
8	NC

#### Pin Connections (Type B)

PIN No.	FUNCTION
1	NC
2	NC
3	LD Cathode (LD-)
4	NC
5	NC
6	LD Anode (LD+), PD-
7	Monitor PD Anode (PD+)
8	NC

# 1310nm FP Laser Diode SM Module

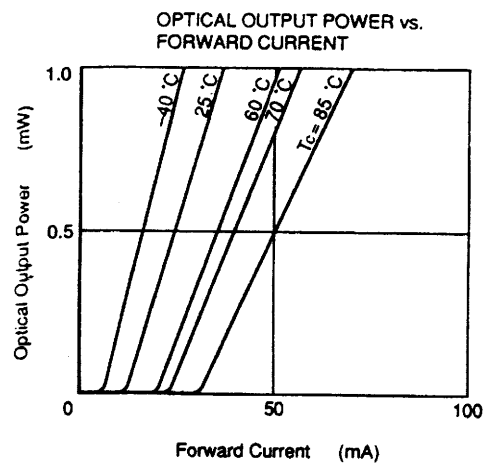
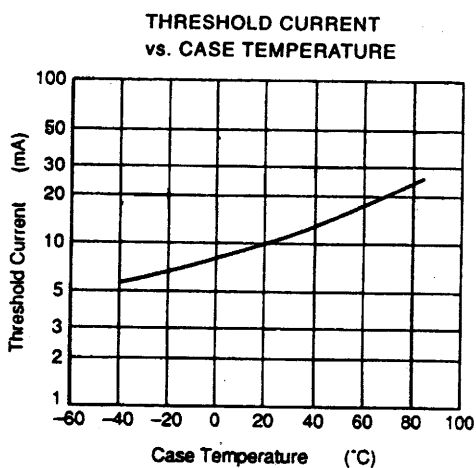
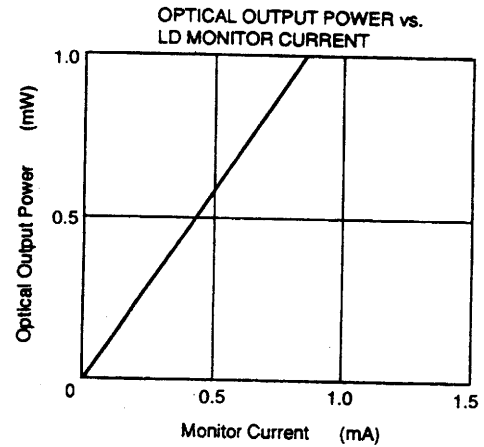
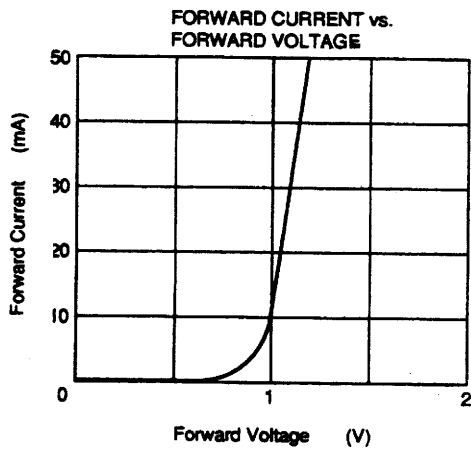
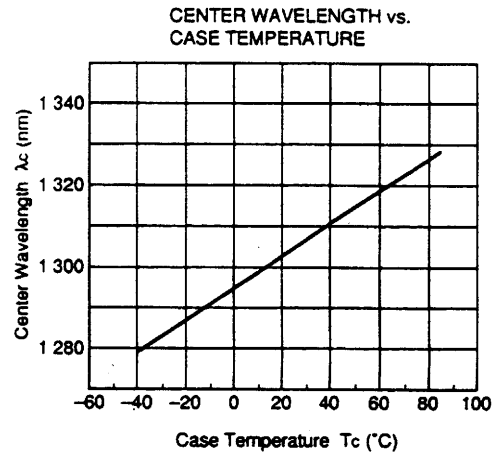
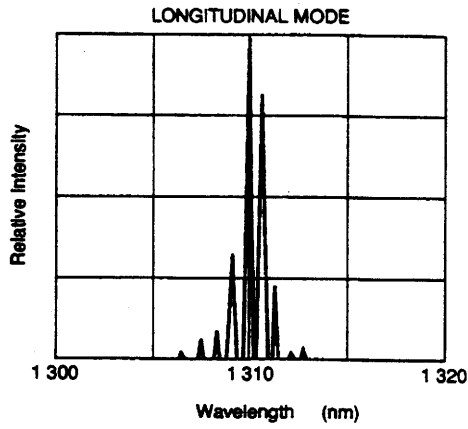


## 2x2 Pin Connections :

PIN	FUNCTION
1	ANODE
2	CATHODE
3	ANODE
4	ANODE

# 1310nm FP Laser Diode SM Module

## Typical Characteristics ( 25°C )





# 1310nm FP Laser Diode SM Module

1310nm FP LD  
Fiber-coupled Power vs. Drive Current

