

Optical Components

Rev.4 [10.2008]

OL5172M

1550nm 10Gb/s EA Modulator with DFB Laser Module.

1. DESCRIPTION

OL5172M is a 1550-nm electro-absorption (EA) modulator with DFB laser (EMwL) module for 10 Gb/s applications. The package contains an EMwL chip, an optical isolator, a rear-facet monitor photodiode, and a thermoelectric cooler.

2. FEATURES

- High temperature operation of EMwL ($T_{LD}=45$ degreeC) for lower power consumption
- Low dispersion penalty over 40 km (800 ps/nm) for 10 Gb/s operation
- Electrical isolation between signal GND and PKG case
- Pinout with XMD-MSA-TOSA compatible
- Mounting bracket available as an option

3. APPLICATION

- 10 Gb/s (OC-192) intermediate reach transmission
- High-speed data communication

4. OPTICAL AND ELECTRICAL CHARACTERISTICS

($T_{LD}= 45^{\circ}\text{C}$, $T_c=0$ to 75°C , unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Threshold Current	I _{th}	CW	---	---	35	mA
Operation Current	I _{op}	---	---	---	100	mA
Fiber Output Power (Average)	P _{AVG}	If = I _{op} , under modulation	0	---	---	dBm
Peak Wavelength	λ_p	If = I _{op}	1530	---	1565	nm
Side Mode Suppression Ratio	SMSR	If = I _{op}	35	---	---	dB
LD Forward Voltage	V _f	If = I _{op} , CW, V _m = 0V	---	---	1.7	V
Monitor Current	I _m	If = I _{op} , CW	50	---	1000	μA
ON-Level Modulation Voltage	V _o	---	-1.0	---	+0.5	V
Modulator Drive Voltage	V _{pp}	---	---	2.0	2.5	V
Extinction Ratio	ER	Note(1)	9.5	---	---	dB
Dispersion Penalty	DP	800 ps/nm, BER at 10^{-12} Note(1)	---	---	2.0	dB
Tracking Error	TRE	I _m =const. 0/25/75 $^{\circ}\text{C}$	-0.5	---	0.5	dB
TEC Current	I _{tec}	If = I _{op}	---	---	1.0	A
TEC Voltage	V _{tec}	If = I _{op}	---	---	2.5	V
TEC Power Consumption	P _{tec}	If = I _{op}	---	0.65	---	W
Thermistor Resistance	R _{th}	25 $^{\circ}\text{C}$	9.5	---	10.5	k Ω
Thermistor B Value	B _{th}	25 $^{\circ}\text{C}$ /50 $^{\circ}\text{C}$	---	3900	---	K

Note(1)9.95328Gb/s, 2^{31} -1NRZ

5. ABSOLUTE MAXIMUM RATING

(TLD= 45°C, unless otherwise specified)

Parameter	Symbol	Min.	Max.	Unit
Operating Case Temperature	Tc	0	75	°C
Storage Temperature	Tstg	-40	85	°C
LD Forward Current ^{*1)}	ILDF	---	150	mA
LD Forward Current ^{*2)}	ILDF	---	110	mA
LD Reverse Voltage	VLDR	---	2	V
TEC Voltage	Vtec	---	3	V
TEC Current	Itec	---	1.5	A

*1) With no voltage applied to EA modulator.

*2) Under modulation.

6. CONNECTOR AND FIBER SPECIFICATIONS

Parameter	Specifications	Unit
Type	SMF	-
Mode Field Diameter	9+/-1	um
Cladding Diameter	125+/-2	um
Jacket Diameter	0.9	mm
Length	1000+100/-50	mm
Color	Blue	-
Flammability	UL1581	-
Standard Connector Type	SC	-

7. Ordering Information**OL5172M - _ _****OPTICAL CONNECTOR**

_ _ : SC *

LC:LC

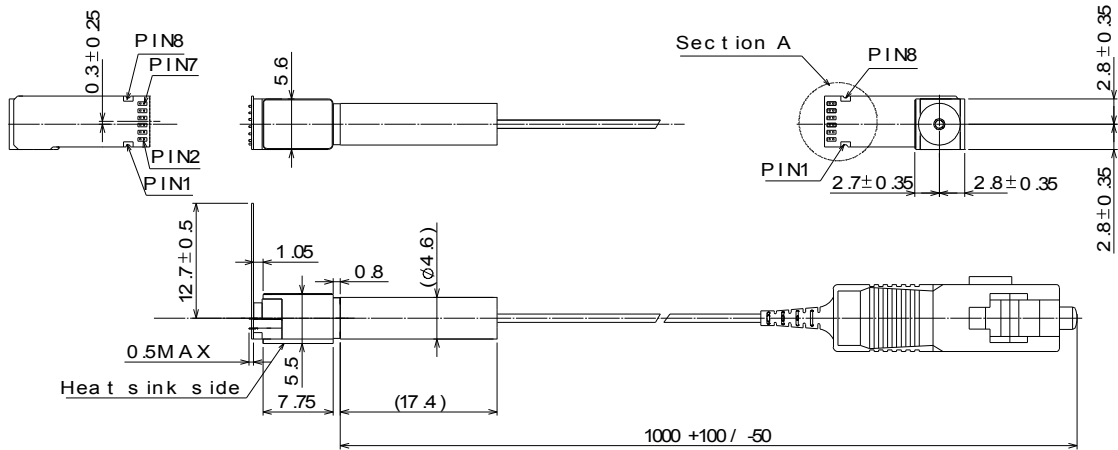
* : STANDARD PRODUCT: NO NEED TO INDICATE

8. OUTLINE DRAWING

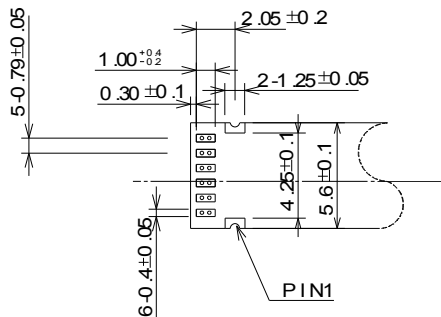
All dimensions in millimeters

8.1 Module

Note: Tolerances unless noted +/-0.15mm



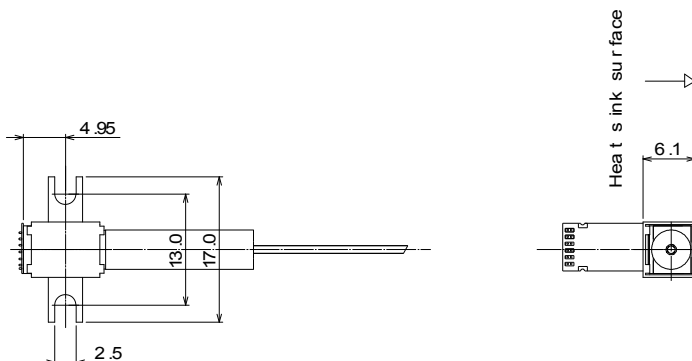
Detail of Section A




PIN No.	Description
1	TEC-
2	TEC+
3	Signal ground
4	Modulator anode
5	Signal ground
6	Photodiode anode
7	Laser anode
8	Thermister

8.2 Bracket(Optional)

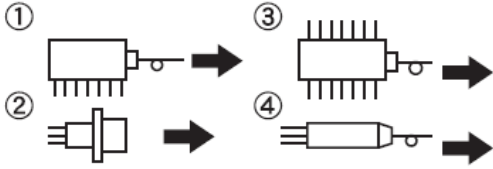
Thermal paste or thermal sheet is recommended between module PKG and Heatsink surface.



9. Safety Information on this product



PEAK OUTPUT POWER 500mW
WAVELENGTH 900~1700nm
CLASS 3B LASER PRODUCT



AVOID EXPOSURE
 Laser invisible radiation is emitted from the aperture.

Complies with CFR1040.10 and IEC60825-1

Warning Laser Beam	A laser beam is emitted from this laser diode during operation. The invisible or visible laser beam, directly or indirectly, may cause injury to the eye or loss of eyesight. Do not look directly into the laser beam. Avoid exposure to the laser beam, any reflected or collimated beam.
Caution GaAs Product	The product contains gallium arsenide, GaAs. GaAs vapor and powder are hazardous to human health if inhaled, ingested or swallowed. Do not destroy or burn the product. Do not crush or chemically dissolve the product. Do not put the product in the mouth. Observe related laws and company regulations when discarding this product. The product should be excluded from general industrial waste or household garbage.
Caution Optical Fiber	A glass-fiber is attached on the product. Handle with care. When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.

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