OKI Electronic Components

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OL3951W

1310 nm SMT Bidirectional Transmission Module with Single Mode Fiber

GENERAL DESCRIPTION

The OL3901W surface mount type PLC module has a function of a 1.3µm bidirectional transmission. The PLC module consists of a spot-size converted laser diode (SSC-LD: InGaAsP/InP), a side-illuminated mirror photo diode (MPD:InGaAsP), a monitor MPD, a preamplifier, a receptacle type single mode fiber, a planar lightwave circuit (PLC) and a silicon substrate.

ABSOLUTE MAXIMUM RATINGS

(Ta = 25°C, unless otherwise noted)

Parameter	Symbol	Rating	Unit
Fiber Output Power	PF	2	mW
Laser Diode Reverse Voltage	VR (LD)	2	V
Photo Diode Forward Current	IF	10	mA
Photo Diode Forward Voltage	VR (PD)	15	V
Operating Temperature	Ta	–30 to +75	°C
Storage Temperature	Tstg	–40 to +85	°C
Lead Soldering Temperature (10 sec)	Tsid	260	°C

OPTICAL AND ELECTRICAL CHARACTERISTICS

(Ta = –30 to 75°C, unless otherwise specified)

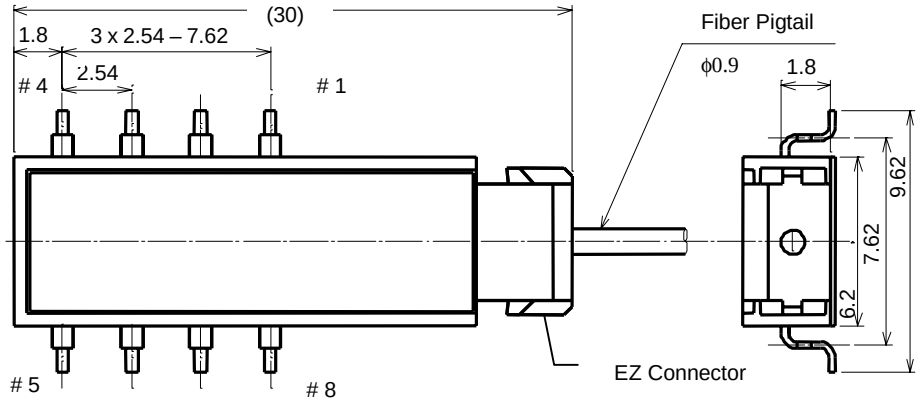
Parameter			Conditions	Min	Typ	Max	Unit
Transmitter	Fiber Output Power	Pf	CW	1.25			mW
	Threshold Current	Ith	—			35	mA
	Center Wavelength	λc	Pf = 1.25 mW, RMS	1270		1350	nm
	Spectral Width	Δλ	Pf = 1.25 mW, RMS(σ)		3	8	nm
	LD Forward Voltage	Vop	Pf = 1.25 mW			1.45	V
	LD Forward Current	Iop	Pf = 1.25 mW			80	mA
	Current above threshold	Ip	Pf = 1.25 mW, Ip = Iop-Ith			45	mA
	Rise and Fall times	tr, tf	Pf = 1.25 mW			1	ns
	Monitor Current	Im	Pf = 1.25 mW		100		μA
	Monitor Dark Current	Id	V_r = 1.6 V, Ta = 25°C			22	nA
	Tracking Error	Er	Im = const. Pf = 1.25 mW,Ta =25°C	-1.0		1.0	dB
Receiver	Power Supply Voltage	V_{cc}	—	3.0	3.3	3.6	V
	Responsivity	Re	Pin = -21 dBm, V_{cc} = 3.3 V	11			kV/W
	Output Bias Voltage	V_b	Pin = 0 W, V_{cc} = 3.3 ±0.01V, Tc = 25°C,	1.66	1.69	1.72	V
	Trans impedance	Zt	—		92		dBΩ
	Rise and Fall times	tr, tf	Pin = -21 dBm		8	10	ns
			Pin = -14 dBm		8	10	ns
	Receive Wavelength	λr	Pin = -21 dBm	1270		1350	nm
	Isoration Loss	Iso	λ = 1530 to 1570 nm λ = 1640 to 1670 nm	25			dB
Optical Return Loss		ORL	λ = 1270 to 1350 nm	(18)	20		dB

CONNECTOR AND FIBER SPECIFICATIONS

Parameter	Specifications	Unit
Type	SM	—
Mode Field Diameter	9 ±1	μm
Code Diameter	0.9	mm
Bending Radius	20 (min)	mm
Length	Options	—
Connector	FC, SC, MUJ, etc.	—
Color	Yellow	—

OUTLINE DRAWING

All dimensions in millimeters
Package No. (Unit: mm)



Pin Connection

No.	Function
1	LD Anode/COM
2	V_{CC}
3	GND
4	V_{OUT}
5	Monitor PD Cathode
6	Monitor PD Anode
7	LD Cathode
8	LD Anode

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