

**G.983.1 Option2 FSAN OLT
Transceiver Specifications**

Part Number : OAT1521S-OLT2-V2-B

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ITU-T G.983.1 Option2 Class B acceptable

Modification History

Rev.	Date	Originator	Comment
DRAFT0.1	Dec. 19 , 2001	H. OKADA	

1. Specifications

Table 1.1 Specifications

Parameter	Unit	Specifications
Bit rate	Mbit/s	Tx:622.08 , Rx:155.52
Transmission mode	—	Tx: continuous, Rx: burst
Transfer code	—	NRZ
Bi-directional transmission	—	1-fibre WDM
Transmission distance	km	20
Laser diode	—	1.55um DFB-LD
photo detector	—	PIN-PD
Operating temperature range	°C	0 ~ 70
Operating humidity	%	5 ~ 90
Fiber/Connector type	—	Single mode fiber (10/125nm) / PC polished SC connector
Power supply voltage	V	+3.3 +/-5%
Power consumption	W	1.2 (typ.) , 1.4(max.)
Dimension	mm	40 × 60 × 8.5

Table 1.2 Optical Characteristics (over operating temperature and lifetime)

Parameter	Unit	Specifications
Operating wavelength	nm	Tx:1480 - 1580 / Rx:1260 - 1360
Mask of the transmitter eye diagram		ITU-T G.983 Downstream
Maximum reflectance of equipment, measured at transmitter wavelength	dB	—
Mean launched power range	dBm	SOL -1.5 ~ +4.0 EOL -2.0 ~ +4.0
Minimum extinction ratio	dB	10
Tolerance to the transmitter incident light power	dB	more than -15
Launched optical power w/o input to the transmitter	dBm	—
Maximum spectral width	nm	1 (@-20dB)
Side mode suppression ratio	dB	more than 30
Jitter transfer		—
Jitter generation in 1.3kHz bandwidth	UIpp	—
Maximum reflectance of equipment, measured at receiver wavelength	dB	less than -20
Bit error ratio	—	less than 10 ⁻¹⁰
Minimum sensitivity	dBm	SOL -30.5 EOL -30.0
Minimum overload	dBm	SOL -7.5 EOL -8.0
Consecutive identical digit immunity	—	more than 72
Jitter tolerance	—	—
Tolerance to the reflected optical power	dB	less than 10

Table 1.3 Absolute maximum ratings

Parameter	Symbol	Conditions	Ratings	Unit
Power supply voltage	V _{cc}	Ta = 25°C	0 to +4.6	V
Input voltage	V _i		0 to V _{cc}	V
Maximum output current	I _o		30	mA
Storage temperature	T _{stg}		-40 to +85	°C
Soldering temperature/time		Ta = 25°C	250/10	°C/sec
Maximum tension of fiber			500	g
Minimum bending radius			30	mm

2. Block diagram

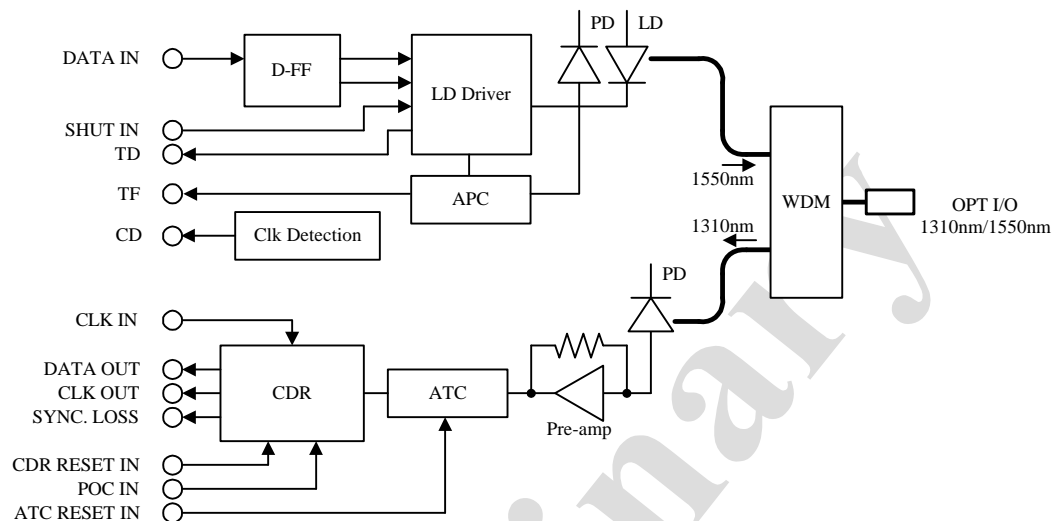


Fig. 2.1 Block diagram

3. Pin description

Table 3.1 Pin descriptions

No.	I/O	Symbol	Level	Logic	Functionality
01		SVCC			Transmitter power supply (+3.3V)
02		GND			Ground
03	I	SDATAP	LVPECL	P	Data input (pos) :622.08Mbps
04	I	SDATAN	LVPECL		Data input (neg) :622.08Mbps
05	I	BCLKP	LVPECL	P	CDR Clock input (pos) :155.52Mbps
06	I	BCLKN	LVPECL		CDR Clock input (neg) :155.52Mbps
07		GND			Ground
08	I	SHUT	LVTTL	P	Optical output shut down
09	O	CD	LVTTL	P	Clock down alarm (All'L')
10	O	TD	LVTTL	P	Transmitter Degraded alarm
11	O	TF	LVTTL	P	Transmitter Failure alarm
12		GND			Ground
13		GND			Ground
14	O	ALM	LVTTL	P	Sync. out alarm
15		GND			Ground
16	I	POC	LVTTL	N	Power on clear
17	I	BRSP	LVPECL	N	CDR reset (pos)
18	I	BRSN	LVPECL		CDR reset (neg)
19		GND			Ground
20	O	RCLKP	LVPECL	P	Clock output (pos)
21	O	RCLKN	LVPECL		Clock output (neg)
22		GND			Ground
23	O	RDATAP	LVPECL	P	Data output (pos)
24	O	RDATAN	LVPECL		Data output (neg)
25		GND			Ground
26		BVCC			Power supply for CDR (+3.3V)
27		GND			Ground
28		GND			Ground
29	I	RSN	LVPECL	N	ATC reset (neg)
30	I	RSP	LVPECL		ATC reset (pos)
31		GND			Ground
32		RVCC			Power supply for ATC (+3.3V)

4. Outline

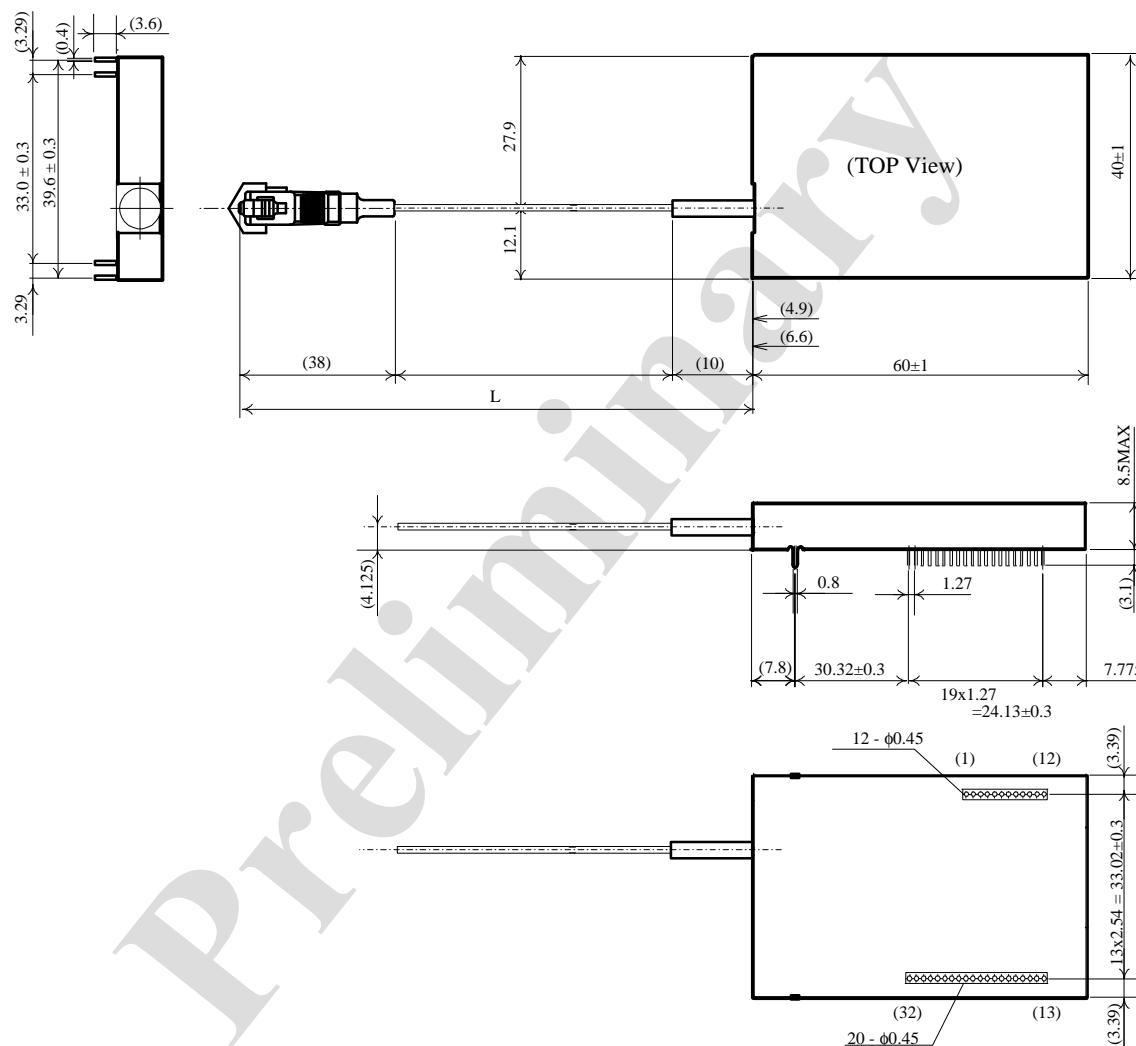


Fig 4.1 Package Outline

5. Precautions for handling

The circuits of these modules operate at very small signal. In order to avoid the degradation of the optical sensitivity due to external noise, the bottom pattern of these modules on the PCB should be ground pattern with low impedance.

Do not mount/pattern device/circuits which generate high frequency noise close to the module.

In order to operate the module stable against the power noise, install the power supply noise reduction circuits.

The impedance between the power and ground pattern of the power circuit should be as low as possible.

The elements around the module should be mounted close to the pins of the module.

If an optical power exceeding the absolute maximum ratings is fed to the module, the optical receiver may be damaged. Set the optical input power appropriately when in use of these modules.

6. Qualification and Reliability

To help ensure high product reliability and customer satisfaction, OKI is committed to an intensive quality program that starts in the design phase and proceeds through the manufacturing process.

Optical transceiver modules are qualified to OKI internal standards using MIL-STD-883 test methods and procedures and using sample techniques consistent with Telcordia requirements.

This qualification program fully meets the intent of Telcordia reliability practices GR-468-CORE.

7. Laser Safety

All version of transceiver are Class 1 Laser products FDA complies with 21 CFR 1040.10 and 1040.11 requirements.

Also, all versions are Class 1 Laser products pre IEC 825-1.