OKI Electronic Components This version: Jan. 2002

OAT1521S-OLT-B, OAT1521S-ONU-B

ATM-PON Optical Module

APPLICATION

• Optical transceiver for ATM-PON application (ITU-T Rec. G.983)

FEATURES

• 1-fiber bi-directional transmission by incorporated WDM
• Burst signal transmission
• +3.3V single power supply

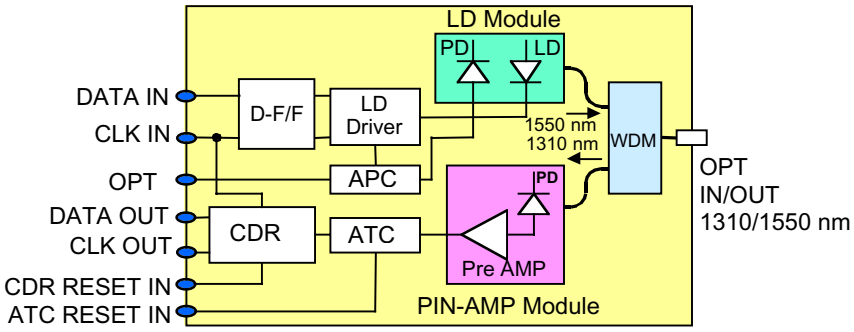
SPECIFICATION

[Transmitter]

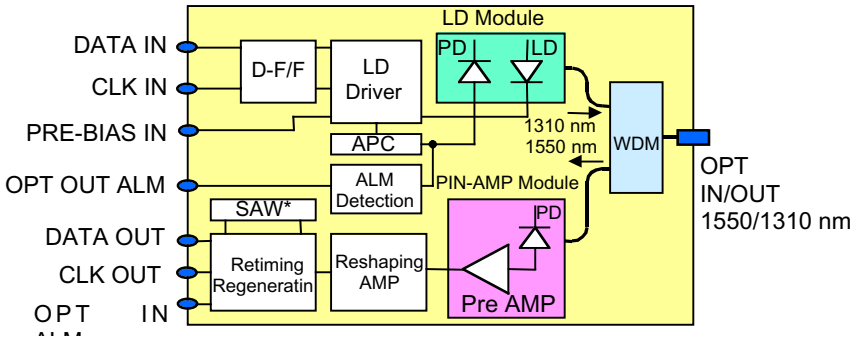
	OAT1521S-OLT-B	OAT1521S-ONU-B
ITU-T Rec. G983	Class B	Class B
Bit rate (Mb/s)	155.520	
Transmission distance (km)	≤ 20	
Transmission mode	Tx: continuous, Rx: burst	Tx: burst, Rx: continuous
Optical wavelength (nm)	Tx: 1480 to 1580 Rx: 1260 to 1360	Tx: 1260 to 1360 Rx: 1480 to 1580
Maximum reflectance of equipment, measured at transmitter wavelength (dB)		≤ –6
Mean launched power range (dBm)	–4 to+2	–4 to+2
Minimum extinction ratio (dB)	≥ 10	≥ 25
Tolerance to the transmitter incident light power (dB)	≥–15	
Launched optical power w/o input to the transmitter (dBm)		≤ –43
Maximum spectral width (nm)	≤ 1 (@ –20 dB)	≤ 5.8 (@ rms)
Side mode suppression ratio (dB)	≥ 30	
Maximum reflectance of equipment, measured at receiver wavelength (dB)	≤ –20	
Received optical power [BER = 10^{-10}] (dBm)	–30 to–8	–30 to–8
Consecutive identical digit immunity	≥ 72	
Tolerance to the reflected optical power (dB)	≤ 10	
Power consumption (W)	1.2	1.0
Laser diode	1.55 μm DFB-LD	1.31 μm FP-LD
Photo diode	PIN-PD	
Operating temperature (°C)	0 to 70	–40to 85
Dimension (mm)	40 ×60 × 8.5	

BLOCK DIAGRAM

[OLT Module]



[ONU Module]

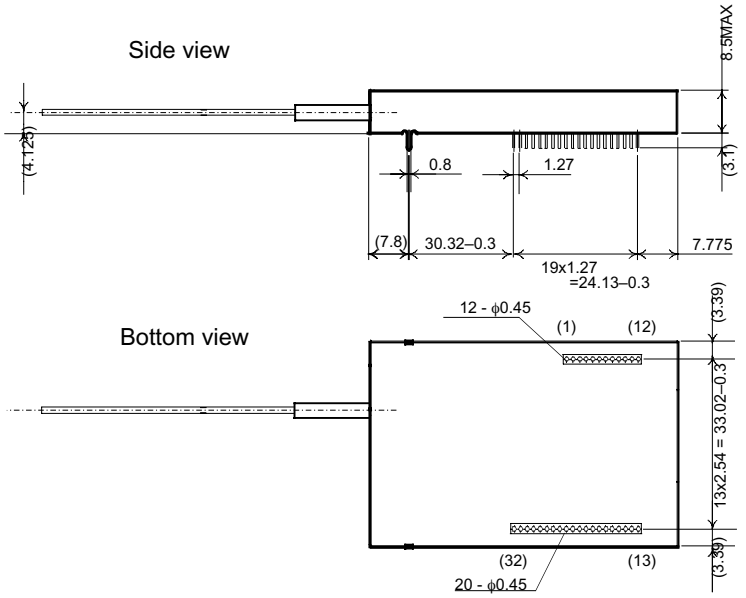


SAW: Surface Acoustic Wave Filter

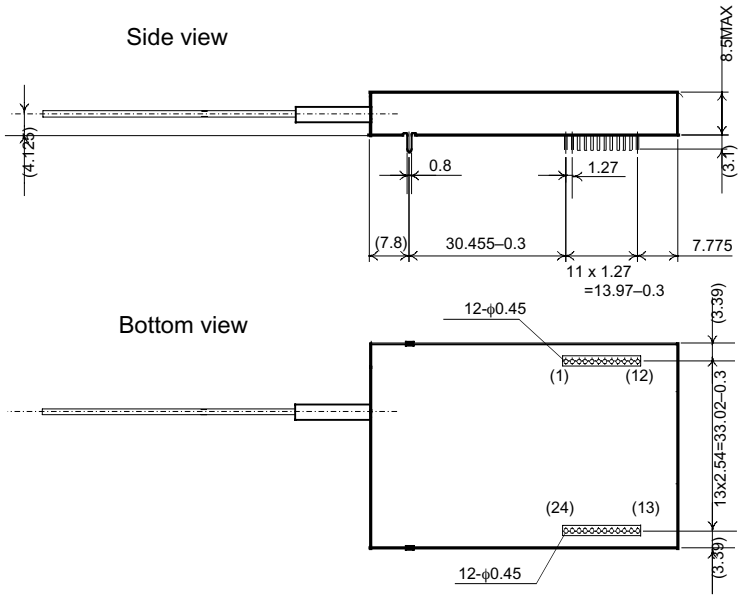
PACKAGE OUTLINE

(Unit: mm)

[OLT Module]



[ONU Module]



PIN DESCRIPTIONS

[OLT Module]

No.	Symbol	Functionality
01	SV_{CC}	Transmitter power supply (SV_{CC} = +3.3 V)
02	GND	Ground
03	SDATAP	Positive data input <LVPECL>
04	SDATAN	Negative data input <LVPECL>
05	SCLKP	Positive clock input <LVPECL>
06	SCLKN	Negative clock input <LVPECL>
07	GND	Ground
08	SHUT	Optical output shut down <LVTTL>
09	CD	Clock down alarm <LVTTL>
10	TD	Transmitter degraded alarm <LVTTL>
11	TF	Transmitter failure alarm <LVTTL>
12	GND	Ground
13	GND	Ground
14	ALM	Sync. out alarm <LVTTL>
15	GND	Ground
16	POC	Power on clear <LVTTL>
17	BRSP	Positive CDR reset <LVPECL>
18	BRSN	Negative CDR reset <LVPECL>
19	GND	Ground
20	RCLKP	Positive clock output <LVPECL>
21	RCLKN	Negative clock output <LVPECL>
22	GND	Ground
23	RDATAP	Positive data output <LVPECL>
24	RDATAN	Negative data output <LVPECL>
25	GND	Ground
26	BV_{CC}	Power supply for CDR (BV_{CC} = +3.3 V)
27	GND	Ground
28	GND	Ground
29	RSN	Negative ATC reset <LVPECL>
30	RSP	Positive ATC reset <LVPECL>
31	GND	Ground
32	RV_{CC}	Power supply for ATC (RV_{CC} = +3.3 V)

[ONU Module]

No	Symbol	Functionality
01	SV_{CC}	Transmitter power supply (SV_{CC} = +3.3 V)
02	GND	Ground
03	SHUT	Optical output shut down <LVTTL>
04	TF	Transmitter failure alarm <LVTTL>
05	GND	Ground
06	BIASP	Positive Pre-bias <LVPECL>
07	BIASN	Negative Pre-bias <LVPECL>
08	GND	Ground
09	SDATAP	Positive data input <LVPECL>
10	SDATAN	Negative data input <LVPECL>
11	SCLKP	Positive clock input <LVPECL>
12	SCLKN	Negative clock input <LVPECL>
13	GND	Ground
14	LOS	Loss of signal alarm <LVTTL>
15	GND	Ground
16	RDATAN	Negative data output <LVPECL>
17	RDATAP	Positive data output <LVPECL>
18	GND	Ground
19	RCLKN	Negative clock output <LVPECL>
20	RCLKP	Positive clock output <LVPECL>
21	GND	Ground
22	GND	Ground
23	RV_{CC1}	Receiver power supply (RV_{CC1} = +3.3 V)

NOTICE

1. The information contained herein can change without notice owing to product and/or technical improvements. Before using the product, please make sure that the information being referred to is up-to-date.

2. The outline of action and examples for application circuits described herein have been chosen as an explanation for the standard action and performance of the product. When planning to use the product, please ensure that the external conditions are reflected in the actual circuit, assembly, and program designs.

3. When designing your product, please use our product below the specified maximum ratings and within the specified operating ranges including, but not limited to, operating voltage, power dissipation, and operating temperature.

4. Oki assumes no responsibility or liability whatsoever for any failure or unusual or unexpected operation resulting from misuse, neglect, improper installation, repair, alteration or accident, improper handling, or unusual physical or electrical stress including, but not limited to, exposure to parameters beyond the specified maximum ratings or operation outside the specified operating range.

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9. Qualification and Reliability
   To help ensure high product reliability and customer satisfaction, OKI is committed to an in tensive 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.

10. 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 .