

FEATURES

GENERAL

- **FULL COMPLIANCE WITH ITU-T G.983.1 CLASS B (OD-B1511-ONUB) and CLASS C (OD-B1511-ONUC) for SINGLE FIBER BI-DIRECTIONAL TRANSMISSION**
- **APPLIED to ONU(OPTICAL NETWORK UNIT) on ATM-PON SYSTEM**
- **INTEGRATED 1300/1500 nm WDM FUNCTION by EMPLOYING PLC (PLANAR LIGHTWAVE CIRCUIT)**
- **SINGLE POWER SUPPLY VOLTAGE of +3.3 V**

TRANSMITTER PART

- 155.52 Mb/s BURST-MODE TRANSMITTER OPERATING at WAVELENGTH of 1300 nm
- INSTANTANEOUS OPERATION FROM THE 1st BIT of BURST CELL BY FEED-FORWARD APC CIRCUIT EMPLOYING ROM
- LOW RETURN LOSS of LESS THAN -12 dB at 1300 nm
- LASER BIAS CURRENT CONTROL IN BURST-BY-BURST (BIAS CNT)
- OPTICAL OUTPUT DEGRADE DETECTION (TX ALM)
- SHUT DOWN FUNCTION (SHUTDOWN)

RECEIVER PART

- **155.52 Mb/s CONTINUOUS-MODE RECEIVER OPERATING AT WAVELENGTH OF 1500 nm**
- **CLOCK AND DATA RECOVERY FUNCTION BY PLL CIRCUIT**
- **OPTICAL INPUT LOSS DETECTION (RX ALM)**

BLOCK DIAGRAM

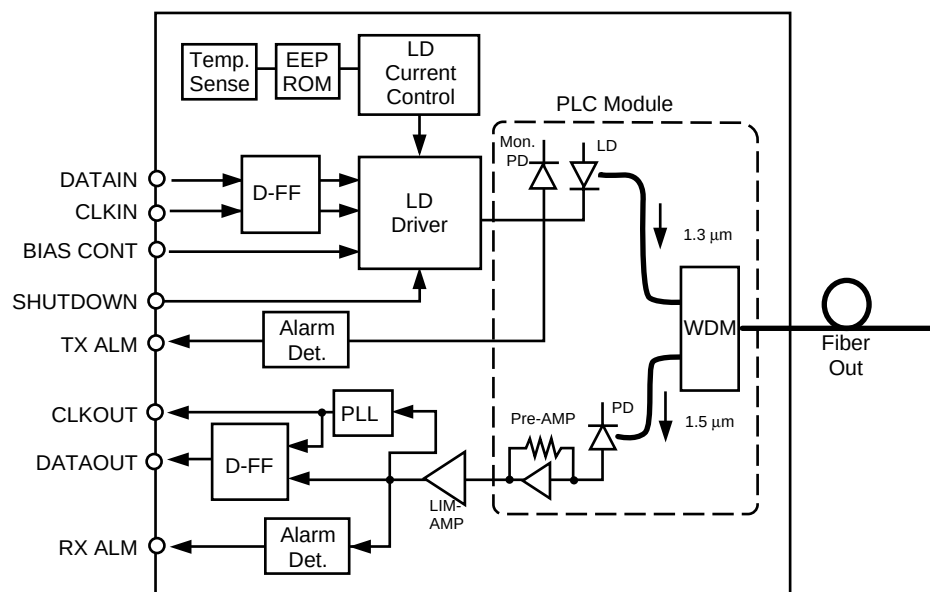


Figure 1

OD-B1511-ONUB, OD-B1511-ONUC

ABSOLUTE MAXIMUM RATINGS¹

(TC = 25°C, unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	MIN	MAX
V _{CC}	Power Supply Voltage	V	-0.3	+4.0
T _{STG}	Storage Temperature	°C	-40	+85
P _f	Input Optical Power	dBm	-	0
T _{SOL}	Lead Soldering Temperature	°C/sec	-	260/10
Br _{pf}	Bending Radius of Pigtail Fiber	mm	30	-
T _{fp}	Tensile Force on Pigtail ²	N	-	2
V _{IN}	Signal Input Voltage	V	-0.3	V _{CC} +0.3

Notes:

1. Operation in excess of any one of these parameters may result in permanent damage.
2. = 200 gf

RECOMMENDED OPERATING CONDITIONS

SYMBOL	PARAMETER	UNITS	MIN	TYP	MAX	REMARKS
T _A	Ambient Temperature	°C	-40	-	+85	OD-B1511-ONUB
			-40	-	+75	OD-B1511-ONUC
HA	Ambient Humidity	%	5	-	95	
V _{CC}	Power Supply Voltage	V	+3.135	+3.300	+3.465	
T _A	Power Supply Current	mA	-	-	300	Not include LVPECL termination current
PSN	Power Supply Noise	mVpp	-	-	100	Noise frequency at 100 Hz to 1 MHz

OPTICAL INTERFACE

TRANSMITTER SECTION

ITEMS	UNIT	SPECIFICATIONS		REMARKS
		OD-B1511-ONUB	OD-B1511-ONUC	
Operating wavelength	nm	1260 to 1360		
Normal bit rate	Mb/s	155.52		
Line code	-	Scrambled NRZ (burst-mode)		
Photo diode	-	FP-LD		
Mean output power	dBm	-4 to +2	-2 to +4	
Optical output waveform	-	Mask spec		Figure 2 (after passing through a 4th-order Thomson filter; f _c = 0.75 x 155.52 MHz)
Extinction ratio	dB	more than 10		
Spectral width (RMS)	nm	less than 5.8		under modulation condition at 2 ²³ -1 pattern
Launched optical power without input to the transmitter	dBm	less than -40	less than -43	
Consecutive identical digit immunity	bit	more than 72		
Tolerance to the transmitter incident light power	dB	more than -15		
Maximum reflectance	dB	less than -12		measured at wavelength of 1.3μm
Jitter Transfer	-	Mask spec		Figure 3
Jitter Tolerance	UI _{p-p}	less than 0.2		frequency range from 0.5 kHz to 1.3 MHz

OPTICAL INTERFACE

RECEIVER SECTION

ITEMS	UNIT	SPECIFICATIONS		REMARKS
		OD-B1511-ONUB	OD-B1511-ONUC	
Operating wavelength	nm	1480 to 1580		
Normal bit rate	Mb/s	155.52 +/-100ppm		
Line code	-	Scrambled NRZ (continuous-mode)		
Photo diode	-	PIN-PD		
Minimum sensitivity	dBm	less than -30	less than -33	Bit error rate is 10 ⁻¹⁰ at 2 ²³ -1 pattern
Maximum overload	dBm	more than -8	more than -11	Bit error rate is 10 ⁻¹⁰ at 2 ²³ -1 pattern
Consecutive identical digit immunity	bit	more than 72		
Tolerance to the reflected optical power	dB	less than 10		
Maximum reflectance	dB	less than -20		measured at wavelength of 1.5μm
Jitter Transfer	-	Mask spec		Figure 3
Jitter Tolerance	Ulp-p	Mask spec		Figure 4

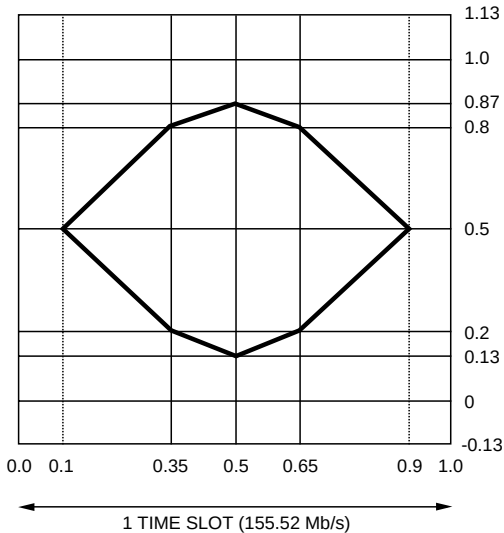


FIGURE 2. Mask of eye diagram

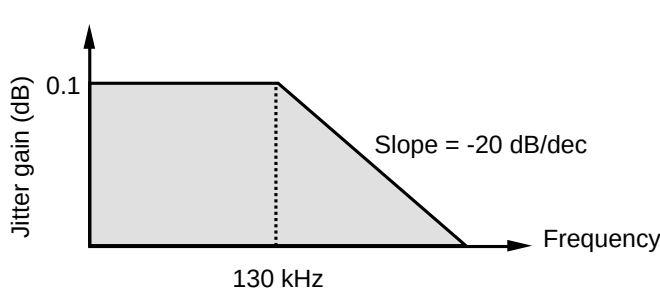


FIGURE 3. Jitter transfer mask

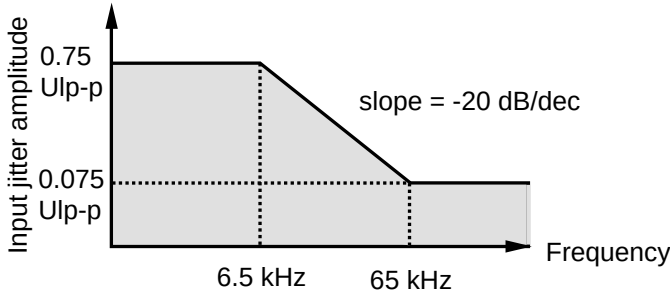
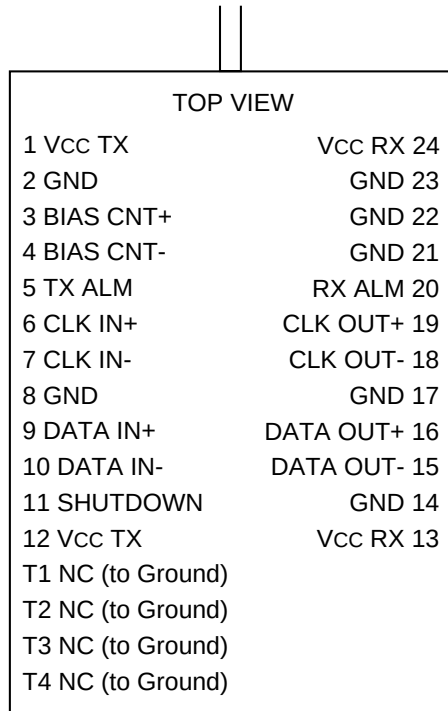
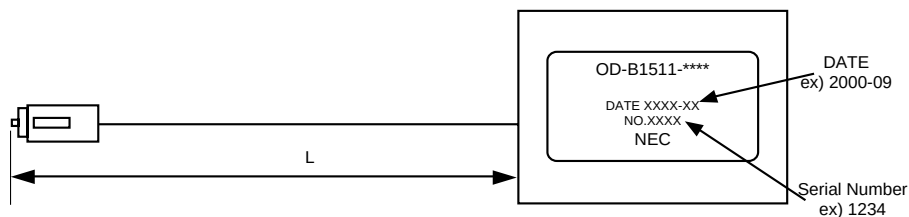
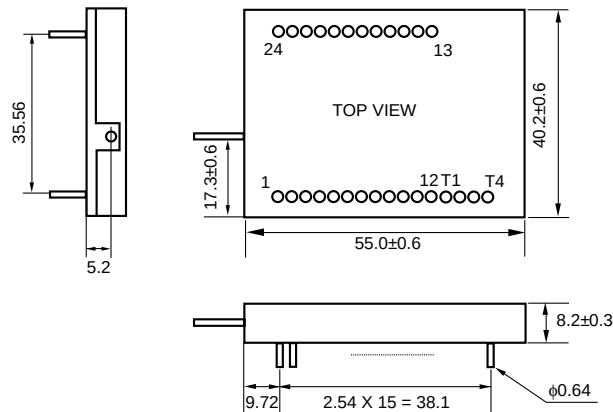


FIGURE 4. Jitter tolerance mask

PIN CONNECTIONS



OUTLINE DIMENSIONS (Units in mm)



Note: Default pigtail fiber length (L) is 540 (+0/-40) mm.
Default optical connector is SC type.