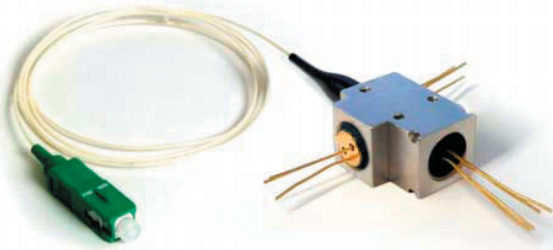


OTP-345V1-PF-622-SCA-D4



Features

- Low Cost 1310nm FP Design, 1490nm Digital Receiver, and 1555nm Analog Receiver
- High Isolation
- Multiple TIA Version for 155, 622, 1250 Mbps Applications
- 1 GHz Video Receiver Bandwidth
- Compliant to FSAN Class B ITU-T G.983.3 Specification
- Support ITR-B1F-AF4-1

Absolute Maximum Ratings

Parameter	Min	Typical	Max	Unit
Operating Temperature	-40	-	85	°C
Storage Temperature	-40	-	85	°C

Module Characteristics ^{Note 1}

Parameter	Min	Typical	Max	Unit
1555nm Video to 1490nm Rx isolation ^(a)	32	-	-	dB
1490nm data to 1555nm Rx isolation ^(b)	34	-	-	dB
1310nm external to 1555nm Video isolation	22	-	-	dB
1310nm external to 1490nm data isolation	17	-	-	dB
1310nm Tx to 1490nm Rx crosstalk	-	-	-47	dB
1310nm Tx to 1555nm Rx crosstalk	-	-	-47	dB
Back Reflection @ 1310nm	-	-	-6	dB
Back Reflection @ 1555nm	-	-	-32	dB
Back Reflection @ 1490nm	-	-	-20	dB

Note 1) All data is specified at EOL and across the operating temperature range.

(a) 1550nm to 1560nm isolation at digital receiver

(b) 1480nm to 1500nm isolation at video receiver

Transmitter Characteristics ^{Note 1}

Parameter	Symbol	Min	Typical	Max	Unit
Wavelength	λ	1260	-	1360	nm
Spectral Width	$\Delta\lambda$	-	2	3	nm
Typical 1/2 P _{peak} set point @25°C	P _{set}	-	1.5	-	dBm
Tracking Error	TE	-3	-	3	dB
1/2 P _{peak} over temp	1/2P _{peak}	0.5	-	3.5	dBm
Bias Current (=I _{th} +1/2I _{mod})	I _{bias,EOL}	-	-	75	mA
Threshold Current	I _{th}	2	-	50	mA
Modulation Current ^(e) (@ P _{set})	I _{mod}	10	-	60	mA
PD Monitor Current (@ P _{set}) @25°C	I _{PD,mon}	100	-	1500	μA
PD Monitor Current (@ P _{set}) -40°C and 85°C	I _{PD,mon}	100	-	1300	μA
Forward Voltage	V _f	-	1.2	1.7	Volts
Rise/Fall Time ^(c)	t _r /t _f	-	-	0.5	ns
PD Monitor Dark Current	I _D	-	-	1	μA
PD Monitor Capacitance ^(d)	C _{PD}	-	10	15	pF
Quantum Efficiency	QE	0.045	-	0.3	mW/mA

Note 1) All data is specified at EOL and across the operating temperature range.

(c) 10% to 90%

(d) VRD = 10V

(e) greater modulation current can be used to increase output power

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Digital Receiver Electrical Characteristics (622 Mbps)

Parameter	Symbol	Min	Typical	Max	Unit
Detection Wavelength	λ	1480	-	1500	nm
Gain, Differential	G	12	-	-	mV/ μ W
Sensitivity	-	-	-	-29	dBm
Optical Input Overload	P_{in}	-4	-	-	dBm
Optical Input Power Damage Threshold		3	-	-	dBm
Supply Voltage	V_{CC}	3.135	3.3	3.465	V
Supply Current ^(a)	I_{CC}	20	35	50	mA
High Frequency -3 dB point ^(b)	$f_{-3dB(h)}$	400	520	600	MHz
Single-ended Output Voltage (p-p) @100mA p-p	$V_{o(se)(p-p)}$	-	-	450	mV
Single-ended Output Resistance	$R_{o(se)}$	40	50	62	Ohm
Small Signal Transresistance, differential	R_{tr}	7	-	25	K Ω
Polarization Dependent Loss	PDL	-	-	0.5	dB

(a) AC coupled; RL = 50 Ohm

(b) $C_i = 0.7$ pF

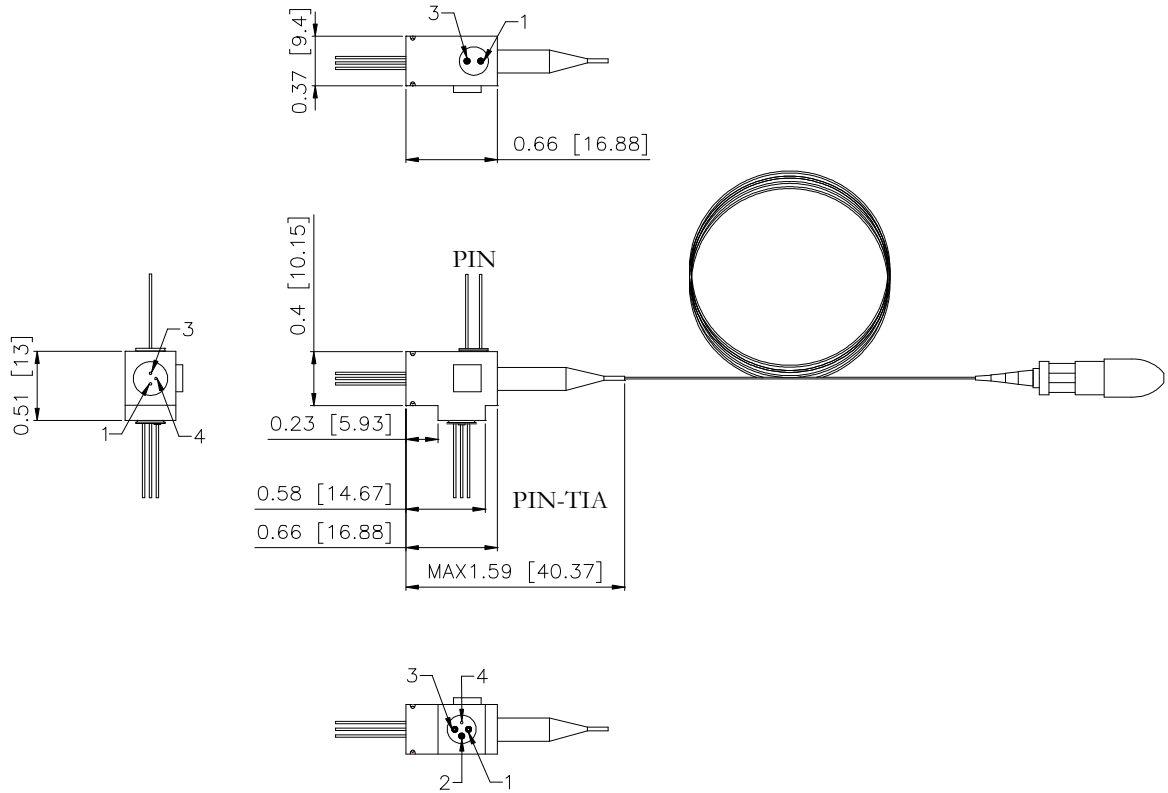
Analog Receiver Characteristics

Parameter	Symbol	Min	Typical	Max	Unit
Detection Wavelength	λ	1550	1555	1560	nm
Optical Input power Damage Threshold	P_{damage}	3	-	-	dBm
Responsivity	R	0.75	0.85	-	mA/mW
Bandwidth ^(a)	BW	1000	-	-	MHz
Dark Current at $V_r=5V$	I_d	-	2	50	nA
Capacitance at $V_r=5V$ and 1 MHz	C	-	0.6	1.5	pF
DSO		-	-	-70	dBc
DTB		-	-	-80	dBc
Polarization Dependent Loss	PDL	-	-	0.5	dB

(a) 0.5 dB measurement

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Outline Drawing



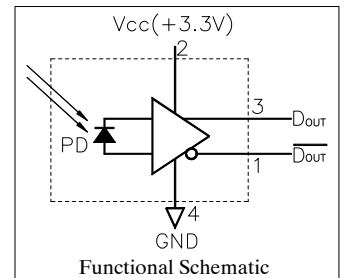
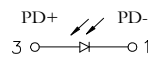
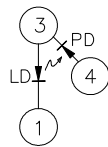
LD Pin Assignment

PIN Pin Assignment

PIN-TIA Pin Assignment

G Type

- Pin 1 : Laser Diode Cathode
- Pin 3 : Laser Anode and Monitor Diode Cathode
- Pin 4 : Monitor Diode Anode

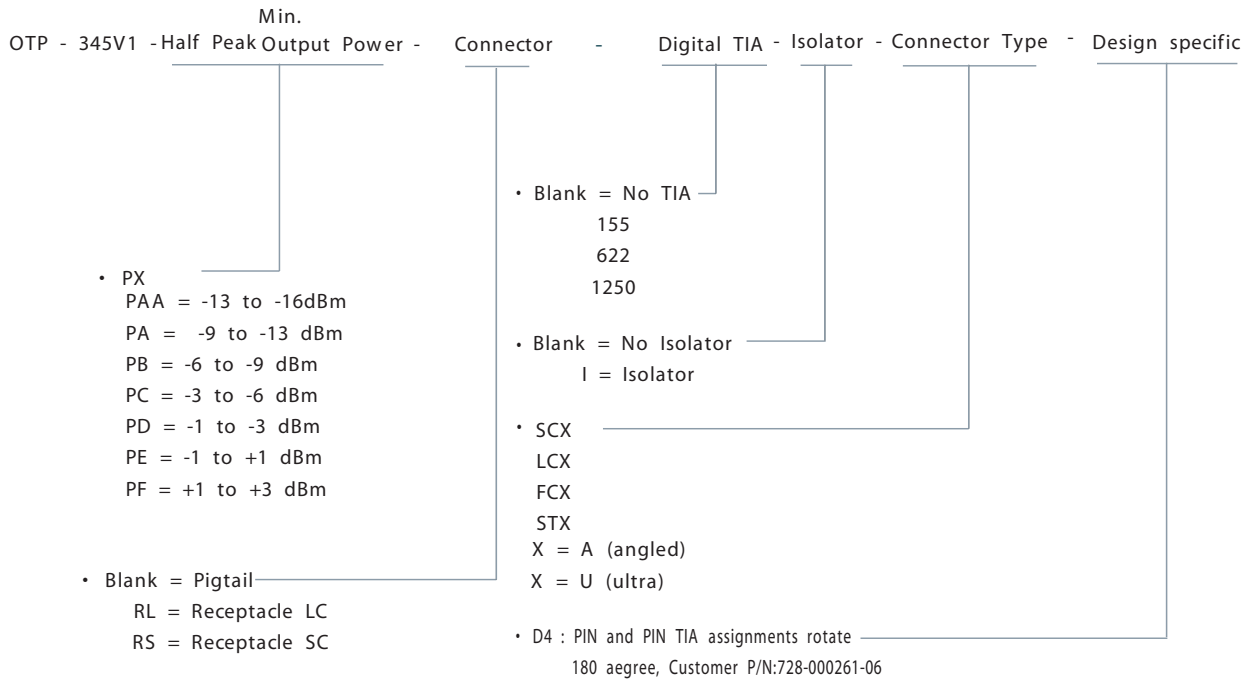


OTP-345V1-PF-622-SCA-D4

Ordering Information

Available Options:
OTP-345V1-PF-622-SCA-D4

Part Numbering Definition:



Warnings:

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.
Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

Legal Notes:

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