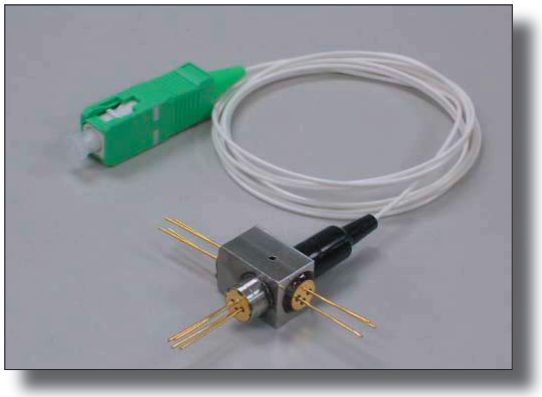
OTP-345V1-PE-1250-SCA-SD



Features

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

Absolute Maximum Ratings

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

Module Characteristics Note 1

Parameter	Min	Typical	Max	Unit
1555nm Video to 1490nm Rx Isolation (a)	30	-	-	dB
1490nm data to 1555nm Video Rx Isolation (b)	30	-	-	dB
1310nm Tx to 1490nm Rx Crosstalk	-	-	-47	dB
1310nm Tx to 1550nm 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	5	nm
Typical 1/2 P_{peak} set point @25°C	P_{set}	-1	0	1	dBm
Tracking Error	TE	-2	-	2	dB
1/2 P_{peak} Over Temperature	$1/2P_{peak}$	-3	-	3	dBm
Bias Current ($=I_{th}+1/2I_{mod}$)	$I_{bias,\ EOL}$	-	-	100	mA
Threshold Current	I_{th}	2	-	60	mA
Modulation Current @ P_{set} (c)	I_{mod}	-	-	80	mA
PD Monitor Current @ P_{set}	$I_{PD,mon}$	50	-	1500	µA
Forward Voltage	V_f	-	1.2	1.6	Volts
Rise/Fall Time (d)	t_r/t_f	-	-	0.5	ns
PD Monitor Dark Current	I_D	-	-	1	µA
PD Capacitance (e)	C_{PD}	-	10	15	pF

Note 1) All data is specified at EOL and across the operating temperature range.
(c) greater modulation current can be used to increase output power
(d) 10% to 90%
(e) Vr = 10V

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Digital Receiver Characteristics

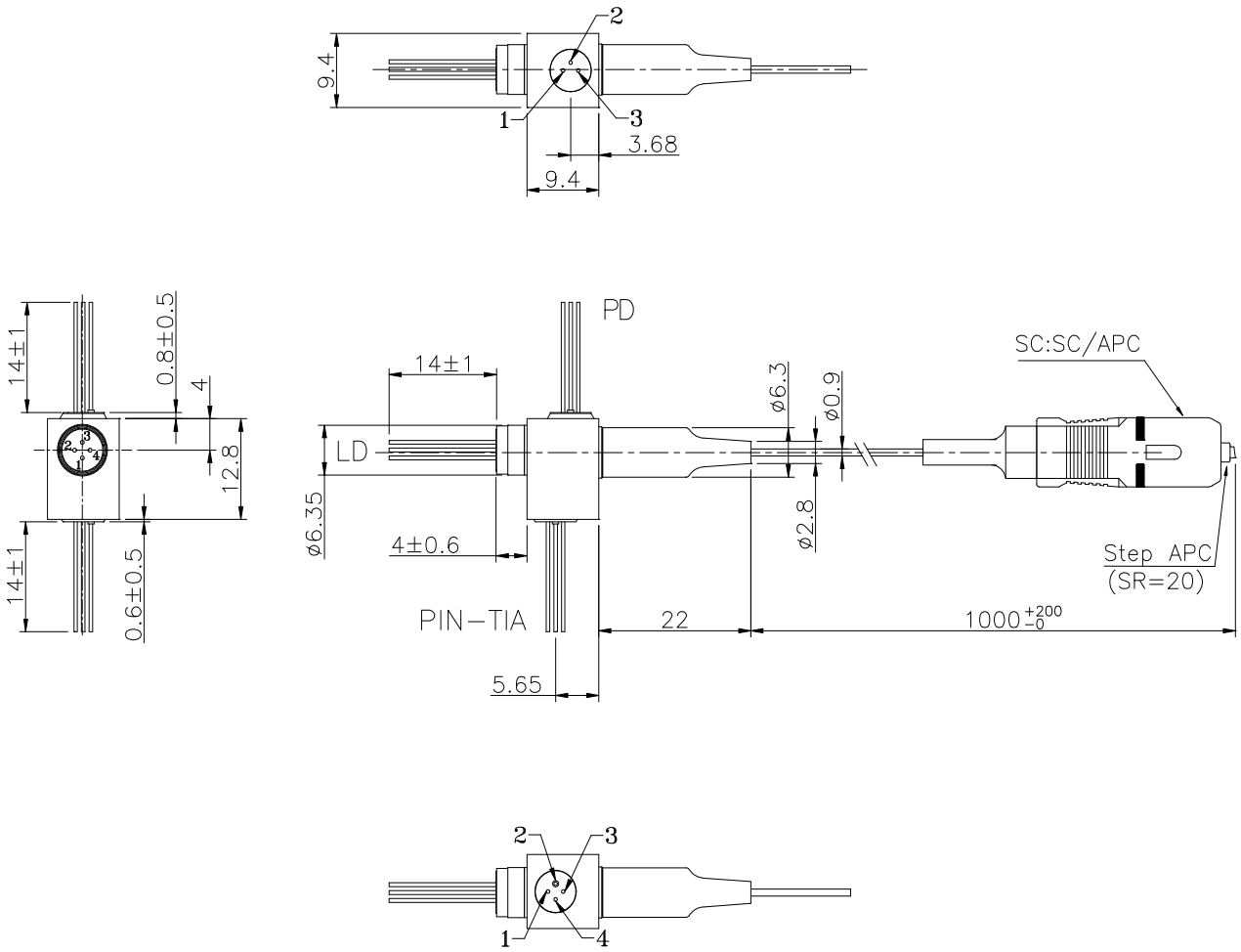
Parameter	Symbol	Min	Typical	Max	Unit
Detection Wavelength	λ	1480	-	1500	nm
Gain, Differential [a]	G	1.92	2.5	3.4	V/mW
Sensitivity [b]	Sen.	-	-24	-22	dBm
Optical Input Overload [b]	P_{in}	-3	-	-	dBm
Supply Voltage	V_{CC}	3.14	3.3	3.47	V
Supply Current (No load)	I_{CC}	-	26	50	mA
High Frequency -3 dB point	f_{-3dB}	700	920	1100	MHz
Single-ended Output Voltage (p-p) [c]	$V_{o(se)(p-p)}$	185	250	415	mV
Single-ended Output Resistance [d]	$R_{o(se)}$	48	50	52	Ohm
Rise/Fall Time [e]		-	-	300	ps

[a] AC coupled; RL=50ohm
[b] BER<10^{-12}@1.25Gbps, PRBS 2^7-1 Er=10dB
[c] AC coupled; RL=50ohm; Input current = 100μA(p-p)
[d] DC Test
[e] 10% to 90%

Analog Receiver Characteristics

Parameter	Symbol	Min	Typical	Max	Unit
Detection Wavelength	λ	1550	1555	1560	nm
Responsivity at V_r =5V, λ=1550nm	R	0.8	0.85	-	mA/mW
Bandwidth	BW	1	-	-	GHz
Dark Current at V_r=5V	I_d	-	2	50	nA
Capacitance at V_r =5V and 1MHz	C	-	0.6	1.5	pF
DSO		-	-70	-	dBc
DTB		-	-80	-	dBc

Outline Drawing Units in mm.

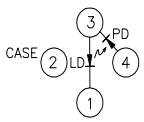


Pin Assignment

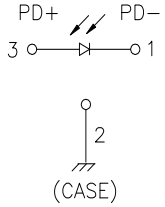
LD Pin Assignment

G Type

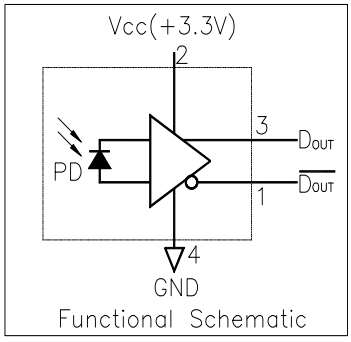
Pin 1 : Laser Diode Cathode
Pin 2 : Case Gnd
Pin 3 : Laser Anode and Monitor Diode Cathode
Pin 4 : Monitor Diode Anode



PD Pin Assignment



PIN-TIA Pin Assignment



Ordering Information

Available Options:
OTP-345V1-PE-1250-SCA-SD

OTP - 345V1 - Min. Half Peak Output Power - Connector - Digital TIA - Connector Type - Temperature Range - Design Specific

- PX
  - PAA = -16 to -13dBm
  - PA = -13 to -9 dBm
  - PB = -9 to -6 dBm
  - PC = -6 to -3 dBm
  - PD = -3 to -1 dBm
  - PE = -1 to +1 dBm
  - PF = +1 to +3 dBm

- Blank = Pigtail
  - RL = Receptacle LC
  - RS = Receptacle SC

- Blank = No TIA
  - 155
  - 622
  - 1250

- SCX
  - LCX
  - FCX
  - STX
  - X = A (angled)
  - X = U (ultra)

- Blank = industrial
  - C = Commercial (0 to 70)
  - R = Reduced industrial (-20 to 85)

- SD : Stanard products.

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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