Ratioplast
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Data sheet

RPopto-Clamp duplex 650nm Transceiver

Transceiver 650nm in duplex clamp system for 1mm POF*

1 General

The RPopto clamp is especially suitable for applications with standard 1mm plastic optical fiber (POF). Pre-mounted with a fast transceiver for 650nm wavelength with at the same time high optical power output, the RPopto clamp is a very good alternative solution in data transmission systems with plastic optical fibers.

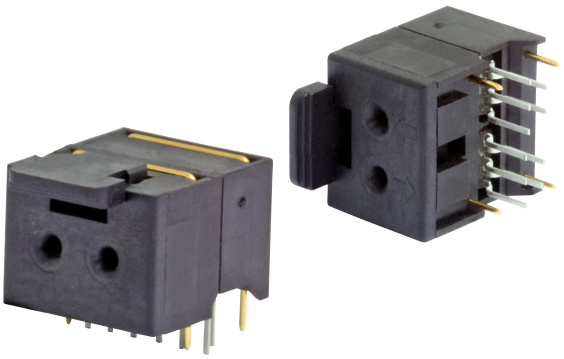


Fig. 1 RPopto clamp duplex

2 Applications

Due to the high possible data transmission rate, the good optical characteristics and the simple connection technology (without connectors) of POF, the RPopto clamp may be used in many applications:

- Optical networks
- Industrial electronics
- Power electronics
- Automotive
- Consumer electronics

3 Ordering information

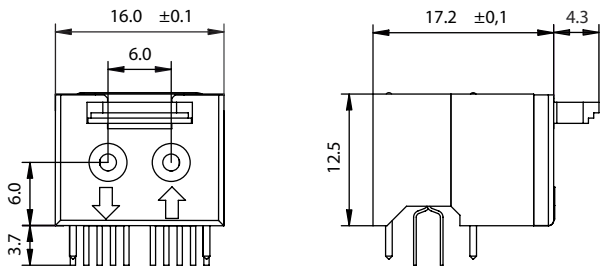
Item	*Product number*
650nm Transceiver	905TR650KD001

4 Dimensioned drawing

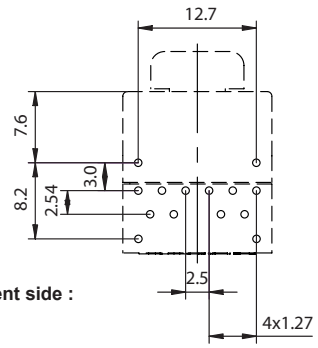
5 Features

- 650nm LED with integrated driver
- Integrated optical receiver
- 500µW Power output
- 3µW receiver sensitivity
- Compatible to IEEE802.3 Ethernet and Fast Ethernet
- CML (current mode logic) Interface
- Suitable for all plastic optical fiber cables with an outside diameter of 1.5mm and a fiber diameter of 1mm
- Conductive plastic housing
- Suitable for automatic assembly
- Reflow-/ wave soldering

Housing



Drilling plan for PCB



View Component side :

Drill diameter

PIN 1..10 = 0.8mm

Fixing pins = 1.2mm

Fig. 2 Dimensioned *drawing*

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6 Maximum ratings

Stresses beyond those listed under «Maximum Ratings» may cause permanent damage to the electronic component. The maximum ratings represent the stress limits of the electronic component. Operation of the electronic component at these values is not recommended over an extended period as this may adversely affect the reliability of the component.

Parameter	Symbol	Value	Unit
Operating voltage	VCC	0.5...4.5	V
Soldering temperature t ≤ 5s	Tsol	260	°C
Operating temperature	Topr	-40 to +85	°C
Storage temperature	Tstg	-40 to +100	°C

7 Technical data transmitter

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating voltage	VCC	3.0	3.3	3.6	V
Power consumption	Icc			36	mA
Data rate 8B/10B coding	Baud Rate	10	125		MBd
Imput capacitance	C_{IN}			5	pF
Imput impedance (single-ended)	R_{IN}		5		kΩ
Clock pulse input voltage	$V_{IN-BIAS}$	GND+0.8		Vcc-0.8	V
Input voltage range	$V_{IN-SWING}$	100		1200	mV
Wake up voltage	$V_{IN-WAKE}$			100	mV
Sleep mode voltage	$V_{IN-SLEEP}$	25			mV
Power consumption sleep mode	Icc			10	µA
Optical start up delay	T_{PU}			5	µs
Optical switch off delay	T_{PD}			20	µs
Wave lenght	λ	640	650	670	nm
Spectral band width	Δλ		23	30	nm
Power output in 1mm fiber (-40°..+85°C)	P_{OUT}	-7		-2	dBm
Switching time	t_R t_F		1.5 2.0	2.0 3.0	ns

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8 Technical data receiver

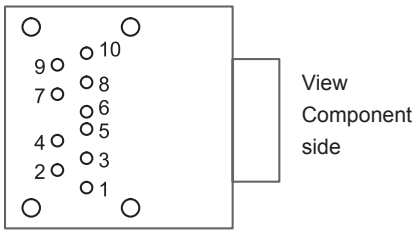
Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating voltage	VCC	3.0	3.3	3.6	V
Power consumption	Icc			45	mA
Input impedance (differential)	R_{OUT}		100		Ω
Output voltage offset	$V_{OUT-BIAS}$		1.2		V
Output voltage range	$V_{OUT-SWING}$	500		600	mV
SD start up delay	T_{SDU}	0.5	5	100	µs
SD switch off delay	T_{SDD}	0.5	5	100	µs
SD switch on threshold	P_{SDU}	-28	-26	-24	nm
optical Power input 1mm fiber (-40°..+85°C)	P_{IN}		-24	2	dBm
Switching time	t_R t_F			2.0 2.0	ns

9 Pinout

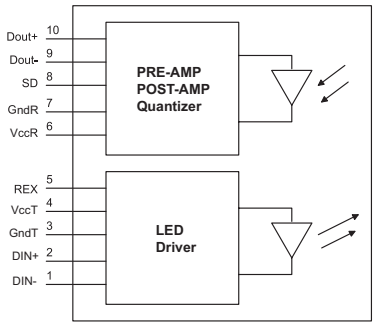
PIN	Name	Funktion
1	DIN-	Data input inverse
2	DIN+	Data input positive
3	GNDT	Reference potential transmitter
4	VccT	Supply voltage transmitter
5	REX	-3dBm transmission power reduction
6	VccR	Supply voltage receiver
7	GNDR	Reference potential receiver
8	SD	Signal detect exit
9	DOUT-	Data output inverse
10	DOUT+	Data output positive

*POF = Polymer Optical Fiber

10 Pinout PCB



11 Schematic diagram



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