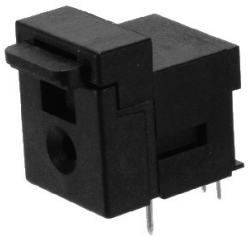
Ratioplast
Electronics | OptoElectronics

Data sheet **RPopto-Clamp 650nm Receiver**

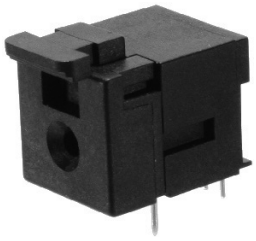
Photo-IC 650nm 156MBit/s

1 General

The RPopto clamp is especially suitable for applications with standard 1mm plastic fiber optical cable. A large area photodiode, a fast TIA and a PECL output stage are integrated into a single device, eliminating the need for additional signal recovery circuitry. The receiver is especially suited for applications with 1mm plastic optical fiber.



with front panel fill



without front panel fill

2 Applications

Due to the high data transmission rate of 156 MBit/s, the good optical characteristics and the simple connection technology of the fiber-optic cable, the RPopto clamp may be used in many applications:

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

3 Ordering Information

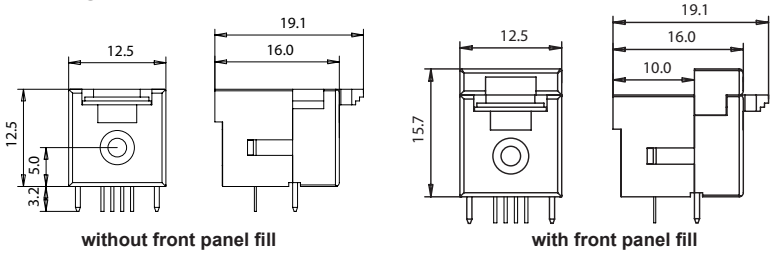
Model	Part Number
650 nm Receiver	905EM650KR003
650 nm Receiver (with front panel fill)	905EM650KR004

5 Features

- 650nm Photo-IC
- -22dBm input sensitivity
- 156MBit/s
- PECL output stage
- Plugless fiber optic cable assembly
- Suitable for all plastic optical fiber cable with an outside diameter of 2.2mm and a fiber diameter of 1mm
- Fast locking mechanism (manual control)
- Plastic housing
- Suitably for automatic assembly
- Reflow-/ wave soldering

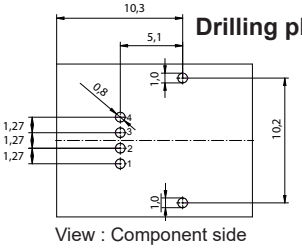
4 Technical Drawing

Housing



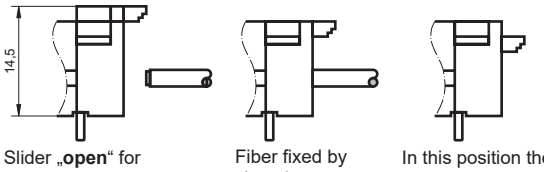
without front panel fill — with front panel fill

Drilling plan for PCB



View : Component side
Drill diameter:
PIN 1,2,3,4 = 0,8 mm
Fixing pins A = 1 mm

Contingent positions of sliders, locking mechanism

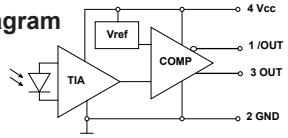


Slider „**open**“ for mounting or de-mounting of fiber

Fiber fixed by clamping.

In this position the RPopto clamp connector is dust and light protected.

Schematic diagram



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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
max. output current	I_{OUT}	8	mA
output voltage	V_{OUT}	-0.5 to Vcc + 0.5	V
supply voltage	V_{CC}	-0.5 to 7	V
power dissipation	P_{MAX}	250 derate 1.7mW / °C from 25°C	mW
operating temperature	T_{opr}	-20 to +70	°C
storage temperature	T_{stg}	-40 to +85	°C
solder temperature	T_{Solder}	230°C for 5 sec.	°C

7 Technical Data

Parameter	Symbol	Condition	Min	Typ	Max	Unit
supply voltage	V_{CC}		4.75	5	5.25	V
data rate	f_D	Bi-Phase NRZ	4	-	156	MBit/s
current consumption	I_{CC}	R_{LOAD} = 3kΩ	-	-	40	mA
output level H	V_{OH}	I_{OH} = -1mA	3.9	-	4.3	V
output level L	V_{OL}	I_{OL} = -0,5µA	2.9	-	3.4	V
min. opt. input power	P_{IN}min	λ = 650nm	-	-	-22	dBm
max. opt. input power	P_{IN}max	λ = 650nm	-2	-	-	dBm
switching times	t_r t_f	C_{Load} = 3pF R_{LOAD} = 3kΩ	-	-	3 3	ns ns
pulse width distortion	PWD		-3		3	ns
jitter	t_J				3	ns

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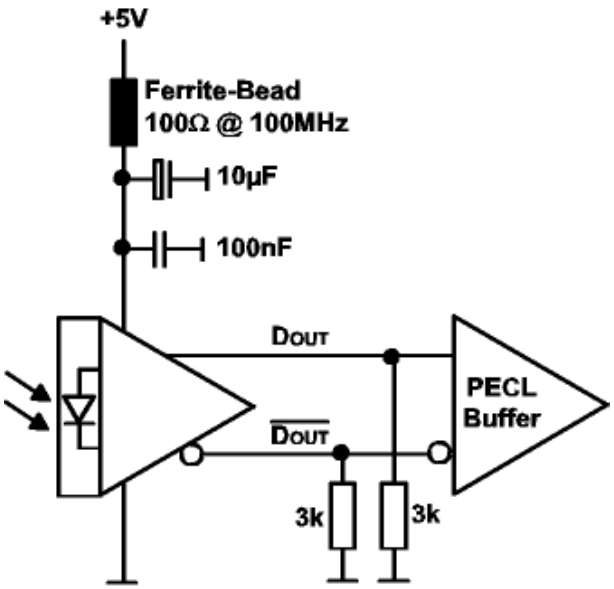
8 Circuit example



Note:

- Avoid unwanted signals on the voltage supply.
- Place an 100nF decoupling capacitor as close as possible to the receiver.
- Keep PCB traces as short as possible.
- Unlike normal PECL output, receiver output cannot be terminated with 50Ω (see output current under maximum ratings [6]).
- Protect the receiver against dirt.

9 Timing definition