Rev. A02 E05EM650KR001

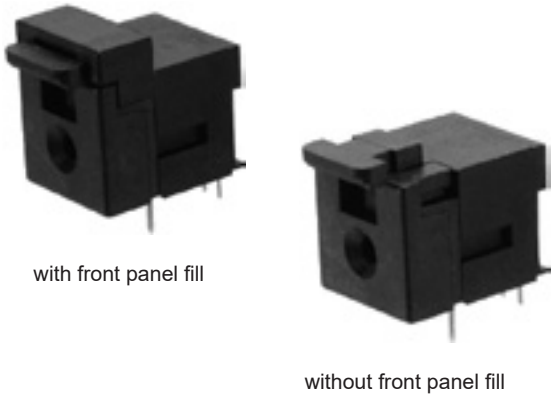
Ratioplast
Electronics | OptoElectronics

Data Sheet **RPOpto-Clamp 650nm Receiver**

Photo-IC 650nm 50MBit/s

1 General

The RPOpto-Clamp is especially suitable for applications with standard 1mm plastic fiber optical cable. Pre-mounted with a fast 650nm pin diode with TIA and comparator for a digital output signal, the RPOpto-Clamp is a good alternative solution in data transmission systems with plastic fiber optical cable.



with front panel fill

without front panel fill

Fig. 1

2 Applications

Due to the high data transmission rate of 50 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

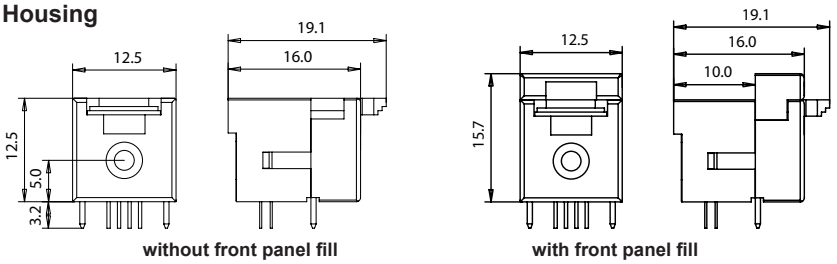
Model	Part Number
650 nm Receiver	905EM650KR001
650 nm Receiver (with front panel fill)	905EM650KR002

4 Features

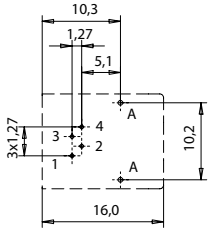
- 650nm Photo-IC
- -17,5dBm input sensitivity
- 50MBit/s
- Plugless fiber optic cable assembly
- Suitable for all plastic optical fiber cable with an outside diameter of 2.2mm and a fiber diameter of 1mm
- Fast locking mechanism (manual control)
- Plastic housing
- Suitable for automatic assembly
- Reflow-/ wave soldering

5 Technical Drawing

Housing

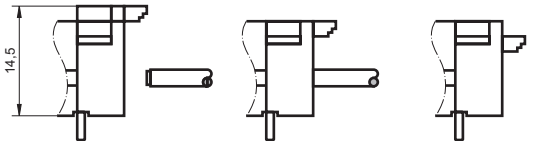


Drilling plan for PCB



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

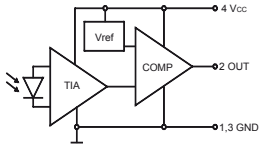


Fig. 2

Photo-IC 650nm 50MBit/s

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
Storage temperature	T_{Stg}	-40 to +85	°C
Operating temperature	T_{Opr}	-10 to +70	°C
Soldering temperature, at least 2mm away from package surface, t ≤ 5s	T_{Sol}	230	°C
Power supply	V_{CC}	-0.5 to 7	V
Output current	I_{OH}	10	mA
Power dissipation	P	250	mW

7 Technical Data

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Data rate	f_D		DC		50	Mbps
Supply voltage	V_{CC}		4.75	-	5.25	V
Current consumption	I_{CC}	without light input	-	-	32	mA
Pulse width distortion	Δ_T		-6	-	6	ns
Minimum overload	P_{INmax}	*1 *2	-5	-	-	dBm
Minimum receiver input power	P_{INmin}	*1 *2	-	-	-17.5	dBm
Rise time Fall time	t_R t_F	*2	- -	- -	7 7	ns
Output voltage	V_{OH}	I_{OH} = 20µA	2	-		V

*1: Output power at the end of 1-meter plastic fiber type 903IP00101001

*2: The rise and fall time were determined with the following curve forms. Measured with a FET-Probe-Head with a capacity < 3pF.

8 Input light impulse

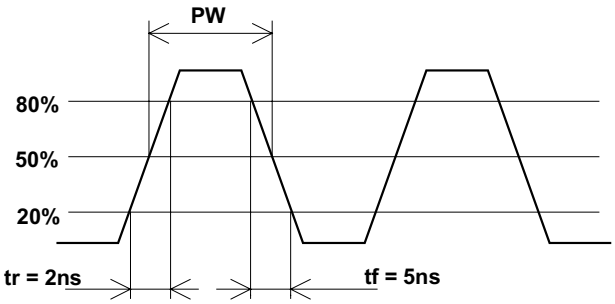


Fig. 3

9 Output

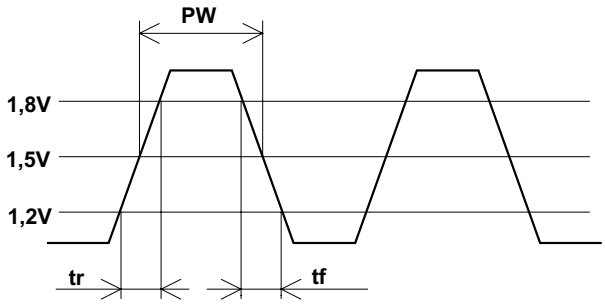


Fig. 4

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