Ratioplast
Electronics | OptoElectronics

Data sheet Fiber Optic Transceiver M12

M12-Transceiver 650nm LED/PIN-Diode

1 General

The M12 Transceiver is designed to suit applications with low cost 1mm plastic optical fiber. The transceiver is supplied with an IP67 protection cap and a fastening nut.

2 Application

Due to the high transmission rate, the good characteristics and the easy optical fiber termination, the transceiver may be used in many applications:

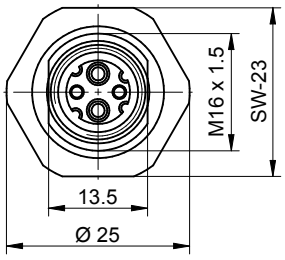
- Optical networks
- Fast-Ethernet
- Industrial electronics

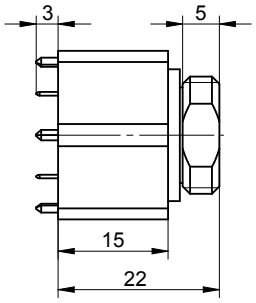
3 Ordering information

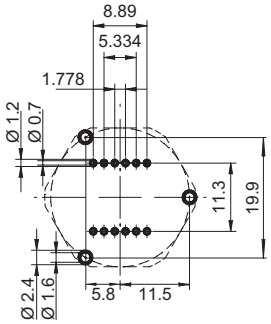
Specification	Part number
650nm LED_PIN	905TR650M12S1

4 Technical drawing

Housing

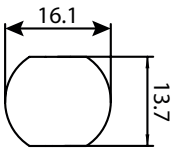






PCB drill layout

Cut out area / Durchbruch



Pic. 2 Drawing *M12 Transceiver*

Pic 1 *M12 Transceiver*

5 Features

- 650nm wavelength
- suitable for 1mm POF
- metal housing
- connector endface acc. DIN / IEC 61754-27
- -40 to +85°C ambient operating temperature
- RoHS compliant

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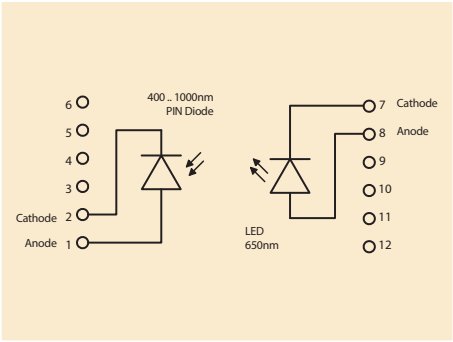
M12-Transceiver 650nm LED/PIN-Diode

6 Circuitry

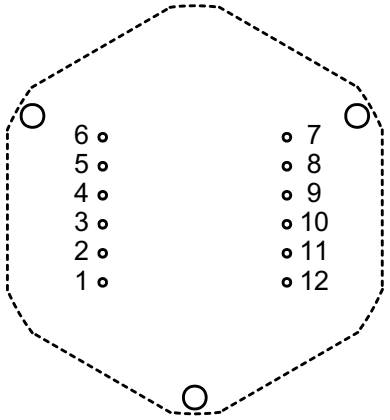


- LED 650nm
- PIN photodiode 400 .. 1000nm
- Plastic opitcal fiber

Pic. 3 Circuitry 905TR650M12S1

7 Pin assignment

Pin No.	905TR650M12S1
1	PIN Anode
2	PIN Cathode
3	nc
4	nc
5	nc
6	nc
7	LED Cathode
8	LED Anode
9	nc
10	nc
11	nc
12	nc



Pic. 4 *Top View*

M12-Transceiver 650nm LED/PIN-Diode

8 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	Condition	Min.	Typ.	Max.	Unit
Storage temperature	T_S		-40		100	°C
Operating temperature	T_C		-40		85	°C
Soldering temperature	T_{Sold}				260	°C
Lötzeit	t_{Sold}				5	s

9 Technical data

9.1 LED 650nm

Parameter	Value	Unit
Wavelength λ	650	nm
Spectral bandwidth Δλ	20	nm
Rise and fall times (I_F=50mA) t_R t_F	 14 (<20) 16 (<24)	 ns ns
Capacitance (V_R=0V)	52	pF
Forward voltage V_F (I_F=50mA)	2.0 (<2.6)	V
Fiber coupled power P_{Out} 1mm POF (I_F=10mA)	150 (<100)	µW
Temperature coefficient P_{OUT}	-0.4	%/K
Temperature coefficient V_F	-1.8	mV/K
Temperature coefficient λ	0.16	nm/K

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9.2 PIN Photodiode 400...1100nm __

Parameter	Value	Unit
Wavelength of max. sensitivity λ	850	nm
Spectral range of sensitivity Δλ	400....1100	nm
Rise and fall times (R_L= 50Ω, V_R = 20V) t_R t_F	 5 5	 ns ns
Capacitance (V_R=0V)	11	pF
Forward voltage V_F (I_F=80mA)	1.3	V
Spectral sensitivity of the chip (λ =850nm)	0.62	A/W
Temperature coefficient I_P 660nm	-0.04	%/K
Dark current (V_P=20V)	1 (≤5)	nA

CAUTION!
The assembly of system components (transceiver, connectors and couplings) has to be made with manual/hand force!!!

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