

M12-Transceiver 650nm LED/25Mbit

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_25Mbit	905TR650M12S3



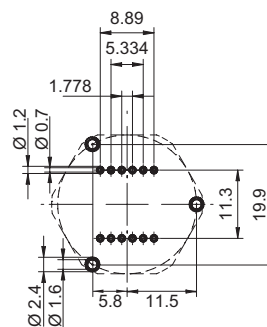
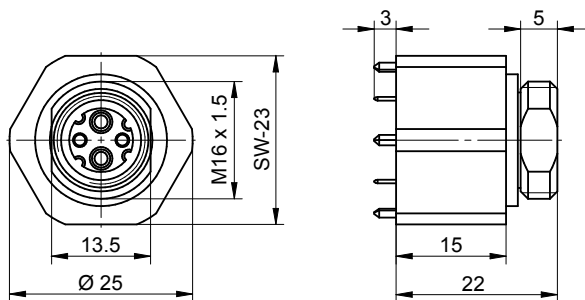
Pic 1 M12 Transceiver

5 Features

- 650nm wavelength
- suitable for 1mm POF
- metal housing
- connector endface acc. DIN / IEC 61754-27
- -25 to +85°C ambient operating temperature
- RoHS compliant

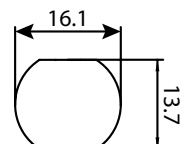
4 Technical drawing

Housing



PCB drill layout

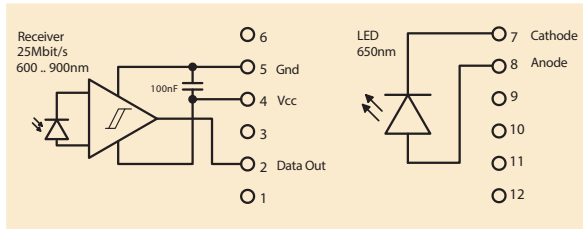
Cut out area / Durchbruch



Pic. 2 Drawing M12 Transceiver

M12-Transceiver 650nm LED/25Mbit

6 Circuitry _____

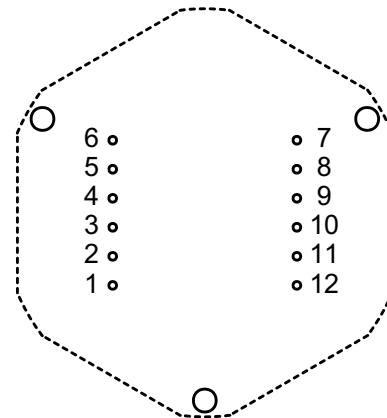


- LED 650nm
- Empfänger 25Mbit/s (open collector output)
- Plastic optical fiber

Pic. 3 Circuitry 905TR650M12S3

7 Pin assignment _____

Pin No.	905TR650M12S3
1	nc
2	Data Out
3	nc
4	Vcc
5	Gnd
6	nc
7	LED Cathode
8	LED Anode
9	nc
10	nc
11	nc
12	nc



Pic. 4 Top View

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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		-25		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 $\Delta\lambda$	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 Receiver 25Mbit_____

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}		-0.3	-	5.5	V
Operating Voltage	V_{CC}		4.75	5	5.25	V
Data Rate	f_D	DC	25			MBit/s
Output Current	I_O		-	-	10	mA
Power Supply Current	I_{CC}		-	35	-	mA
Output Voltage High	V_{OH}		4.44	-	-	V
Output Voltage Low	V_{OL}		-	-	0.5	V
Spectral Bandwidth	λ		400		1000	nm
Maximum Optical Input Power	$P_{IN,max}$	$\lambda = 850nm$	-	-	2	dBm
Sensitivity	S	$\lambda = 660nm$ $\lambda = 850nm$	-25 -28	- -	- -	dBm
Dynamic Range			26	-	-	dB

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

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