Ratioplast
Electronics | OptoElectronics

Data Sheet **Clamp Housing 650nm Transmitter**

LED 650nm

1 General

This device is especially suitable for applications with standard 1mm plastic optical fiber. Pre-mounted with a fast 650nm LED which has a high digital output signal, the device is a good alternative solution in data transmission systems with plastic optical fibers.

2 Application

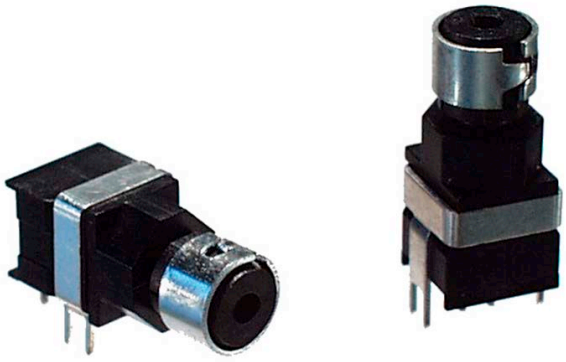
Due to the high data transmission rate up to 100 MBd, the good optical characteristics and the simple connection technology of the fiber optic cable, the device may be used in many applications:

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

3 Ordering information

Transmitter, 650 nm

Specification	Part number
horizontal assembly version	905SE650KM001
vertical assembly version	905SE650KM002



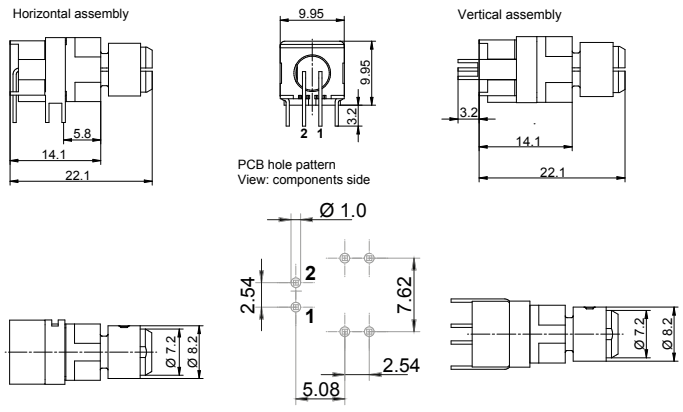
Pic. 1 Clamp housing with 650 nm transmitter

4 Features

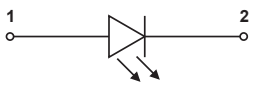
- 650nm LED
- Plugless optical fiber cable assembly
- Suitable for all plastic optical fiber cables with an outside diameter of 2.2 mm and a fiber diameter of 1 mm
- Fast locking mechanism (clamping ring)
- Plastic housing
- Suitable for automatic assembly
- Reflow-/ wave soldering

5 Drawings

Housing



Schematic diagramm



Pin-No.	Function
1	Anode
2	Cathode

Pic. 2 Drawings

LED 650nm

6 Maximum Ratings

Stresses beyond those listed under ´Maximum Ratings´ may cause permanent damage to the device. Listed values are stress limits only and functional operation of the device at these conditions is not recommended. Exposure to maximum rating conditions for extended periods may affect the device reliability.

Parameter	Value	Unit
Operating temperature range	-40 ... +85	°C
Storage temperature range	-40 ... +100	°C
Junction temperature	100	°C
Soldering temperature 2mm from case bottom, t ≤ 5s	260	°C
Reverse voltage	3	V
Forward current	50	mA
Power dissipation	120	mW
Thermal resistance (Junction/Air)	450	K/W

7 Technical Data (T_A = 40°C bis +85°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Forward voltage	V_F	I_{LED_DC} = 50mA, T_A=25°C		2.0	2.6	V
Optical output power	P_{OPT}	I_{LED_DC} = 10mA, T_A=25°C, $Wert_{dBm}$=10*log($Wert_{meas}$/1mW), 1mm POF, Länge 1m, NA=0.5	-10.5	-6.2	-2.5	dBm
Peak wavelength	λ_P		630	650	685	nm
Spectral bandwidth	Δ_λ			20	30	
Switching times	$t_{r\ (10\%...90\%)}$	R_ILED = 100Ω, T_A=25°C, $Wert_{dBm}$=10*log($Wert_{meas}$/1mW)		14	20	ns
	$t_{f\ (90\%...10\%)}$			16	24	
Capacitance	C_S	f_{meas}=1MHz; V_f=0V		52		pF
Temperature coefficient	T_{POPT}	LED 10mA-50mA T_{POPT} bei T_A= -40°C bis +25°C		0		%/K
		LED 10mA-50mA; T_{POPT} bei T_A= +25°C bis +85°C		-0.4		
	T_{VF}			-1.8		mV/K
	T_λ			0.16		nm/K

LED 650nm

8 Characteristics

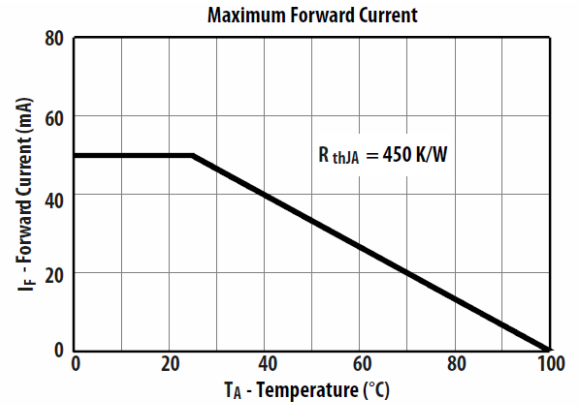


Figure 1. Maximum Forward Current

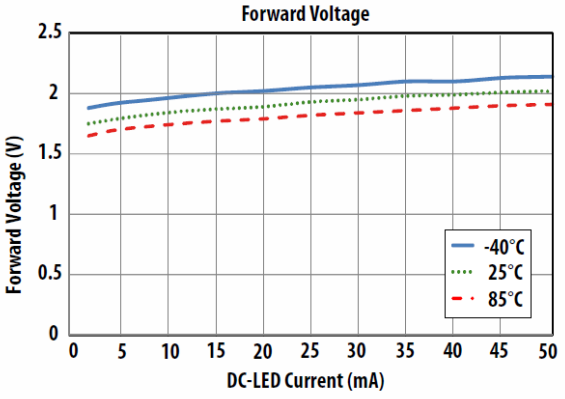


Figure 4. Typical Forward Voltage

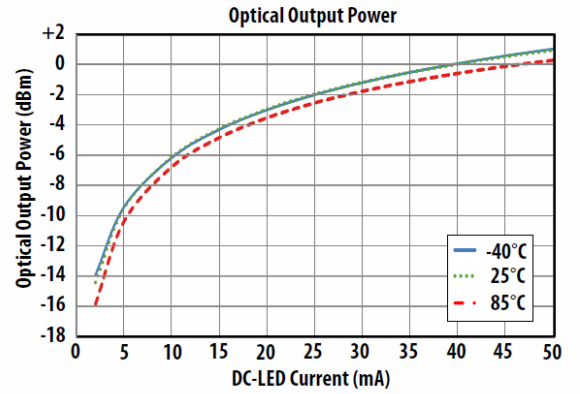


Figure 3. Typical Optical Output Power

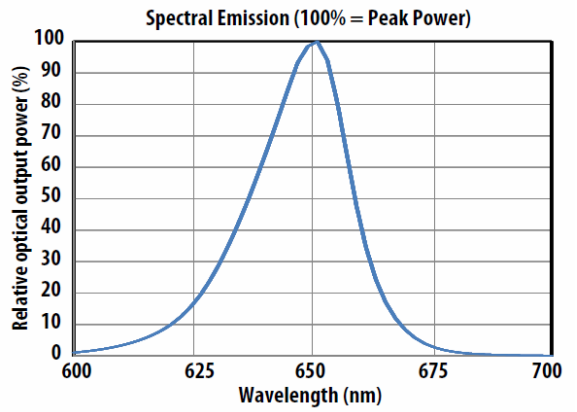


Figure 5. Typical Spectral Emission

Company address:
Jockweg 64
D 32312 Lübbecke

Phone +49 (0) 5741 23 66 5-0
Fax +49 (0) 5741 23 66 5-44

Internet: http://www.ratioplast.de
E-Mail: opto@ratioplast.de

VAT Reg. No.: DE 164 216 351
Local Court Bad Oeynhausen HRB 2382