Ratioplast
Electronics | OptoElectronics

Data Sheet **Metal Receptacle 650nm Transmitter**

LED 650nm

1 General

The active component is especially suitable for applications with standard 1mm plastic optical fiber. Pre-mounted with a fast 650nm LED capable of a high optical output power, the component is a good alternative solution in optical data transmission systems with plastic optical fibers.

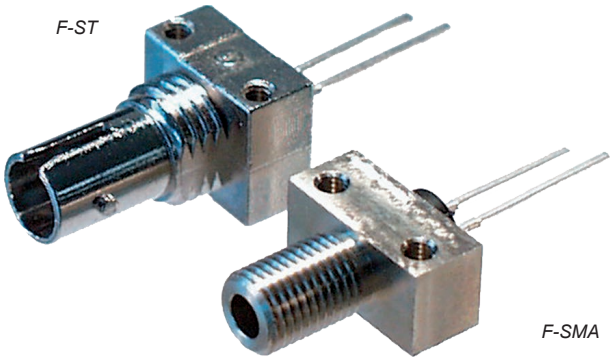


Fig. 1 Photo: Metal Receptacle

2 Applications

Due to the good optical and mechanical features this transmitter may be used in many applications:

- Optical networks
- Industrial electronic
- Power electronic
- Light barrier

3 Ordering Information

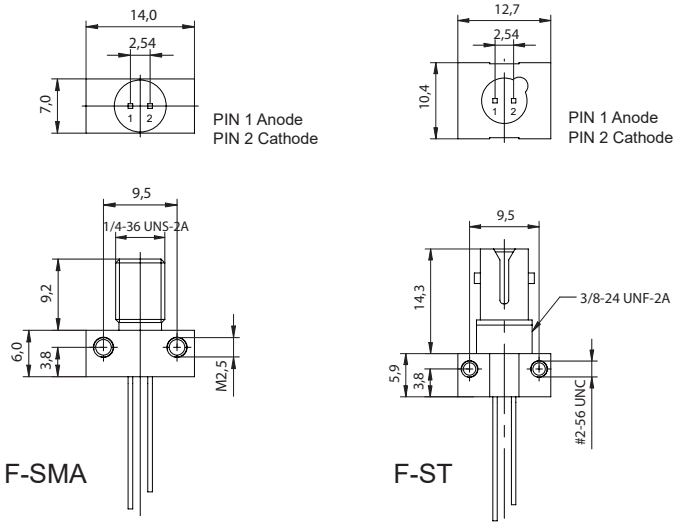
Specification	Part no.
F-SMA	905SE650SM101
F-SMA with accessories	905SE650SM1Z1
F-ST	905SE650ST101
F-ST with accessories	905SE650ST1Z1

4 Features

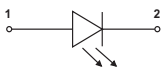
- 650nm LED
- F-SMA port (metal)
- F-ST port (metal)
- Qualified for plastic and PCF fiber
- Metal case
- wave soldering compatible

5 Technical Drawing

Housing



Schematic diagram



Accessories:
attachment nut, lock washer, screws for PCB-mounting

Fig. 2

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	nm
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	ns
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		%/K
	T_{VF}			-1.8		mV/K
	T_λ			0.16		nm/K

LED 650nm

8 Characteristics

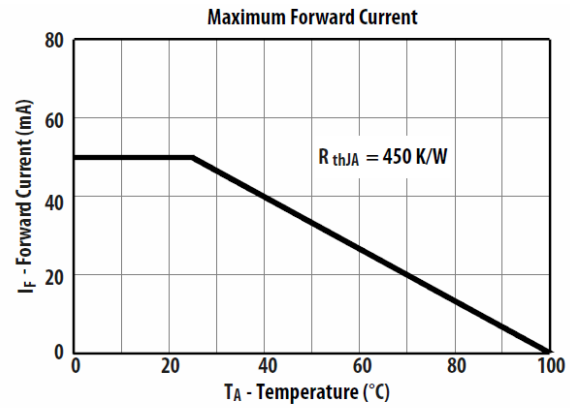


Figure 1. Maximum Forward Current

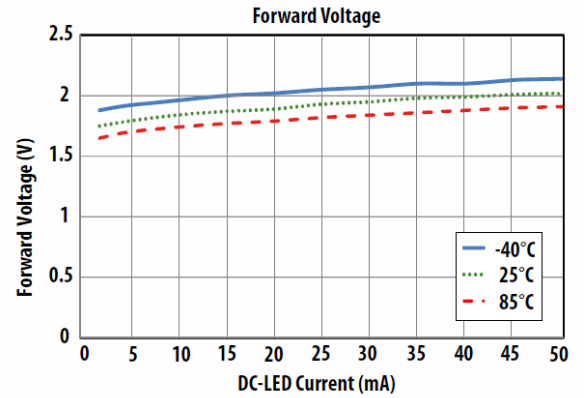


Figure 4. Typical Forward Voltage

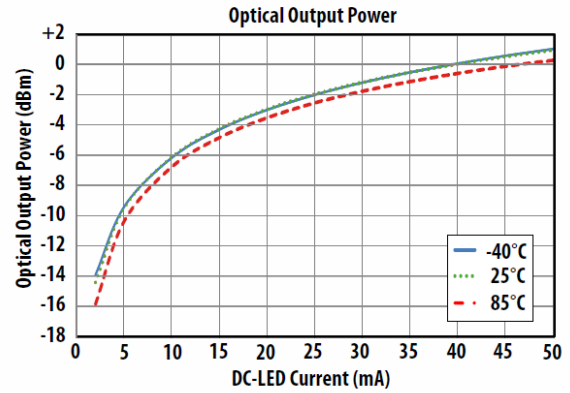


Figure 3. Typical Optical Output Power

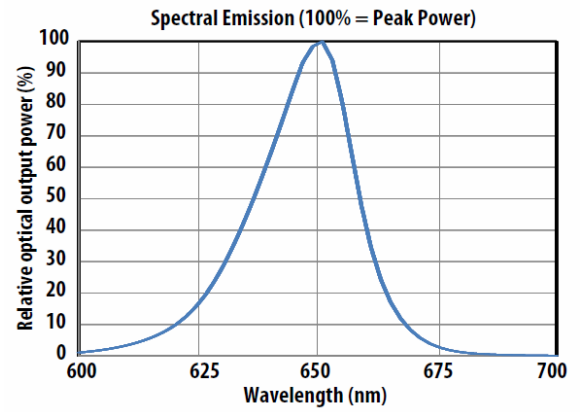


Figure 5. Typical Spectral Emission