



Electronics | OptoElectronics

**Data sheet Clamp receptacle
400...1100nm Receiver**

PIN-Photoreceiver 400...1100nm

1 General

The clamp receptacle is especially suitable for applications with standard 1mm plastic fiber optical cable. Pre-mounted with a high speed Si PIN photodiode the device is designed for visible to near infrared light detection with wideband characteristics at low bias, making it suitable for optical communications and other photometry. This device is a good solution in data transmission systems with plastic fiber optical cable.

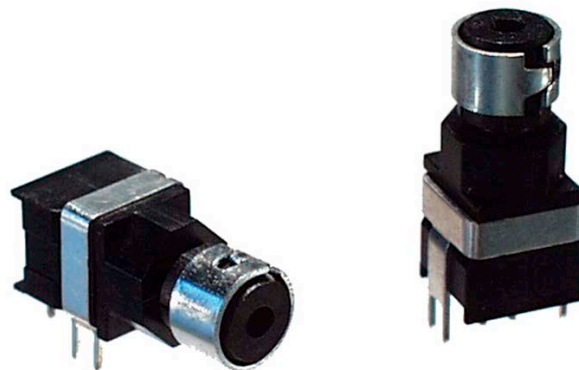
2 Application

Due to the fast switching times ($\leq 5\text{ns}$), the good optical characteristics and the simple connection technology of the fiber optic cable, the clamp receptacle may be used in many applications:

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

3 Ordering information

Specification	Part number
400...1100 nm Receiver	
horizontal assembly version	905EM660KM201
vertical assembly version	905EM660KM202



Pic. 1 Pre-mounted clamp receptacles

4 Features

- 400...1100nm PIN-Photoreceiver
- $t_r, t_f \leq 5\text{ns}$
- 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 (clamp ring)
- Plastic housing
- Suitably for automatic assembly
- Reflow-/ wave soldering

5 Drawings

Housing

Horizontal assembly

Vertical assembly

PCB hole pattern
View: components side

Schematic diagram

PIN-No.	Function
1	Anode
2	Cathode

Pic. 2 Drawings

PIN-Photoreceiver 400...1100nm

6 Maximum Ratings (T_A=25°C) _____

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	-40 ... +100	°C
Storage temperature		
Soldering temperature: 1.) 2mm from case, t ≤ 10s; 2.) max. 10s at max. 5s contact time per wave	260	°C
Reverse voltage	20	V
	50 at t ≤ 2min	
Power dissipation	150	mW
ESD withstand voltage	2	kV

7 Technical Data (T_A=25°C) _____

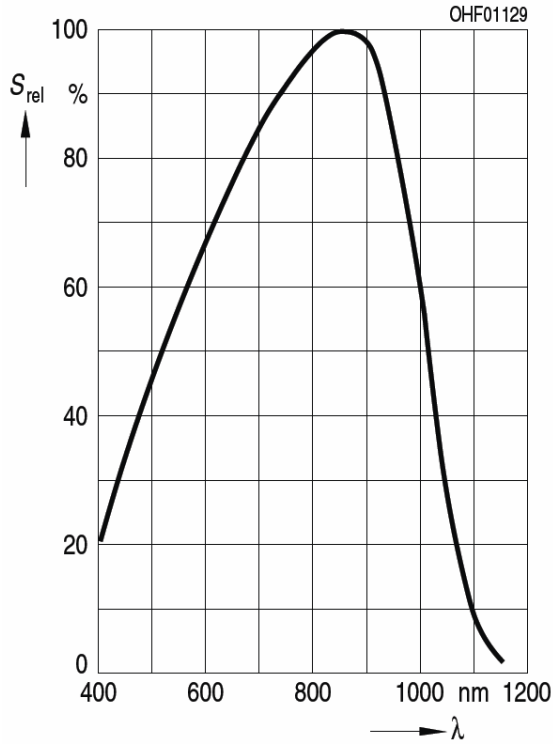
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Spectral range of sensitivity	$\lambda_{10\%}$		400		1100	nm
Wavelength of max sensitivity	λ_{Smax}			850		
Half angle	φ			75		°deg.
Dark current	I _R	V _R =20V		1	5	nA
Spectral sensitivity of the chip	S _A	$\lambda=850nm$		0.62		A/W
Open-circuit voltage	V _O	E _V =1000lx; Std. Light A	300	350		mV
Short-circuit current	I _{SC}	E _V =1000lx; Std. Light A		9.3		μA
Rise and fall time	t _r	VR = 20 V; RL = 50 Ω; λ = 850 nm		0.005		μs
	t _f					
Forward voltage	V _F	IF = 100 mA; E = 0		1.3		V
Capacitance	C _O	VR = 0 V; f = 1 MHz; E = 0		11		pF
Temperature coefficient	TC _V	Voltage		-2.6		mV/K
	TC _I	Short-circuit current Std. Light A		0.18		%/K



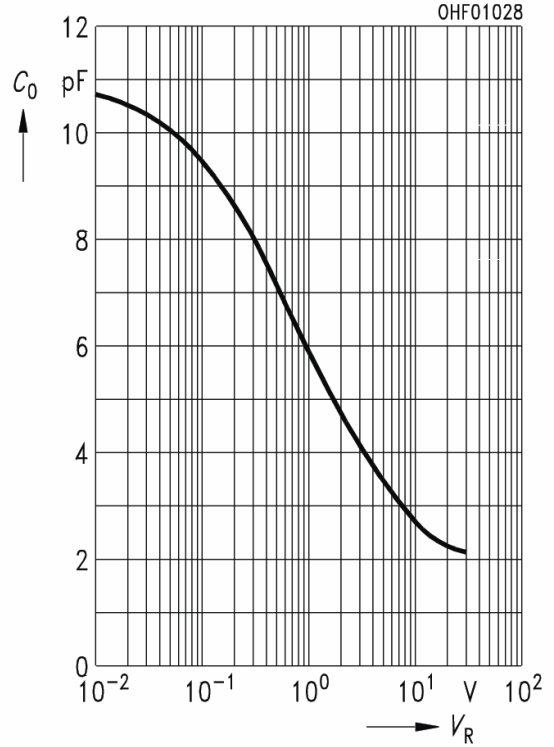
PIN-Photoreceiver 400...1100nm

8 Characteristics

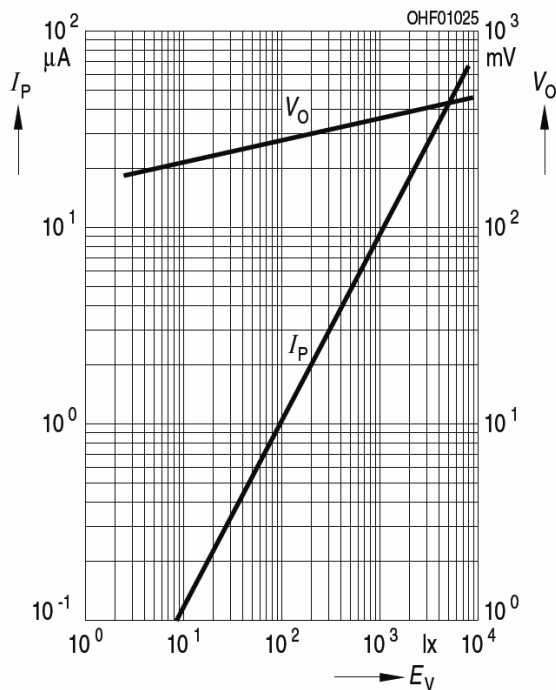
Relative Spectral Sensitivity



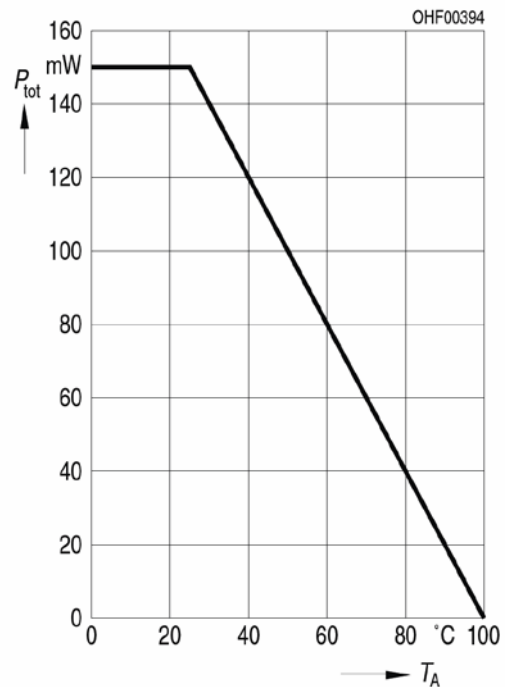
Capacitance



$I_P (V_R = 5 V) / V_O = f(E_V)$



$P_{tot} = f(T_A)$



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