

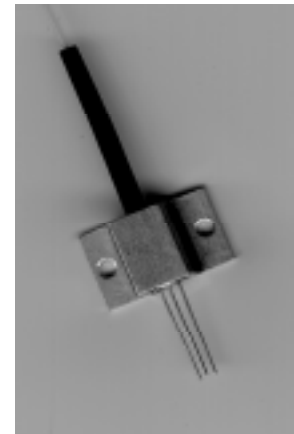
SIEMENS

Optical Receiver Module (Photodiode with Preamplifier)

SRP00254x
SRP00255x

Preliminary Data

- InGaAs/InP-PIN-photodiode with Preamplifier-IC
- Designed for **SONET OC-12 / SDH STM-4** applications in fiber-optic communication systems
- Hermetically sealed TO46 coaxial package
- MMF-pigtail with different plugs
- Sensitive in both opt. windows (1300 and 1550 nm)
- 3dB-Bandwidth 590 MHz
- Module with high optical sensitivity -33 dBm 28 dB dynamic range with 6 k Ω transimpedance (differential)
- Differential output with 60 Ω impedance
- Excellent noise immunity due to internal blocking and filtering capacitors
- SRP00255x with flange for easy mounting

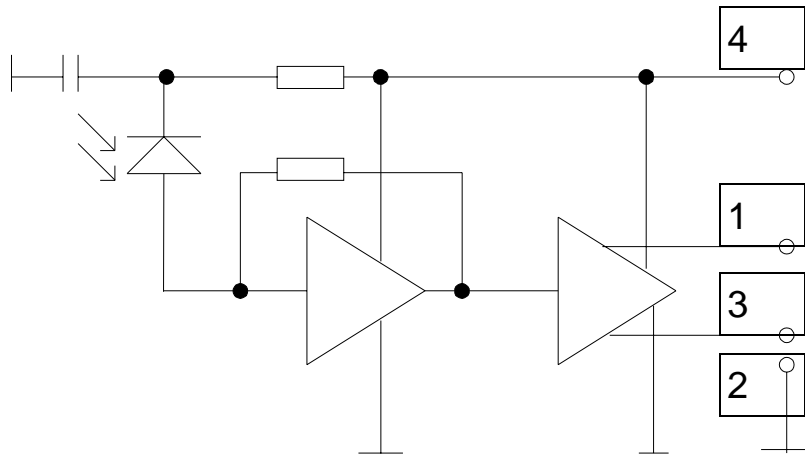


Maximum Ratings

Optical power ratings refer to the SM fiber input.

Module	Symbol	Values	Unit
Operating temperature range at case	T _C	- 40... +85	°C
Storage temperature range	T _{stg}	- 40... +85	°C
Soldering temperature t _{max} = 10 s, 2 mm distance from bottom edge of case	T _S	260	°C/min
Maximum Voltage	V _{CC}	6	V
Optical Overload	P _{max}	400	μW

Principal function:



Characteristics

at $T_A = 25^\circ\text{C}$, unless otherwise specified. Optical power data refer to SM fibre as optical port. Typical values, if not otherwise specified.

	Symbol	Min.	Typ.	Max.	Unit
Optical Sensitivity ($\text{BER} \leq 10^{-9}$)	S	-31	-33		dBm
Linear Bandwidth (-3dB)	BW		590		MHz
Optical overload	P_{max}		400		μW
Transresistance	R_T	4.5	6	7.5	$\text{k}\Omega$
Supply Voltage	V_{CC}	4	5	6	V
Supply Current	I_{CC}	12	25	35	mA
Gain	G	4	5.5	7.0	$\text{mV}/\mu\text{W}$
Minimum useful frequency	f_{min}			150	kHz

Description

The SRP00254x / SRP00255x is an optical receiver module which uses a high-speed PIN photodetector coupled with a hybrid low noise transimpedance amplifier (TIA) for 1300 nm or 1550 nm optical communications. The PIN-Photodiode is made of InGaAs/InP and has an active diameter of 75 μm .

The function of the PIN-TIA module is to detect input optical power, to transduce the incident radiation into current and then to convert the current into a voltage and drive 50 Ω line.

The low input noise current density of the transimpedance amplifiers provides the optical receiver module, when used with appropriate filtering, with ample sensitivity for realizing minimum input power requirements.

Designers of optical receivers can use the module in any application that benefits from integration of the photodiode and TIA into a TO coaxial package. Typical for such applications are receivers for digital crossconnects, digital loop carriers, add/drop-multiplexers and optical network units.

The SRP00254x / SRP00255x is also beneficial because it operates from a single +5 volt supply and is packaged in a compact, hermetically sealed module. In addition, the SRP00254x / SRP00255x, which has three isolated leads, requires fewer electrical connections and no additional shielding compared with discrete implementations of the photodetection / TIA-function. These features make the SRP00254x / SRP00255x an excellent optical receiver module of benefit in other fiber optic receiver applications.

Pinout of the Receiver Module:

(Bottom view)

