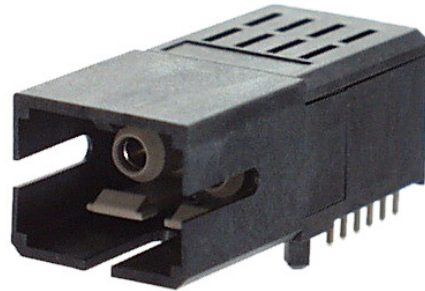


Data sheet	FO-Transceiver
	6 x 2 DIP 650nm
	Made under License of R&M

SCRJ-Transceiver 650nm 125MBit/s

1 General

The SCRJ 6 x 2 Transceiver is designed to suit applications with low cost plastic optical fiber. A fast 650nm LED with high optical power output and a high bandwidth optical receiver makes this transceiver a good choice for fiber optic systems using 1mm plastic optical fiber (POF).



Pic. 1 SC-RJ Transceiver

2 Applications

Due to the max. data rate of 125MBit/s, the good optical properties and the easy optical fiber termination, the transceiver may be used in many applications:

- Optical networks
- Fast-Ethernet
- Industrial electronics
- Power electronics
- Consumer electronics

5 Features

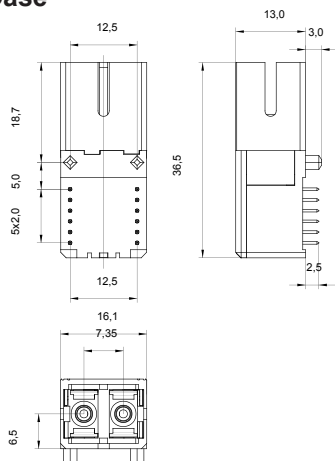
- 650nm Wavelength
- -3dBm optical power output (1mm POF)
- -22dBm receiver sensitivity
- 125MBit/s
- +5V power supply
- PECL in-/outputs
- Signal Detect (SD) output
- suitable for plastic optical fiber (POF) and large core silica fiber (HCS®)
- Plastic case
- pick and place support
- wave soldering compatible

3 Ordering information

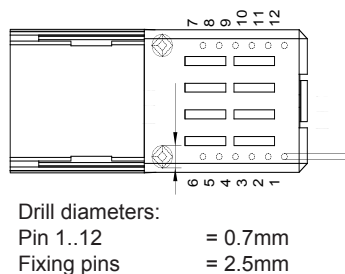
Specification	Part number
650nm SCRJ 6x2 DIP	905TR650S2001

4 Drawings

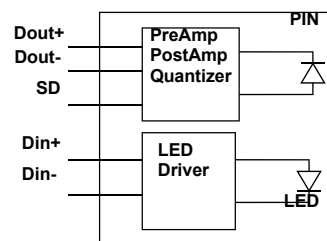
Case



PCB drills



Schematic



SCRJ-Transceiver 650nm 125MBit/s

6 Maximum ratings

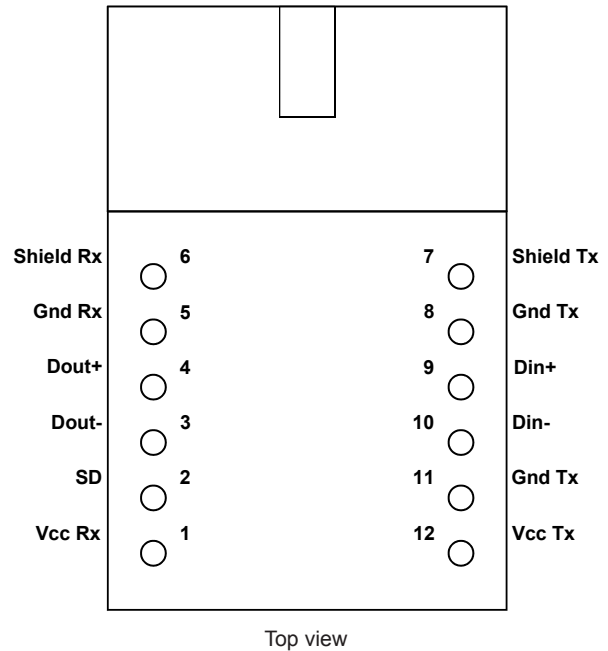
Stresses beyond those listed under 'Maximum Ratings' may cause permanent damage to the device. Listed values are stress limits only and functional operation of the device at these conditions is not recommended. Exposure to maximum rating conditions for extended periods may affect the device reliability.

Parameter	Value	Unit
Operating temperature	-40 to +80	°C
Storage temperature	-40 to +100	°C
Soldering temperature 2mm from case $t \leq 5s$	260	°C
Power supply	4.5	V
Input voltage	-0.5 to V_{CC}	V
Differential input voltage	1.4	V
Output current	50	mA

7 Technical data

Parameter	Value	Unit
Transmitter current consumption	50	mA
Receiver current consumption	50	mA
t_r, t_f optical output	1.8	ns
t_r, t_f optical output (L-option)	4.5	ns
Fiber coupled power P_{OUT} into 1mm POF	0.5	mW
Wavelength λ	650	nm
Spectral badwidth $\Delta\lambda$	25	nm
Receiver sensitivity $P_{IN min}$	10	μW
t_r, t_f data output	2.2	ns
Signal-detect hysteresis	3	dB
Signal jitter max.	4.2	ns p-p

8 Pin assignment



Pic. 2 Pin assignment SC-RJ Transceiver

9 Application hints

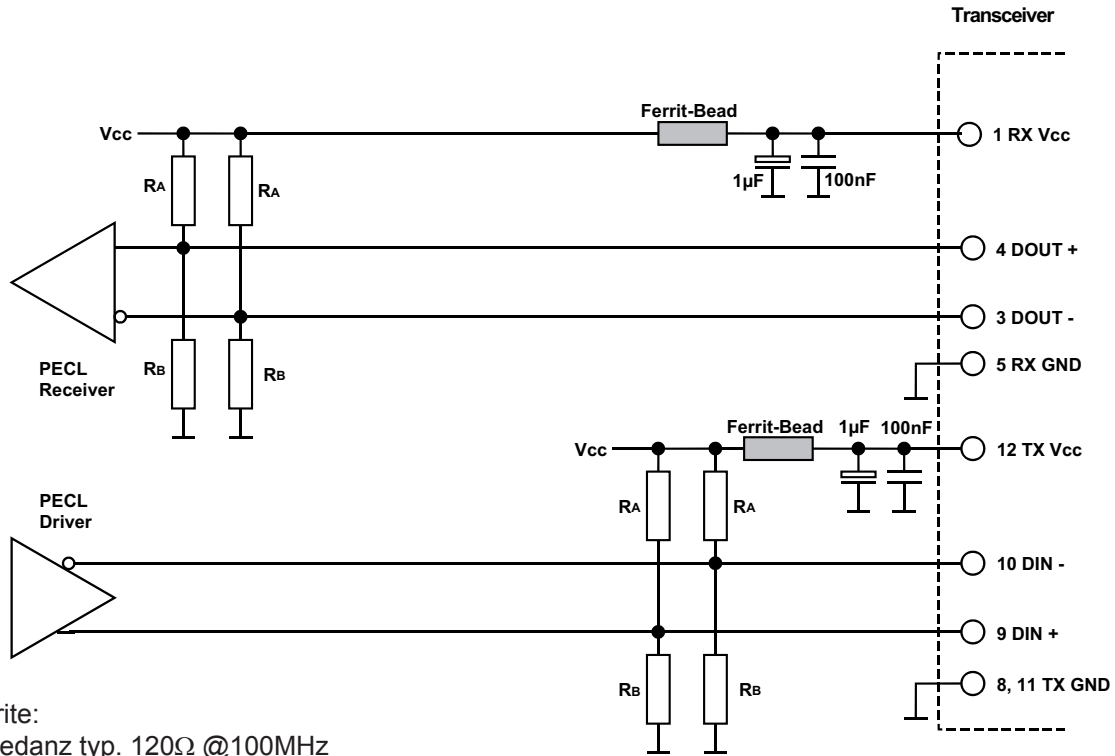
The transceiver is designed for applications using standard 1mm plastic optical fiber. Max. link length is 100m (resp. 50m for the L-option). Best performance is achieved when using LOW-NA* POF. Furthermore the link length could be extended to 150m (75m L-option) with this fiber.

*LOW-NA = low numerical aperture

SCRJ-Transceiver 650nm 125MBit/s

10 External circuitry _____

To achieve an optimum performance of the transceiver a good power supply decoupling and signal line termination as shown in pic. 4 is mandatory. Place decoupling capacitors and termination resistors as close as possible to the inputs. Resistor values shown in table below.



Ferrite:
 Impedanz typ. 120Ω @100MHz
 DC resistance max. 0.15Ω @ 200mA

Pic. 3 Parallel termination

Pic. 4. Parallel termination (Thevenin Equivalent)

- recommended termination
- common PECL/LVPECL termination method
- resistor divider track power-supply fluctuations
- +3.3V systems
 $R_1 = 2.5 \times Z_0$, $R_2 = 1.67 \times Z_0$
- +5.0V systems
 $R_1 = 1.67 \times Z_0$, $R_2 = 2.5 \times Z_0$

Supply	Output impedance	R_A	R_B
3.3 V	50 Ω	130 Ω	82 Ω

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