

OPT05-851XXXR

Ultra-Low Data Rate TTL 1x9 Fiber Optical Transceiver, Multi-Mode, 0~500kbps, 1km

Features

- SC/ST/FC receptacle multi-mode optical interface
- Single +3.3V or +5V Power Supply
- 1X9 SIP package
- Operating wavelength 850nm
- Super low power consumption design, applied to some special require
- Optional transmission bit rate with down to 0bps and up to 500kbps
- Standard TTL data output with signal detect indication, compatible with CMOS level
- Compliant with RS485 function
- RoHS Compliance
- Operating case temperature:
 - Standard: 0 to +70°C
 - Extended: -10 to +85°C
 - Industrial: -40 to +85°C

Applications

- Industrial Ethernet Applications: industrial Ethernet Switches, industrial ethernet Media Converters, Industrial fiber converters
- Serial Communications over fiber: Industrial RS-232/RS-422/RS-485 serial to fiber media converter, industrial RS-232 to RS-422 and RS-485 Adapters
- RS232/RS485/RS422 optical-electrical converter for electric power control, industrial control, industrial computing

Description

The OPT05-851xxxR family of 1x9 optical transceivers from Optcore provide the system designer and manufacturers with products to implement a range of industrial control, special low data rate Ethernet designs at the 0Mb/s-0.5Mb/s rate. This series fiber optic transceiver are all supplied in the industry standard 1x9 SIP package style with a duplex SC, a duplex ST, a duplex FC or Pigtailed type connector interface. The transceivers are high performance, cost effective modules with TTL data interface that supporting data-rate of 0~500kbps (0~0.5Mb) and 1km transmission distance over multi-mode fiber cable (MMF). The OPT05-851XXXR series TTL 1x9 optical Transceivers help you convert copper signals to optical fiber. They are usually used for serial communications over fiber like RS-232/422/485 serial to fiber media converter and industrial Ethernet networks to fiber networks communications like industrial fiber optic converters and industrial Ethernet switches.

The OPT05-851xxxR family transceiver provide both commercial temperature grade and industrial temperature grade for hardened environment application. Detailed information please refer to the ordering information.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	V _{CC}	0	6.0	V
Storage Temperature	T _s	-40	+85	°C
Operating Humidity	-	5	95	%

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Standard	0		+70	°C
	Extended	-10		+85	°C
	Industrial	-40		+85	°C
Power Supply Voltage	V _{CC}	4.75	5.0	5.25	V
	V _{CC}	3.135	3.3	3.465	V
Power Supply Current	I _{TX} +I _{RX}			100	mA
Data Rate		0		500	kbps

Optical Characteristics

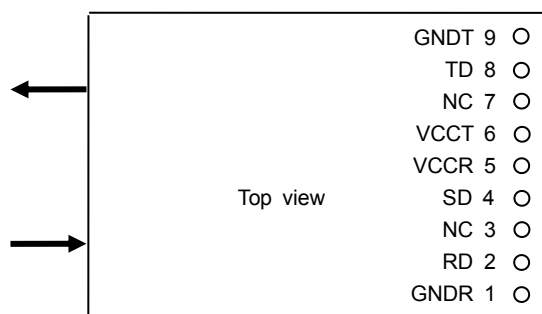
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λ	830	850	860	nm	
Spectral Width (-20dB)	$\Delta\lambda$			1	nm	
Average Output Power	P _{out}	-12	-9	-6	dBm	
Extinction Ratio	ER	9			dB	
Receiver						
Receiver Sensitivity				-16	dBm	
Receiver Overload		-12			dBm	
LOS De-Assert	LOS _D			-16	dBm	
LOS Assert	LOS _A	-30			dBm	

Pin Definitions

Pin	Signal Name	Remark	Description
1	GNDR		Receiver section grounded
2	RD	TTL/LVTTL	Data output of receiver section
3	NC		No connect
4	SD	TTL/LVTTL	Optical alarm of receiver section, low level when no light
5	V _{CC} R		Positive power of receiver section, normally +5V and 3.3V

6	VccT		Positive power of transmitter section, normally +5V and 3.3V
7	NC		No connect
8	TD	TTL/LVTTL	Data input of transmitter section
9	GNDT		Transmitter section grounded

Topview diagram



Mechanical Dimensions

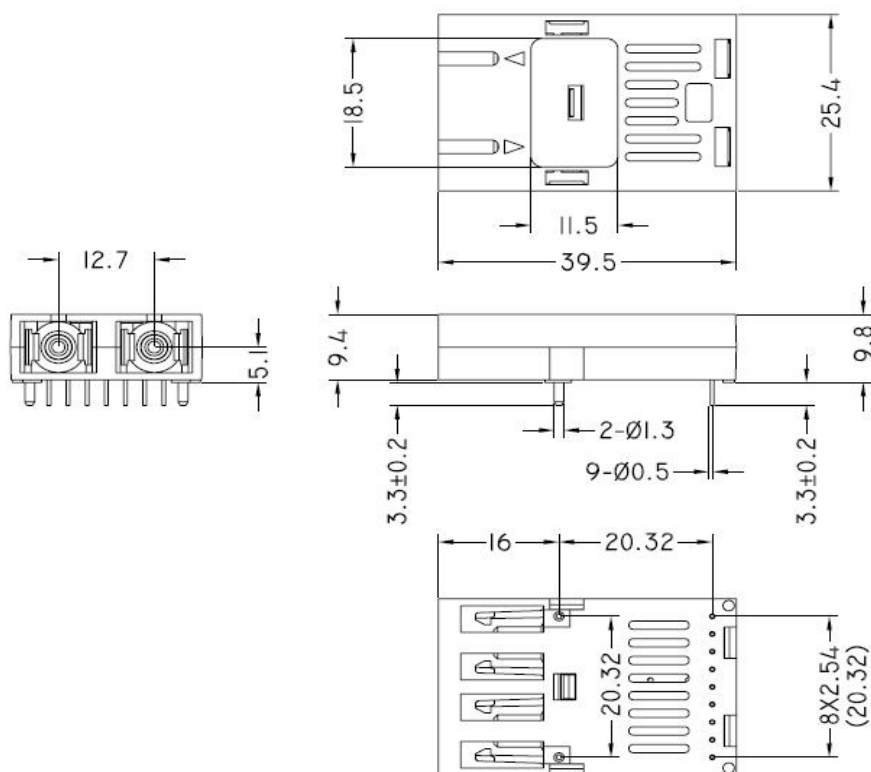


Figure 1. SC Connector

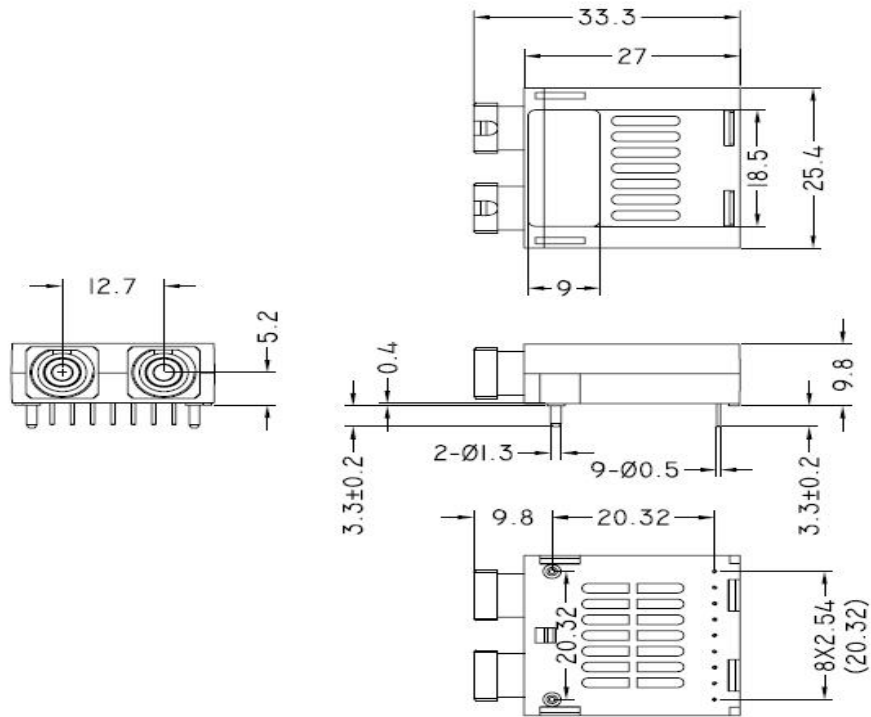


Figure 2. FC Connector

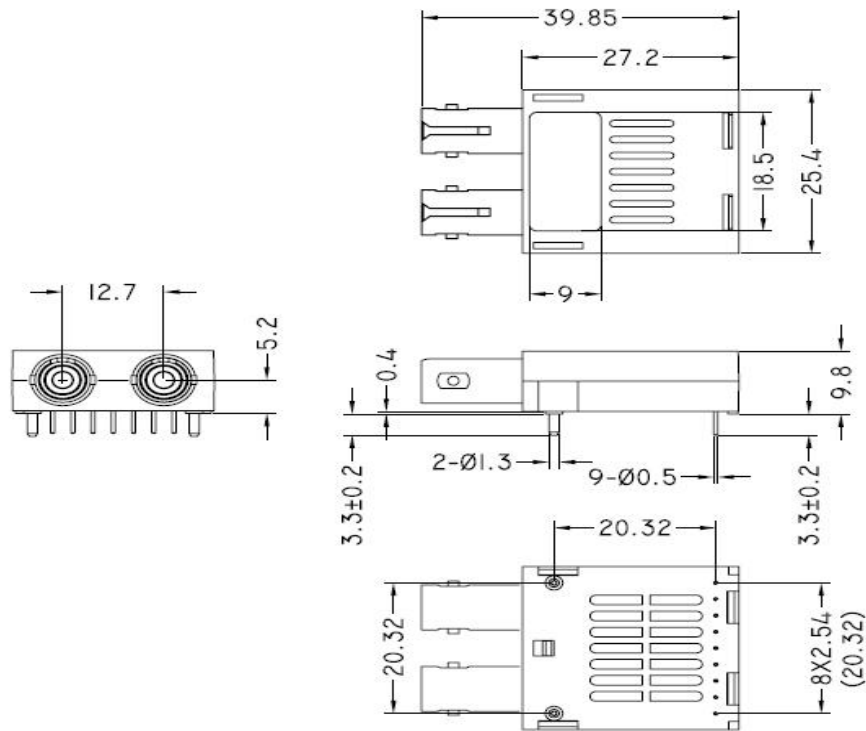


Figure 3. ST Connector

Ordering information

Commercial Temperature Grade (Operating Temperature: 0°C~70°C)

Part number	Description
OPT05-8515SCR	TTL 1x9 Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 5V, 0°C~70°C, SC
OPT05-8515TCR	TTL 1x9 Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 5V, 0°C~70°C, ST
OPT05-8515FCR	TTL 1x9 Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 5V, 0°C~70°C, FC
OPT05-8515PCR	TTL 1x9 Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 5V, 0°C~70°C, FC Pigtail
OPT05-8513SCR	TTL 1x9 Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 3.3V, 0°C~70°C, SC
OPT05-8513TCR	TTL 1x9 Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 3.3V, 0°C~70°C, ST
OPT05-8513FCR	TTL 1x9 Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 3.3V, 0°C~70°C, FC
OPT05-8513PCR	TTL 1x9 Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 3.3V, 0°C~70°C, FC Pigtail

Industrial Temperature Grade (Operating Temperature: -40°C~+85°C)

Part number	Description
OPT05-8515STR	TTL 1x9 Industrial Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 5V, -40°C~+85°C, SC
OPT05-8515TTR	TTL 1x9 Industrial Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 5V, -40°C~+85°C, ST
OPT05-8515FTR	TTL 1x9 Industrial Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 5V, -40°C~+85°C, FC
OPT05-8515PTR	TTL 1x9 Industrial Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 5V, -40°C~+85°C, FC Pigtail
OPT05-8513STR	TTL 1x9 Industrial Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 3.3V, -40°C~+85°C, SC
OPT05-8513TTR	TTL 1x9 Industrial Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 3.3V, -40°C~+85°C, ST
OPT05-8513FTR	TTL 1x9 Industrial Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 3.3V, -40°C~+85°C, FC
OPT05-8513PTR	TTL 1x9 Industrial Transceiver, Multi-mode Fiber, 850nm, 0~500Kbps, 1km, 3.3V, -40°C~+85°C, FC Pigtail

Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

For more product information, visit us on the web at www.optcore.net



DS/EN/VER160607 Copyright © 2016 Optcore Technology Co.,Ltd. All rights reserved.
Optcore, Optcore logo are registered trademarks of Optcore Technology Co.,Ltd. All other
brands, product names, or trademarks mentioned are the property of their respective
owners. Specifications and product availability are subject to change without notice.
Optcore assumes no responsibility for inaccuracies contained herein.

