

OPT05-3120XXXR

0~500kbps Ultra-Low Data Rate TTL 1x9 Fiber Optical Transceiver, Single Mode, 20km, SC/ST/FC

Features

- SC/ST/FC receptacle optical interface
- Single +3.3V or +5V Power Supply
- 1X9 SIP package
- Operating wavelength 1310nm over single mode fiber
- 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 OPT05-3120xxxR 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 maximum 20km transmission distance over single mode fiber cable (SMF). The OPT05-3120XXXR 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 OPT05-3120xxxR family transceiver provide both commercial temperature grade and industrial temperature

grade for hardened environment application. For 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

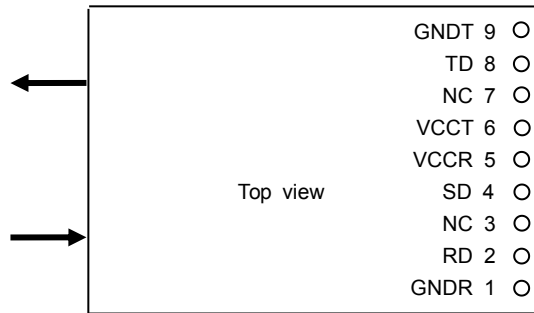
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λ	1260	1310	1360	nm	
Spectral Width (-20dB)	$\Delta\lambda$			3	nm	
Average Output Power	P _{out}	-7	-5	-3	dBm	
Extinction Ratio	ER	9			dB	
Receiver						
Receiver Sensitivity				-20	dBm	
Receiver Overload		-7			dBm	
LOS De-Assert	LOS _D			-20	dBm	
LOS Assert	LOS _A	-30			dBm	

Pin Definitions

Pin	Signal Name	Remark	Description
1	GNDR		Receiver section grounded
2	RD	TTL/LVTTL	Date output of receiver section
3	NC		No connect

4	SD	TTL/LVTTL	Optical alarm of receiver section, low level when no light
5	VccR		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	Date input of transmitter section
9	GNDT		Transmitter section grounded

Topview diagram



Mechanical Dimensions

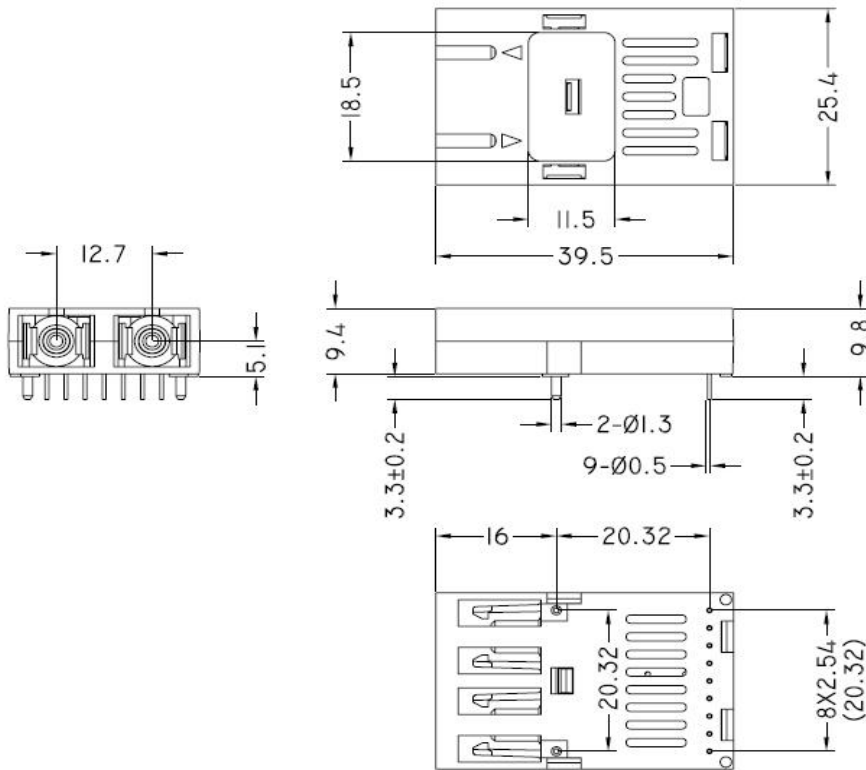


Figure 1. SC Connector

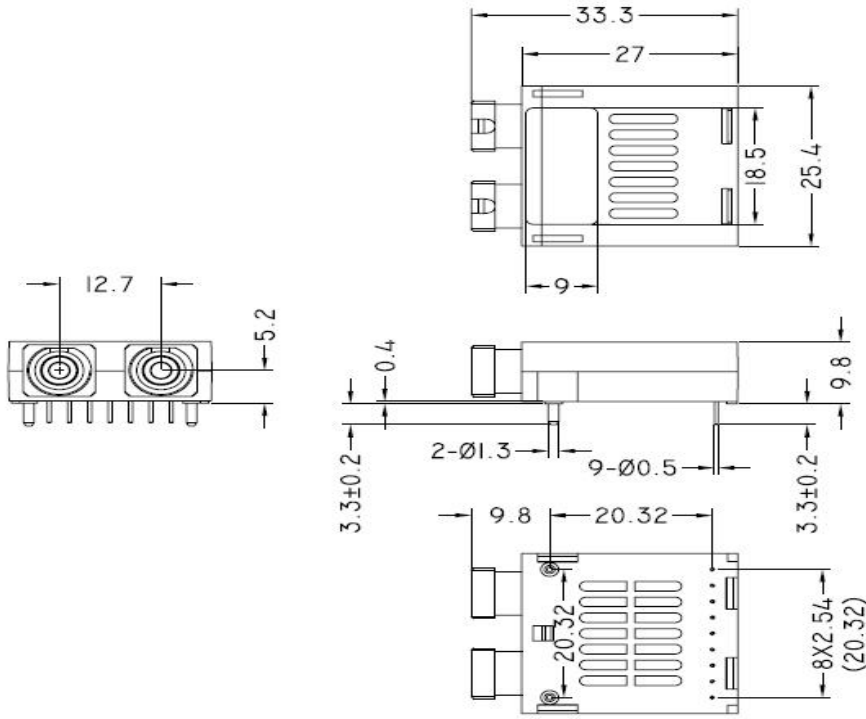


Figure 2. FC Connector

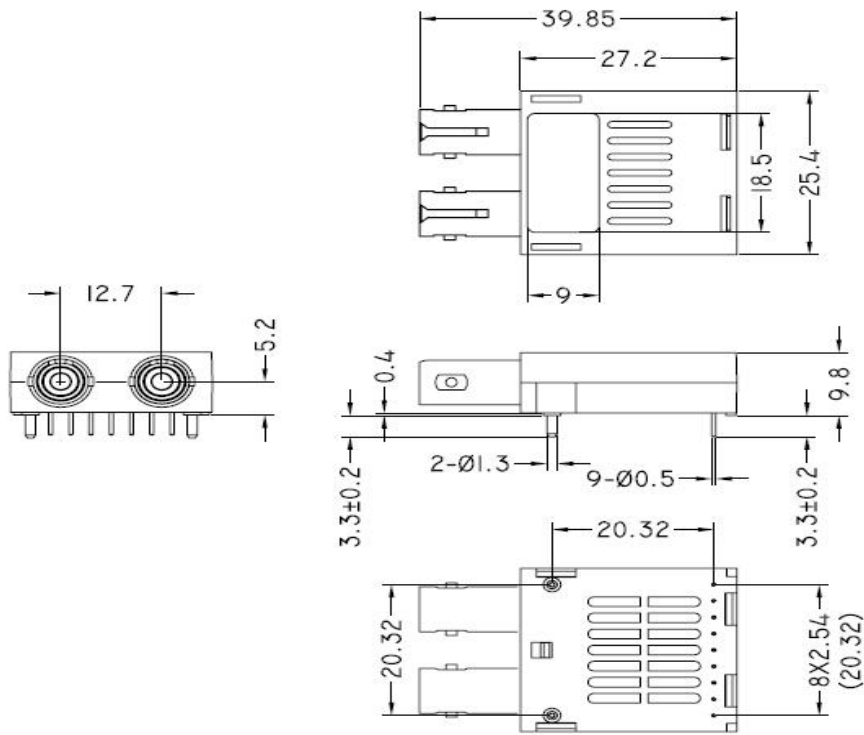


Figure 3. ST Connector

Ordering information

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

Part number	Description
OPT05-31205SCR	TTL 1x9 Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 5V, 0°C~70°C, SC
OPT05-31205TCR	TTL 1x9 Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 5V, 0°C~70°C, ST
OPT05-31205FCR	TTL 1x9 Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 5V, 0°C~70°C, FC
OPT05-31205PCR	TTL 1x9 Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 5V, 0°C~70°C, FC Pigtail
OPT05-31203SCR	TTL 1x9 Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 3.3V, 0°C~70°C, SC
OPT05-31203TCR	TTL 1x9 Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 3.3V, 0°C~70°C, ST
OPT05-31203FCR	TTL 1x9 Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 3.3V, 0°C~70°C, FC
OPT05-31203PCR	TTL 1x9 Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 3.3V, 0°C~70°C, FC Pigtail

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

Part number	Description
OPT05-31205STR	TTL 1x9 Industrial Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 5V, -40°C~85°C, SC
OPT05-31205TTR	TTL 1x9 Industrial Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 5V, -40°C~85°C, ST
OPT05-31205FTR	TTL 1x9 Industrial Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 5V, -40°C~85°C, FC
OPT05-31205PTR	TTL 1x9 Industrial Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 5V, -40°C~85°C, FC Pigtail
OPT05-31203STR	TTL 1x9 Industrial Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 3.3V, -40°C~85°C, SC
OPT05-31203TTR	TTL 1x9 Industrial Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 3.3V, -40°C~85°C, ST
OPT05-31203FTR	TTL 1x9 Industrial Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 3.3V, -40°C~85°C, FC
OPT05-31203PTR	TTL 1x9 Industrial Transceiver, Single Mode, 1310nm, 0~500Kbps, 20km, 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



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