

## OPT52-852xxxR

52Mbps TTL 1x9 Optical Transceiver, Multimode, 850nm, 2km, Duplex SC/ST/FC

### Features

- SC/ST/FC receptacle optical interface
- Single +3.3V or +5V Power Supply
- 1x9 footprint package
- TTL Inputs & Outputs
- Operating wavelength 850nm
- Super low power consumption design, applied to some special require
- Data rate up to 52Mbps
- TTL Signal Detection Output
- RoHS Compliance
- Operating case temperature:
  - Standard: 0 to +70°C
  - Extended: -10 to +85°C
  - Industrial: -40 to +85°C



### Applications

- SONET/SDH Equipment Interconnect

### Description

The OPT52-852xxxR family of 1x9 optical transceivers from Optcore provide the network system designer and manufacturers with products to implement a range of SONET/SDH equipment designs at the low data rate of 52 Mbps. This series fiber optic transceivers are all supplied in the industry standard 1x9 SIP package style with a duplex SC, ST, FC connector interface. They are high performance, cost effective optical transceiver modules with TTL data interface that supporting data-rate of 52Mbps and 2km transmission distance over Multimode fiber cable (MMF). The OPT52-852xxxR series TTL 1x9 optical transceivers help you convert copper signals to optical fiber. They are usually used for short distance data communications over fiber such as ATM/SONET/SDH applications.

The 52Mbps 1x9 MMF 2km transceiver provides 3 types operating temperature for different applications:

- Standard type (0~70°C) for commonly commercial application, provided with the lowest cost
- Extended type (-10~85°C) for extended temperature application, provides wider operating temperature
- Industrial grade(-40~85°C) is made with robust and reliable components, to meet the needs of Industrial application under hardened environmental conditions.

### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc (3.3V)	0	4.0	V
	Vcc(5V)	0	6.0	V
Storage Temperature	Ts	-40	+85	°C
Operating Humidity	-	5	95	%

**Recommended Operating Conditions**

Parameter		Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Standard	T <sub>c</sub>	0		+70	°C
	Extended		-10		+85	°C
	Industrial		-40		+85	°C
Power Supply Voltage		V <sub>cc</sub>	4.75	5.0	5.25	V
		V <sub>cc</sub>	3.14	3.3	3.47	V
Power Supply Current		I <sub>TX+RX</sub>		150	250	mA
Data Rate			2		52	Mbps

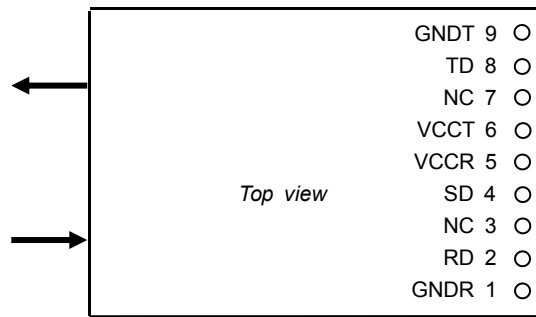
**Optical Characteristics**

Parameter	Symbol	Min	Typical	Max	Unit	Notes
<b>Transmitter</b>						
Centre Wavelength	$\lambda$	830	850	860	nm	
Spectral Width	$\Delta\lambda$			0.85	nm	
Average Output Power	P <sub>out</sub>	-15	-11	-8	dBm	
Extinction Ratio	ER	10			dB	
<b>Receiver</b>						
Receiver Sensitivity				-28	dBm	
Receiver Overload		0			dBm	
LOS De-Assert	LOS <sub>D</sub>			-28	dBm	
LOS Assert	LOS <sub>A</sub>	-47			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

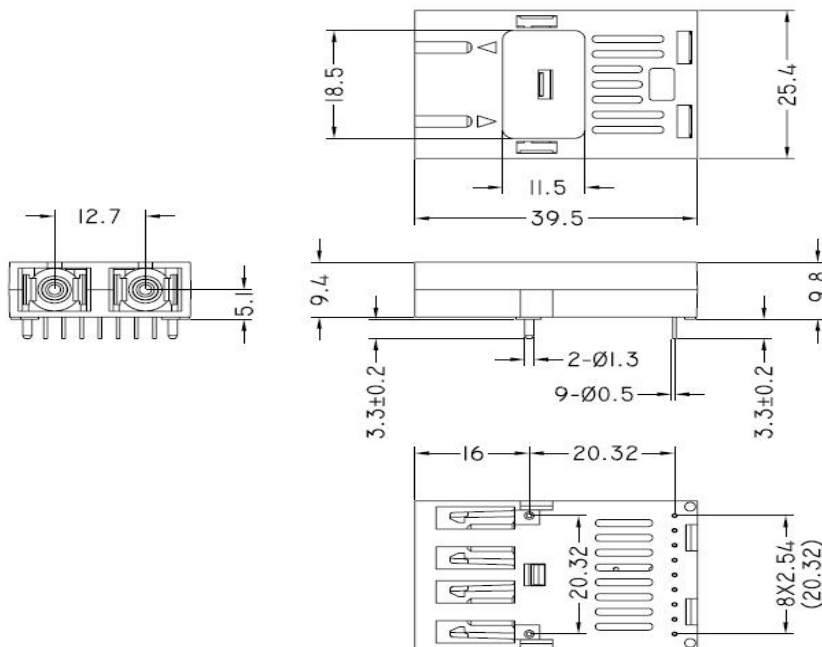


Figure 1. SC Connector

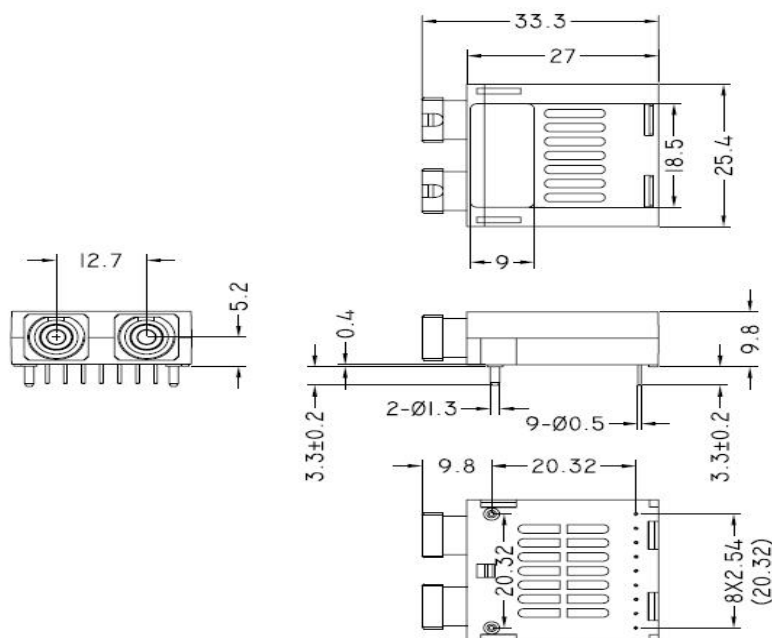


Figure 2. FC Connector

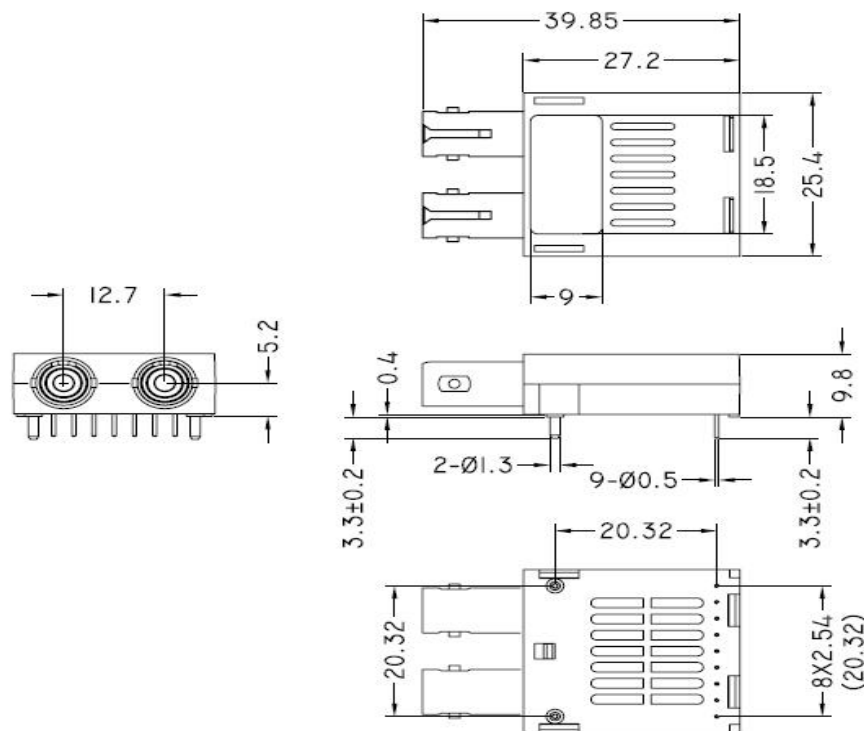


Figure 3. ST Connector

## Ordering information

### 52Mbps 1x9 TTL Multimode 850nm 2km Transceiver (Commercial Temperature)

Part number	Voltage	Connector	Operating Temperature
OPT52-8525SCR	5V	Duplex SC	0~70 °C
OPT52-8525TCR	5V	Duplex ST	0~70 °C
OPT52-8525FCR	5V	Duplex FC	0~70 °C
OPT52-8525PCR	5V	Duplex FC pigtail	0~70 °C
OPT52-8523SCR	3.3V	Duplex SC	0~70 °C
OPT52-8523TCR	3.3V	Duplex ST	0~70 °C
OPT52-8523FCR	3.3V	Duplex FC	0~70 °C
OPT52-8523PCR	3.3V	Duplex FC pigtail	0~70 °C

### 52Mbps 1x9 TTL Multimode 850nm 2km Transceiver (Extended Temperature)

Part number	Voltage	Connector	Operating Temperature
OPT52-8525SER	5V	Duplex SC	-10~85 °C
OPT52-8525TER	5V	Duplex ST	-10~85 °C
OPT52-8525FER	5V	Duplex FC	-10~85 °C
OPT52-8525PER	5V	Duplex FC pigtail	-10~85 °C
OPT52-8523SER	3.3V	Duplex SC	-10~85 °C
OPT52-8523TER	3.3V	Duplex ST	-10~85 °C
OPT52-8523FER	3.3V	Duplex FC	-10~85 °C
OPT52-8523PER	3.3V	Duplex FC pigtail	-10~85 °C

### 52Mbps 1x9 TTL Multimode 850nm 2km Transceiver (Industrial Temperature)

Part number	Voltage	Connector	Operating Temperature
OPT52-8525STR	5V	Duplex SC	-40~85 °C
OPT52-8525TTR	5V	Duplex ST	-40~85 °C
OPT52-8525FTR	5V	Duplex FC	-40~85 °C
OPT52-8525PTR	5V	Duplex FC pigtail	-40~85 °C
OPT52-8523STR	3.3V	Duplex SC	-40~85 °C
OPT52-8523TTR	3.3V	Duplex ST	-40~85 °C
OPT52-8523FTR	3.3V	Duplex FC	-40~85 °C
OPT52-8523PTR	3.3V	Duplex FC pigtail	-40~85 °C

## Warnings

### Process plug

The transceiver optics is supplied with a dust cover. This plug protects the transceiver optics during standard manufacturing processes by preventing contamination from air borne particles. It is recommended that the dust cover remain in the transceiver whenever an optical fiber connector is not inserted.

### Handling Precautions

The transceiver optics 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

The transceiver optics is a Class 1 laser product per international standard IEC 60825-1. 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](http://www.optcore.net)



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