

L9-SD312M-20TTC

1x9 2Mbps 1310nm 20km SC Transceiver Module

Product Features

- VCSEL/FP Laser Diode Transmitter
- Up to 2 Km on 62.5/125μm MMF, Up to 20 Km on 9/125μm SMF
- 3.3V or 5.0V power supply
- SC/ST/FC duplex optical interface
- (LV)TTL Inputs / Outputs and (LV)TTL signal detect
- Class 1 Laser International Safety Standard IEC 825 Compliant
- Operating case temperature range
(Standard: 0 to +70°C)
(Industrial: -40°C to +85°C)

Application

- RS232/RS485/RS422 receptacle fiber transmission
- Fiber System



Product Description

LINK-PP's L9-xxxx2M-xTTx series of transceiver modules are the perfect solution for ultra-low speed communication networks.

These transceiver modules support data rates up to 2Mbps. The module is fully compliant with the Multi-sourced 1x9 protocol.

These transceiver modules provides the system designer with products to RS232/RS485/RS422 receptacle fiber transmission.

Absolute Maximum Ratings

Operating of the transceiver beyond the Absolute Conditions Listed in Table 1 will degrade or damage the product. It's not implied that the product would function above the recommended operating environment, it's possible to reduce the reliability and lifetime of device if Recommended Operating Environment is exceeded (Refer to table 2)

Table 1-- Absolute Maximum Conditions

Parameter		Symbol	Min	Max	Units	Note
Storage Temperature		T _{ST}	-40	+85	°C	-
Relative Humidity		RH	5	95	%	-
Supply Voltage	3.3V power	V _{CC}	0	+3.6	V	-
	5V power		0	+6		-

Table 2-- Recommended Operating Environment and Electrical Characteristics

Parameter		Symbol	Min	Typ	Max	Units	Note
Supply Voltage	3.3V power	VCC	+3.1	+3.3	+3.5	V	-
	5V power		+4.75	+5.0	+5.25		-
Supply Current		I _{CC}	-	-	160	mA	-
Operating Case Temperature		TOP	0	-	+70	°C	1
			-40	-	+85		2
Data Rate		B	DC	500K	2000	Kbps	-

Note1:standard level

2:industrial level

Optical Parameters

Table 3-- L9-SD312M-20TTC Transceiver Optical Characteristics

(Ambient Operating Temperature $T_a = +25 \pm 5^\circ\text{C}$, $V_{CC} = 3.3$ or $5 \pm 0.2\text{V}$)

Parameter		Symbol	Min	Typ	Max	Units	Note
Transmitter							
Data rate		B	DC	-	2	Mbps	-
Output Center Wavelength		λ_c	1260	1310	1360	nm	-
Output Spectral width (RMS)		λ	-	-	4.0	nm	-
Average Optical Output Power		P_o	-8	-	-3	dBm	1,2
Extinction Ratio		ER	10	-	-	dB	-
Receiver							
Receiver Sensitivity		S	-	-	-18	dBm	1,2
Maximum Input Power		$P_{M_{AX}}$	-3	-	-	dBm	1,2
Operation Center Wavelength		λ_c	1260	-	1620	nm	-
SD	Deassert	LOS_A	-30	-	-	dBm	1,2
	Assert	LOS_B	-	-	-18	dBm	1,2
SD Hysteresis		SDHYS	0.5	-	-	dB	-

Note1: The optical power is launched into 9/125 μm SMF.

Note2: With 2Mbps.

Table 4--- Transceiver Electrical Characteristics

(Ambient Operating Temperature $T_a = +25 \pm 5^\circ\text{C}$, $V_{CC} = 3.3$ or $5.0 \pm 0.2\text{V}$)

Parameter		Symbol	Min	Typ	Max	Units	Note
Supply Voltage	3.3V power	VCC	+3.1	+3.3	+3.5	V	-
	5V power		+4.75	+5.0	+5.25		-
Supply Current		ICC	-	-	160	mA	-
Transmitter							
Data Input Voltage - Low		VIL	0	-	0.8	V	1
Data Input Voltage - High		VIH	2	-	VCC	V	1
Receiver							
Data Output Voltage - Low		VOL	0	-	0.4	V	1
Data Output Voltage - High		VOH	2.4	-	VCC	V	1

SD Output Voltage-Low	VOL	0	-	0.8	V	1
SD Output Voltage-High	VOH	2	-	VCC	V	1

Note1: (LV)TTL signal detect

Pin Definitions

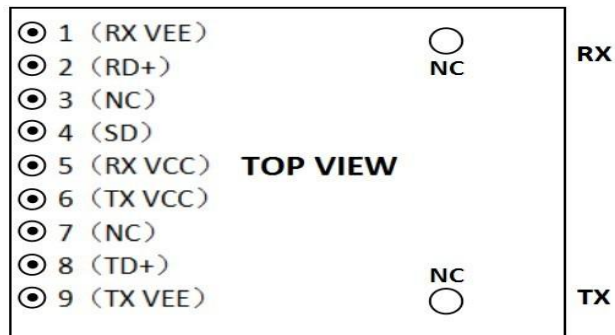
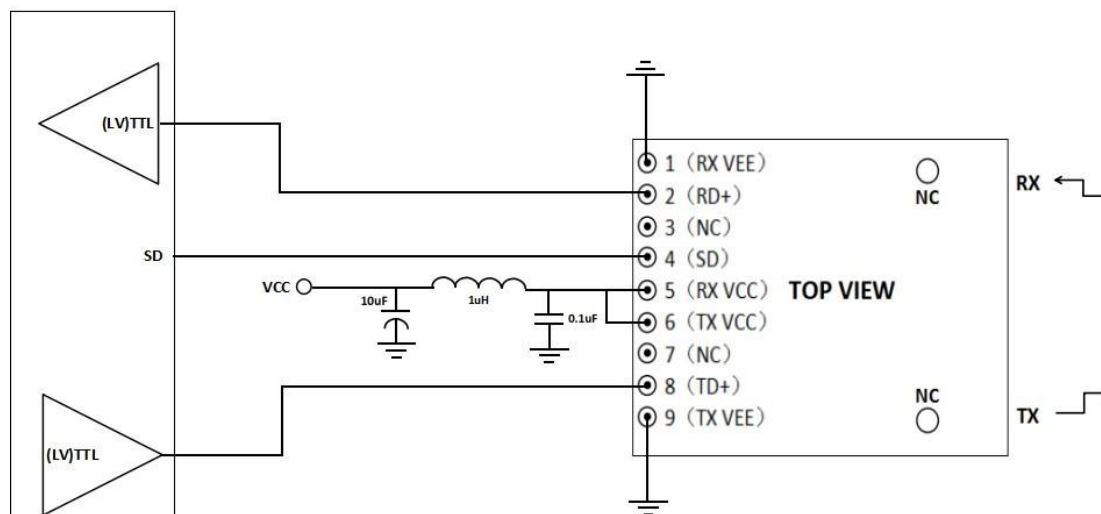


Table 5—Connector pin assignment

Pin #	Pin Name	Description	Note
1	Rx VEE	Receiver Signal Ground	-
2	RD+	Receiver Data Out	-
3	RD-	NC	-
4	SD	Signal Detect. (LV)TTL	
5	Rx VCC	Receiver Power Supply	-
6	Tx VCC	Transmitter Power Supply	-
7	TD-	NC	-
8	TD+	Transmitter Data In	-
9	Tx VEE	Transmitter Ground	-

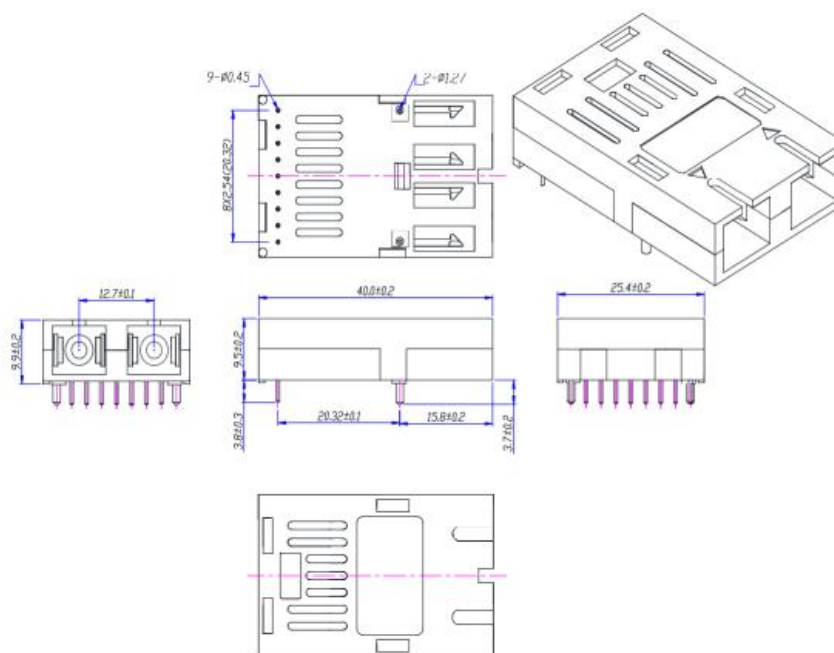
Note1: (LV)TTL-Normal optical input levels to the receiver result in logic "1" output,pull-up 10kΩresistor.

Recommended Circuit Schematic

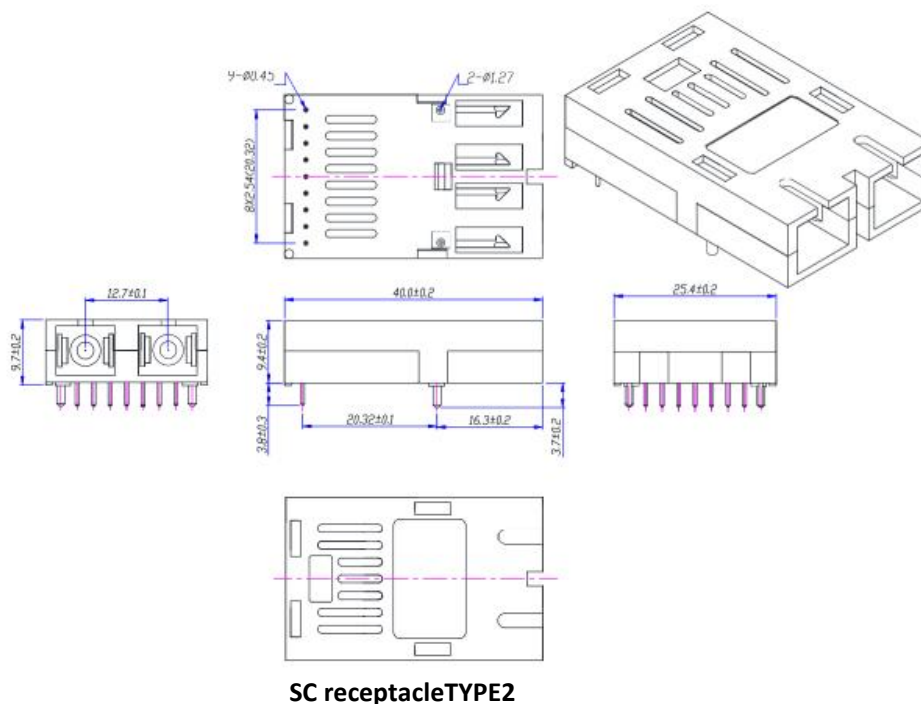


Recommended Circuit Schematic

Module Outline Drawing



SC receptacleTYPE1(common)



Order Information

Type	Fiber Type	Wave length(nm)	Fieber length(km)	Voltage	Operating temperature
L9-SD312M-02TTC	MM SC duplex	1310(FP)	2	3.3V	0 to +70°C
L9-SD312M-02TTI	MM SC duplex	1310(FP)	2	3.3V	-40°C to +85°C
L9-SD312M-20TTC	SM SC duplex	1310(FP)	20	3.3V	0 to +70°C
L9-SD312M-20TTI	SM SC duplex	1310(FP)	20	3.3V	-40°C to +85°C
L9-SD312M-40TTC	SM SC duplex	1310(FP)	40	3.3V	0 to +70°C
L9-SD312M-40TTI	SM SC duplex	1310(FP)	40	3.3V	-40°C to +85°C