

1 Features

- a. Dual single mode fibers with SC/FC/ST connector
- b. Single +5V or +3.3V Power Supply
- c. Up to 1250Mbps with PECL/LVPECL signal for control
- d. Up to 2km with MM fiber at 1310λc, 550M for 850λc



2 Applications

- Video monitor system
- Telephone system
- Data transmission system

3 Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	T _S	-40	+85	°C
Operating Temperature	T _{OP}	-20	+70	°C
Supply Voltage	V _{CC}	+3	+6	V
Voltage on Any Pin	V _{IN}	0	V _{CC}	V
Soldering Temperature ,Time	-		260°C, 10 S	°C,S

4 Recommended Operating Conditions

Parameter	Symbol	Min.	Typ	Max.	Unit
Ambient Temperature	T _{AMB}	-20	-	70	°C
Power Supply Voltage	V _{CC} -V _{EE}	5V	4.75	5	V
		3.3V	3	3.3	

5 Operating Conditions

5.1 Transmitter (T=25°C, Vcc=4.75~5.25V (+5V))

Parameter	Symbol	Min.	Typ	Max.	Unit
Center Wavelength	λ _c	830	850	870	nm
		1280	1310	1340	
Spectral width	Δλ	FP@RMS	2	4	nm
		VCSEL@RMS	-	-	
Output Power	TX1310nmFP or 850VCSEL	-19	-	-1	dBm
Extinction Ratio	ER	9	-	-	dB
Supply Current	I _{CC} T	-	-	150	mA
Data Input Voltage - Low	V _{IL-VCC}	-1.81	-	-1.48	V
Data Input Voltage - High	V _{IH-VCC}	-1.16	-	-0.85	V
Rise/Fall Time (20%---80%)	tr/tf			160	ps
Total	Jitter			90	ps
Input Differential Impedance	Z _{in}	90	100	110	Ω
Eye Diagram	ITU-T G.957 Compliant				

5.2 Receiver (T=25°C, Vcc=4.75~5.25V (+5V))

Parameter		Symbol	Min.	Typ	Max.	Unit
Wavelength Range		λ_c	1100	1550	1610	nm
			760	850	860	
Sensitivity		P_{MIN}	-	-	-21	dBm
MAX. Input Power (Saturation)		P_{MAX}	-3	-	-	
Signal Detect Assert		P_A	-	-	-22	
Signal Detect De-assert		P_D	-35	-	-	
Signal Detect Hysteresis		P_{HYS}	1	-2	4	dB
Supply Current		I_{CCR}	-	-	120	mA
Data output Voltage - High		V_{OH}	-1.16	-	-0.85	V
Data output Voltage - Low		V_{OL}	-1.81	-	-1.48	
Signal Detect Voltage – High		V_{SDHC} (IF TTL)	2	-	-	
Signal Detect Voltage – Low		V_{SDL} (IF TTL)	0	-	0.8	
Signal Detect Voltage – High		V_{SDHC} (IF PECL)	-1.1	-	-0.74	
Signal Detect Voltage – Low		V_{SDL} (IF PECL)	-2.0	-	-1.58	

Notes:

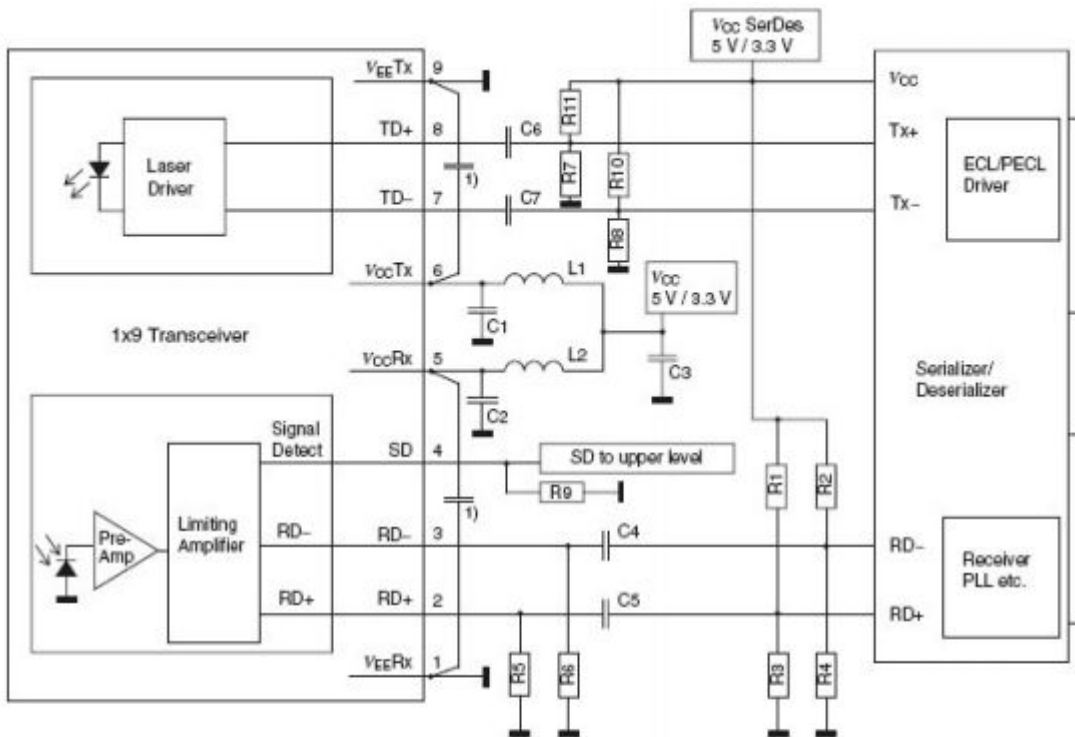
switch from a high state to a low state.

- 1) Value of output power and sensitivity can be customized according to the demand
- 2) An increase in optical power of data signal above the specified level will cause the Signal Detect to switch from a low state to a high state.
- 3) A decrease in optical power of data signal below the specified level will cause the Signal Detect to switch from a high state to a low state.

6 Pin Assignment

Pin	Descriptions	Pin	Descriptions
1	Rx VEER :Receiver GND	6	Tx VCCT : Transmitter VCC
2	Rx Data + : Receiver Data Out +	7	Tx Data- :Transmitter Data Input
3	Rx Data- : Receiver Data Out -	8	Tx Data+ :Transmitter Data Input
4	SD :Signal Detect Status Flag	9	Tx VEET : Transmitter GND
5	Rx VCCR: Receiver VCC		

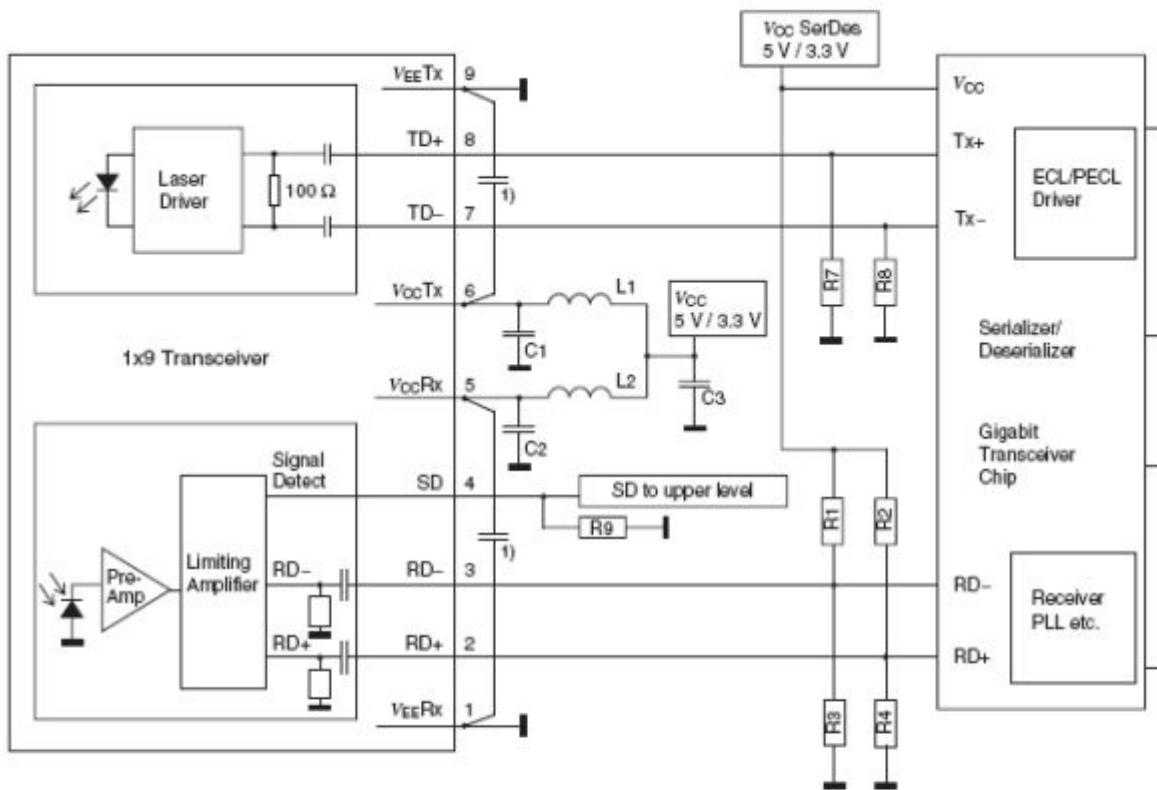
7 Recommend Circuit



- C1/2/3 = 4.7 μ F
- C4/5/6/7 = 100 nF
- L1/2 = 1 μ H
- R5/6 = 270 Ω (5 V)
- = 150 Ω (3.3 V)
- R7/8 = 127 Ω (5 V)
- = 82 Ω (3.3 V)
- (depends on SerDes chip used)
- R9 = 510 Ω (5 V)
- = 270 Ω (3.3 V)

- R10/11 = 82 Ω (5 V)
- = 127 Ω (3.3 V)
- (depends on SerDes chip used)
- Place R1/2/3/4 close to SerDes chip, depends on SerDes chip used.
- Place R5/6/7/8/10/11 close to 1x9 transceiver.

DC Coupling inside



- C1/2/3 = 4.7 μ F
- L1/2 = 1 μ H
- R1/2/3/4 = Depends on SerDes chip used
- R7/8 = Biasing (depends on SerDes chip)
- R9 = open (5 V/3.3 V TTL)
- = 510 Ω (5 V PECL)
- = 270 Ω (3.3 V PECL)

Place R1/2/3/4/7/8 close to SerDes chip.
Place R5/6 close to 1x9 transceiver.

AC Coupling inside

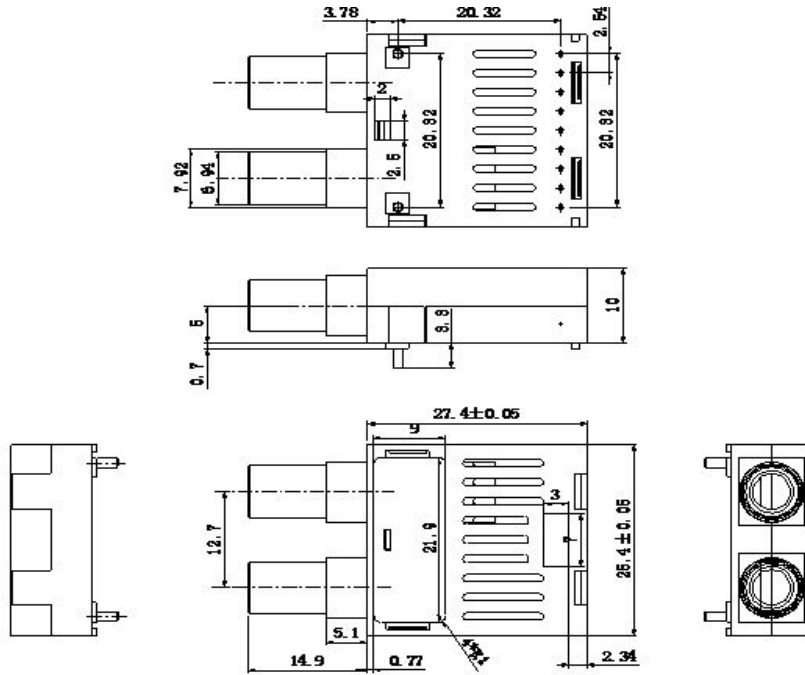
8 Ordering Information

8.1 Example

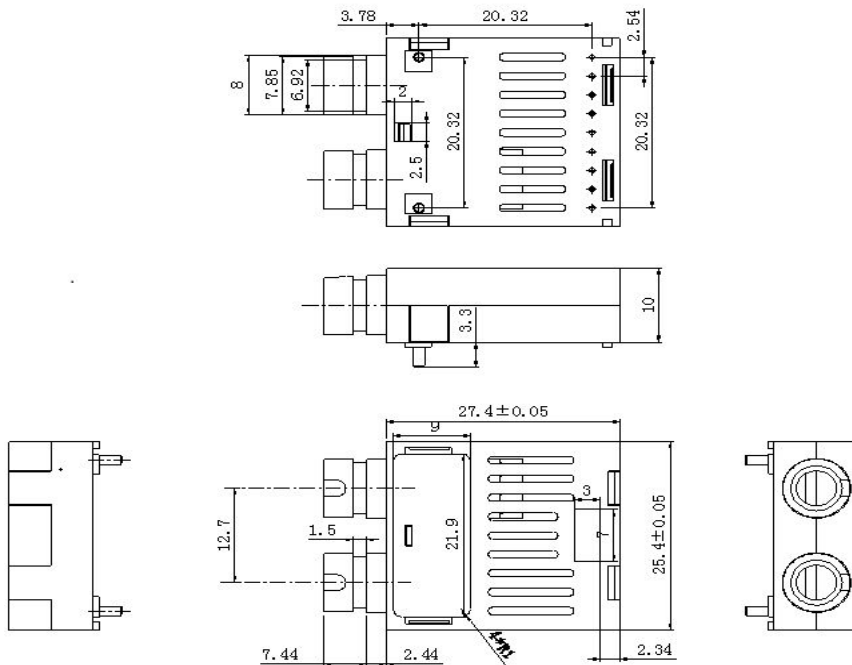
DTR 8 X 24 -V 1 5 SC-055

Sign	Mean	Description					
DTR	Module type	DTR= Dual fibers transceiver receptacle			DTP= Dual fibers transceiver pigtail		
8	Center wave TX	3=1310nm		8=850nm		5=1550nm	
x	Center wave RX	3=1310nm	5=1550nm	X=1100~1610nm IF 850λc X=760~860nm			
24	Transmitter Rate	01=52M	02=84m	03=155M	24=1.25G		48=2.5G
V	Laser type	F=FP		D=DFB		C=CWDM	V=VCSEL
1	Operating T	1=0~+70$^{\circ}$C		2=-40~+85 $^{\circ}$ C			
5	Voltage	3=3.3V DC		5=5V DC			
SC	Connector	SC=SC/UPC	SA=SC/APC	FC=FC	ST=ST		
055	Distance	022=220M		055=550M		2=2KM	10=10KM
		20=20KM		40=40KM		80=80KM	100=100KM

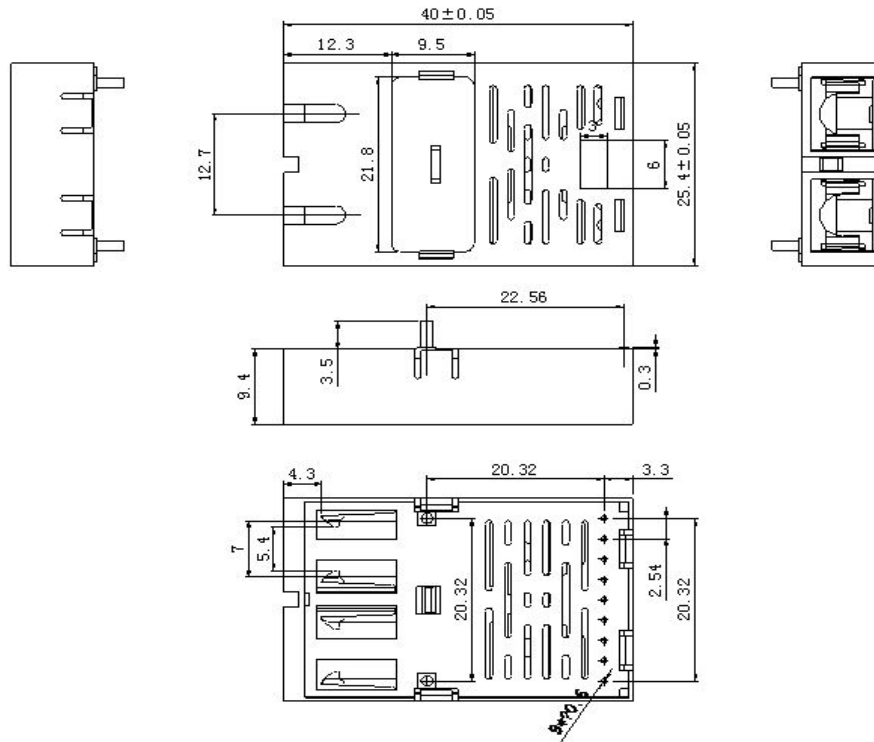
8.2.1 ST connector



8.2.2 FC connector



8.2.3 SC connector



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