

Multi-mode 1.25Gbps 1310nm 2X5 SFF Transceiver

Features

- LC duplex receptacle
- Standard 2 x 5 footprint
- 1310nm LD transmitter
- AC or DC coupled LVPECL/PECL compatible data input and output
- Transmitter disable input
- PECL or TTL signal detect output
- Single 3.3V or 5V power supply



Specifications

Parameter		Symbol	Min.	Typ.	Max.	Unit
Transmitter						
Data Rate (NRZ)		B	-	1250	-	Mb/s
Optical Output Power (avg.) ⁽¹⁾⁽²⁾⁽⁴⁾		P _o	-8	-	-	dBm
Extinction Ratio		ER	8.3	-	-	dB
Optical Wavelength		λ _c	1270	1310	1355	nm
Spectral Width		Δλ	-	-	2.5	nm
Output Rise Time (10-90%)		t _r	-	0.3	0.7	ns
Output Fall Time (10-90%)		t _f	-	0.3	0.7	ns
Data Input ⁽⁹⁾	DC Coupled	V _{IL} V _{IH}	V _{CC} -1.810 V _{CC} -1.165	- -	V _{CC} -1.475 V _{CC} -0.880	V V
	AC Coupled (Differential)	V _I	0.25	-	1.6	V
Tx Disable Input		V _{DIL}	0	-	0.8	V
		V _{DIH}	2	-	V _{CC}	V
Supply Voltage		V _{CC}	3.10	3.3	3.50	V
			4.75	5.0	5.25	V
Supply Current		I _{CC}	-	-	110	mA
Receiver						
Data Rate (NRZ)		B	-	1250	-	Mb/s
Optical Input (avg.) Sensitivity ⁽¹⁾⁽⁴⁾		P _{IN}	-	-	-20	dBm
Optical Wavelength		λ	1100	-	1600	nm
Output Rise Time (10-90%)		t _r	-	-	0.4	ns
Output Fall Time (10-90%)		t _f	-	-	0.4	ns
Data Output ⁽⁹⁾	DC Coupled	V _{OL} V _{OH}	V _{CC} -1.840 V _{CC} -1.045	- -	V _{CC} -1.62 V _{CC} -0.88	V V
	AC Coupled (Differential)	V _I	0.6	-	1.8	V
Signal Detect Asserted (avg.)		P _A	-	-	-20	dBm
Signal Detect Deasserted (avg.)		P _D	-25	-	-	dBm
Hysteresis		P _{HYS}	-	3	-	dB
Supply Voltage		V _{CC}	3.10	3.3	3.50	V
			4.75	5.0	5.25	V
Supply Current		I _{CC}	-	-	100	mA

Notes :

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- (1) With 0.275 NA, 62.5/125 μ m fiber.
- (2) Driven with a differential signal.
- (3) Transmitter eye mask diagram is compliant to IEEE802.3z Eye Diagram.
- (4) 2⁷ -1 PRBS, BER= 10⁻¹².
- (5) Compatible with LVPECL and PECL logic levels.
- (6) The transmitter output should not be viewed directly.

Absolute Maximum Ratings

Parameter		Min.	Max.	Unit
Operating Temperature	-1	0	70	°C
	-2	-40	85	°C
Storage Temperature		-40	100	°C
Lead Soldering Limits		-	240/10	°C /sec
Supply Voltage	5V	-0.2	7	V
	3.3V	-0.2	4	V

Ordering Information

T R 1 3 M M 3 - 1 L L C A R 1

Operating Temperature Range :

1 : 0 ~ 70°C

2 : -40 ~ 85°C

Data Coupling & SD Output Level :

Symbol	Tx Coupling	Rx Coupling	SD
C	AC	DC	PECL
D	AC	DC	TTL
E	AC	AC	PECL
F	AC	AC	TTL
G	DC	DC	PECL
H	DC	DC	TTL
I	DC	AC	PECL
J	DC	AC	TTL

Supply Voltage :

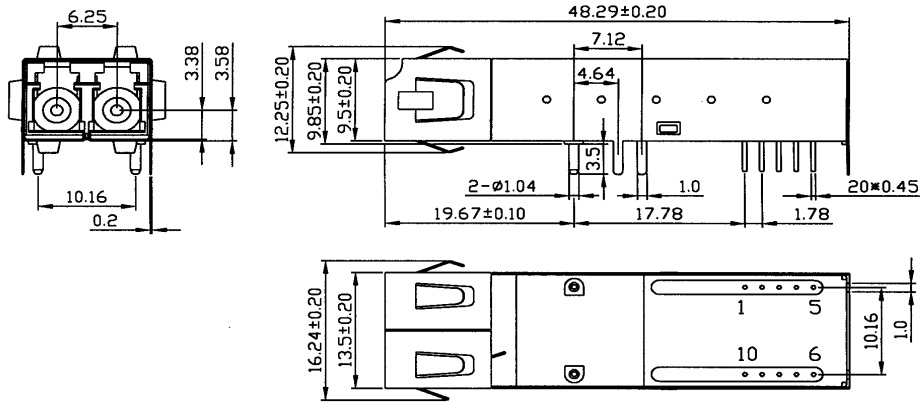
5 : 5V

3 : 3.3V

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Outline Drawing

2*5



UNIT : mm

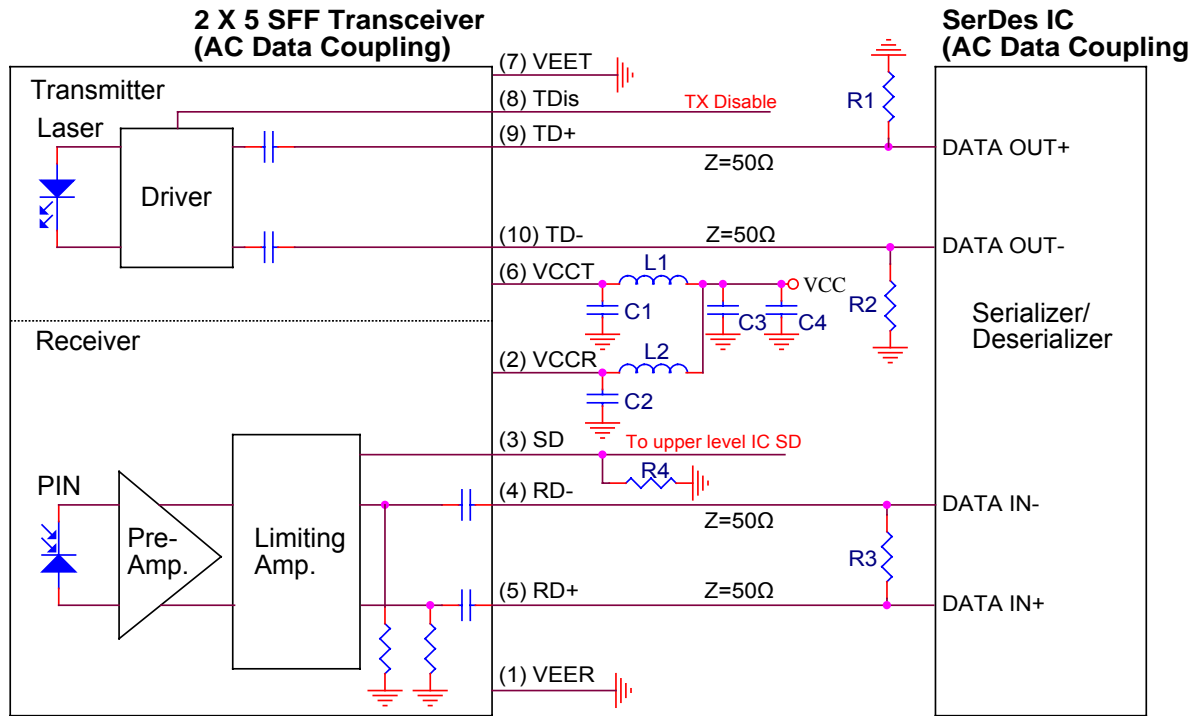
Pinout Description

Pin No.	Symbol	Description
1	V_{EER}	Receiver Ground
2	V_{CCR}	Receiver Power Supply (5V/3.3V)
3	SD	Receiver Signal Detect
4	RD-	Receiver Data Out (Inverted)
5	RD+	Receiver Data Out
6	V_{CCT}	Transmitter Power Supply (5V/3.3V)
7	V_{EET}	Transmitter Ground
8	TDis	Input Logic Low Level to Switch Transmitter "ON" Input Logic High Level to Switch Transmitter "OFF"
9	TD+	Transmitter Data in
10	TD-	Transmitter Data In (Inverted)

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Application Notes

Recommended AC Coupling Interface Circuit :

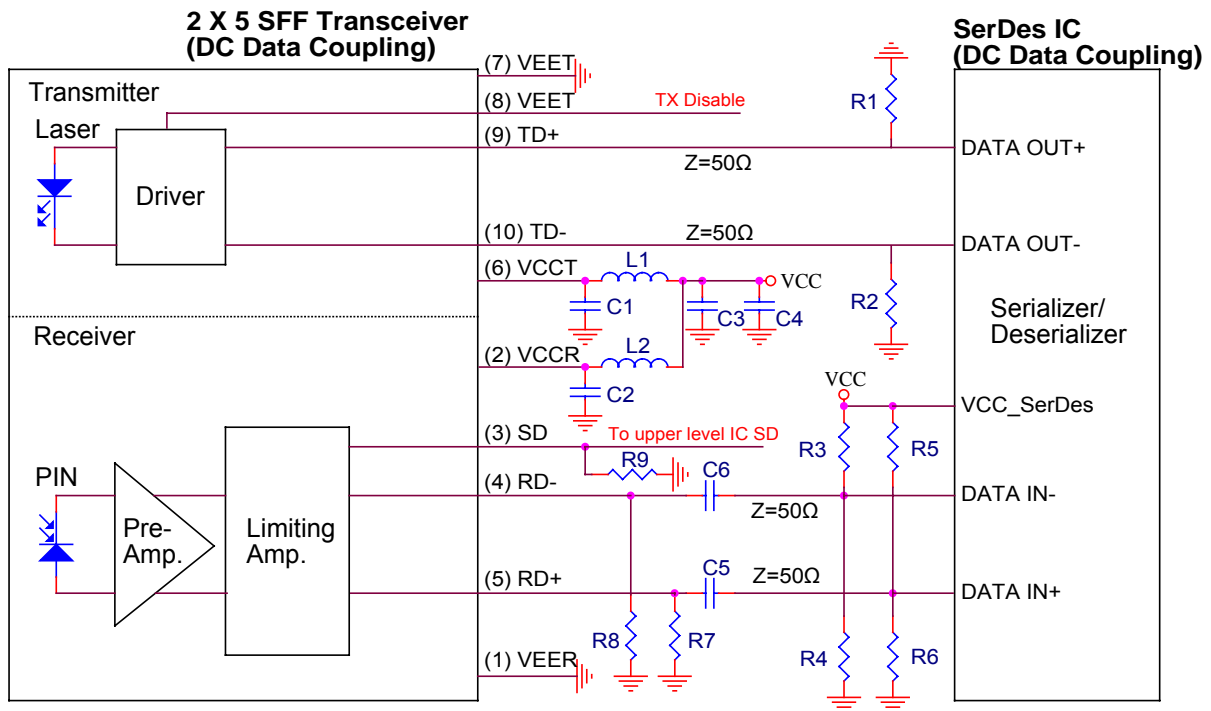


L1=L2=1 μ H or ferrite bead
 C1=C2=C3=0.1 μ F
 C4=10 μ F
 R1, R2, R3 depends on SerDes IC specification.
 (Consult the SerDes IC application information)
 R4=510 Ω

NOTE :
 1. Transmission line characteristic impedance $Z=50\Omega$.
 2. R1, R2, R3 as close to SerDes IC as possible.

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Recommended DC Coupling Interface Circuit :



$L1=L2=1\mu\text{H}$ or ferrite bead
 $C1=C2=C3=C5=C6=0.1\mu\text{F}$
 $C4=10\mu\text{F}$
 $R1, R2, R3, R4, R5, R6$ depends on SerDes IC specification.
 (Consult the SerDes IC application information)
 $R7=R8=270\Omega$ ($VCC=3.3\text{V}$)
 $=510\Omega$ ($VCC=5\text{V}$)
 $R9=510\Omega$

NOTE :
 1. Transmission line characteristic impedance $Z=50\Omega$.
 2. $R1, R2, R3, R4, R5, R6$ as close to SerDes IC as possible
 3. $R7, R8$ as close to 2X5 Transceiver as possible.

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