

Fiber Channel 2.125Gbps 850nm Multimode Optical Transceiver

Features

- 2.125Gb/s Fiber Channel application
- 850nm VCSEL transmitter with automatic power control
- Industrial standard 1x9 pin footprint
- Duplex SC/ST/FC single mode connector interface
- Receiver signal detect function
- Wide dynamic rang receiver with AGC
- AC coupled LVPECL compatible data input and output
- Single supply 3.3V



Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Transmitter					
Data Rate (NRZ)	B	-	2.125	-	Gb/s
Optical Output Power (avg.) ^{(1) (2) (3)}					
-1	P _o	-10	-	-5	dBm
-2	P _o	-5	-	0	dBm
Extinction Ratio	ER	9	-	-	dB
Optical Wavelength	λ_c	830	850	860	nm
Spectral Width (RMS)	$\Delta\lambda$	-	-	0.85	nm
Output Rise Time (20-80%)	t _r	-	-	150	ps
Output Fall Time (20-80%)	t _f	-	-	150	ps
Data Differential Input Voltage	V _i	500	-	2400	mV _{p-p}
Supply Voltage	V _{CC}	2.97	3.3	3.63	V
Supply Current	I _{CC}	-	-	110	mA
Receiver					
Data Rate (NRZ)	B	-	2.125	-	Gb/s
Optical Input (avg.) Sensitivity ^{(1) (5)}	P _{IN}	-	-	-15	dBm
Saturation	P _{SAT}	-3	0	-	dBm
Optical Wavelength	λ	770	850	860	nm
Output Rise Time (20-80%)	t _r	-	-	150	ps
Output Fall Time (20-80%)	t _f	-	-	150	ps
Data Differential Output Voltage	V _o	600	-	1200	mV _{p-p}
Signal Detect Asserted (avg.)	P _A	-	-	-15	dBm
Signal Detect Deasserted (avg.)	P _D	-27	-	-	dBm
Hysteresis	P _{HYS}	0.5	2	-	dB
Supply Voltage	V _{CC}	2.97	3.3	3.63	V
Supply Current	I _{CC}	-	-	100	mA

Notes :

- (1) With 0.275 NA, 62.5/125 μ m fiber.
- (2) Driven with a differential signal.
- (3) Class 1 eye safe per FDA and IEC.
- (4) Eye mask diagram is compliant to FC-PI-2 Eye Diagram.
- (5) 2⁷ -1 PRBS, BER= 10⁻¹².
- (6) The transmitter output should not be viewed directly.



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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		-0.2	4	V

Ordering Information

SNS-T R 8 5 M M 4 - □ V □ □ 3 9 R 1 □ □

Operating Temperature Range :

1 : 0 ~ 70°C

2 : -40 ~ 85°C

Data Coupling & SD Output Level :

Symbol	Tx Coupling	Rx Coupling	SD
E	AC	AC	PECL
F	AC	AC	TTL

Connector Type :

SC : SC Connector

FC : FC Connector

ST : ST Connector

Tx Output Power Grade :

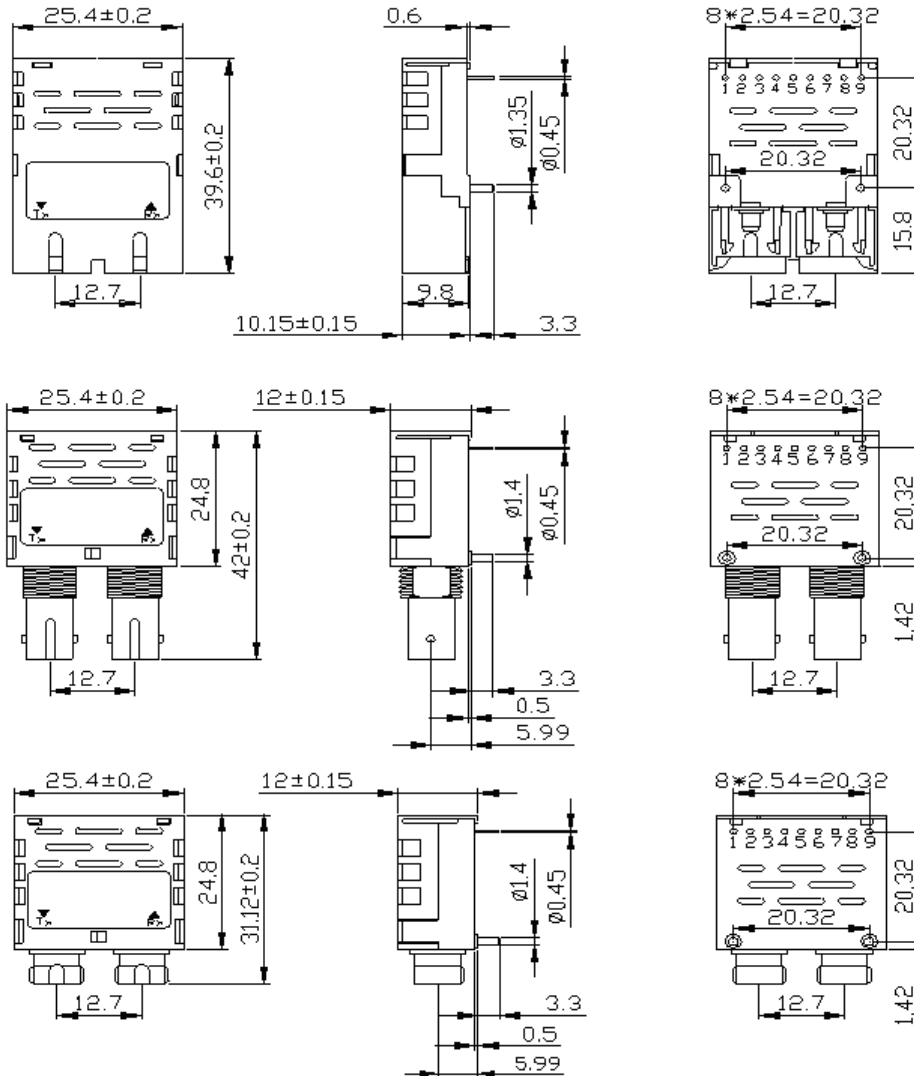
(refer to Specifications)

1 : -1

2 : -2

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Outline Drawing



UNIT : mm

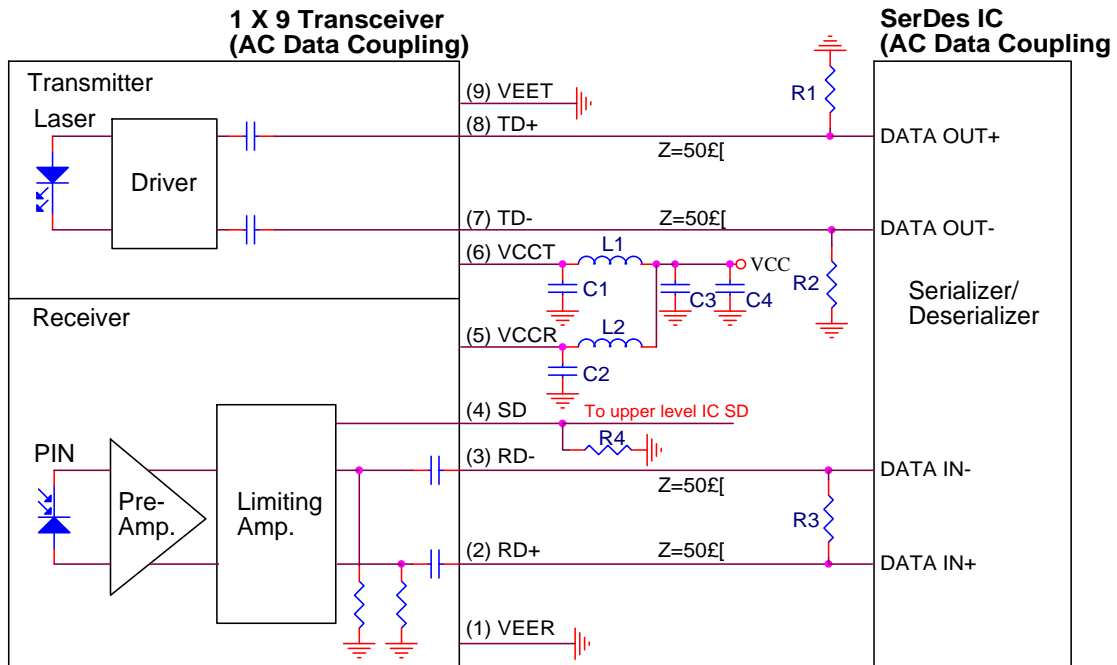
Pinout Description

Pin No.	Symbol	Description
1	V_{EER}	Receiver Ground
2	RD+	Receiver Data Out
3	RD-	Receiver Data Out (Inverted)
4	SD	Receiver Signal Detect
5	V_{CCR}	Receiver Power Supply
6	V_{CCT}	Transmitter Power Supply
7	TD-	Transmitter Data In (Inverted)
8	TD+	Transmitter Data in
9	V_{EET}	Transmitter Ground

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Application Notes

Recommended Interface Circuit :



$L1=L2=1\text{gH}$ or ferrite bead
 $C1=C2=C3=0.1\text{gF}$
 $C4=10\text{gF}$
 $R1, R2, R3$ depends on SerDes IC specification.
 (Consult the SerDes IC application information)
 $R4=510\Omega$

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