METED3-N0I-8VT1

Features

- Up to 10.5 Gbps data rate
- 850nm VCSEL Laser and PIN photo detector
- Duplex LC receptacle optical interface compliant
- Single +3.3V power supply
- AC coupling of LVPECL signals
- International Class1 laser safety certified
- Operating temperature range:

  Industry: -40℃~85℃
- RoHS Compliant

Application

- 10GBASE-SR
- 10G Fiber Channel
- Data center

Standard

- SFF-8431 SFP+ Electrical MSA
- SFF-8432 SFP+ Mechanical MSA
- RoHS complaint

General Description

Endurance is a family of compact transceiver modules designed for Fibre Channel and Ethernet optical data links which enables the compact form-factor and low power consumption. Because Endurance has two through-hole mountingposts and the pins are soldered directly to the board, it does not use a host cage. The compactmodule saves valuable board space and allows multiples of them to be mounted side-by-sideon a Printed Circuit Board (PCB) for high-density port counts.

Specification

Absolute Maximum Ratings				
Parameter	**Symbol**	**Min**	**Max**	**Unit**
Storage temperature	TS	-55	85	℃
Power Supply Voltage	Vcc	-0.5	+4	V
Relative Humidity	RH	5	95	%

Recommended Operating Conditions					
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**
Operating CaseTemperature (Industry)	Tc	-40		85	℃
Power Supply Voltage	Vcc	3.135	3.3	3.465	V
Supply Current	Icc			250	mA
Data Rate			10.3125		Gbps
Fiber Length 50μm core MMF (2000MHz-km)		-		300	M

Electrical Characteristics						
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**	**Notes**
Transmitter differential input voltage	Vin,pp	180		700	mV	
Receiver differential output Voltage	Vout,pp	300		850	mV	
SD	Voh	2.4		Vcc+0.3	V	LVTTL
	Vol	-0.3		0.4	V	LVTTL
TX Disable	Vih	2		Vcc+0.3	V	LVTTL

	Vil	-0.3		0.8	V	LVTTL

Optical transmitter Characteristics						
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**	**Notes**
Launched Power (avg.)	Pout	-6		-1	dBm	
Operating Wavelength Range	λc	840	850	860	nm	
Spectral Width	Δλ			0.45	nm	
Extinction Ratio	ER	3.5			dB	1
Optical Rise/Fall Time	Tris/Tfall	28		50	Ps	2
Transmitter and Dispersion Penalty	TDP			3.9	dB	
Optical Tx Output disable	Pdis			-45	dBm	
Output Eye Diagram	Complies with IEEE802.3ae eye masks when filtered					
Optical receiver Characteristics						
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**	**Notes**
Receiver Sensitivity	S			-11	dBm	3
Wavelength Range	λc	840		860	nm	
Receiver Reflectance				-12	dB	
Optical Power Input Overload	P_{in-max}	-1			dBm	3
LOS Optical De-assert	Pd			-13	dBm	3
LOS Optical Assert	Pa	-30				
LOS hysteresis		0.5		4	dB	

Note1. For the measurements, the device was driven with 2^31-1 PRBS pattern

Note2. Optical transition time is the time interval required for the rising or falling edge of an optical pulse to transition between the 20% and 80% amplitudes relative to the logical 1 and 0 levels.

Note3. Measured with a PRBS 2^{31}-1 test pattern, @10.3125Gbps, ER=4dB, BER<10^{-12}

Pin definition

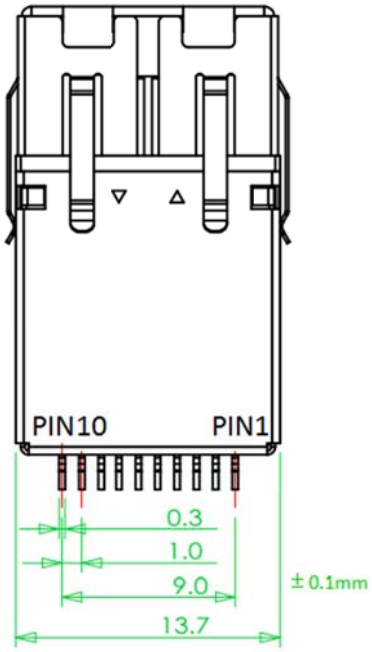


Figure 1 Endurance Pad assignment Top View

Pin	Symbol	Name/Description	Note
1	TD+	Transmitter Non-Inverted DATA in. AC Coupled. CML-I	1
2	VEET	Transmitter Ground	2
3	TD-	Transmitter Inverted DATA in. AC Coupled. CML-I	1
4	VCCT	Transmitter Power Supply	3
5	RX_SD	Receiver signal detect High: signal detected Low: loss of signal	4
6	TX_DIS	Transmitter Disable High: Transmitter off Low: Transmitter on	5
7	RD+	Receiver Non-inverted DATA out. AC Coupled. CML-O	6
8	VCCR	Receiver Power Supply	3
9	RD-	Receiver Inverted DATA out. AC Coupled. CML-O	6
10	VEER	Receiver Ground	1

Endurance Module PIN Definition

Note1. TD-/+: These are the differential transmitter inputs. They are CML AC-coupled with 100 Ohm terminal resistor matching internal.

Note2. The module signal ground contacts.

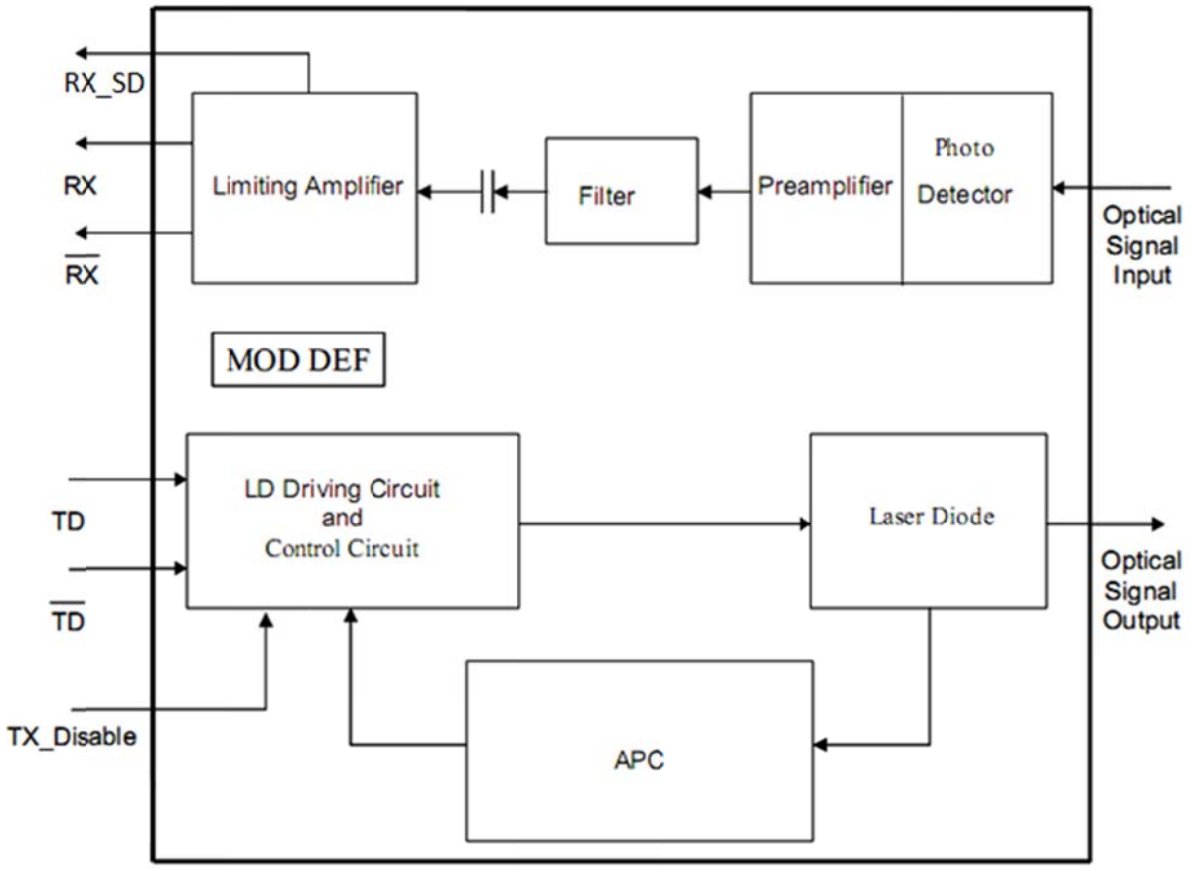
Note3. VCCR and VCCT are the receiver and transmitter power supplies.

Note4. Module RX_SD need pull up to VCCR with a 4.7k~10k Ohm resistor on host board.

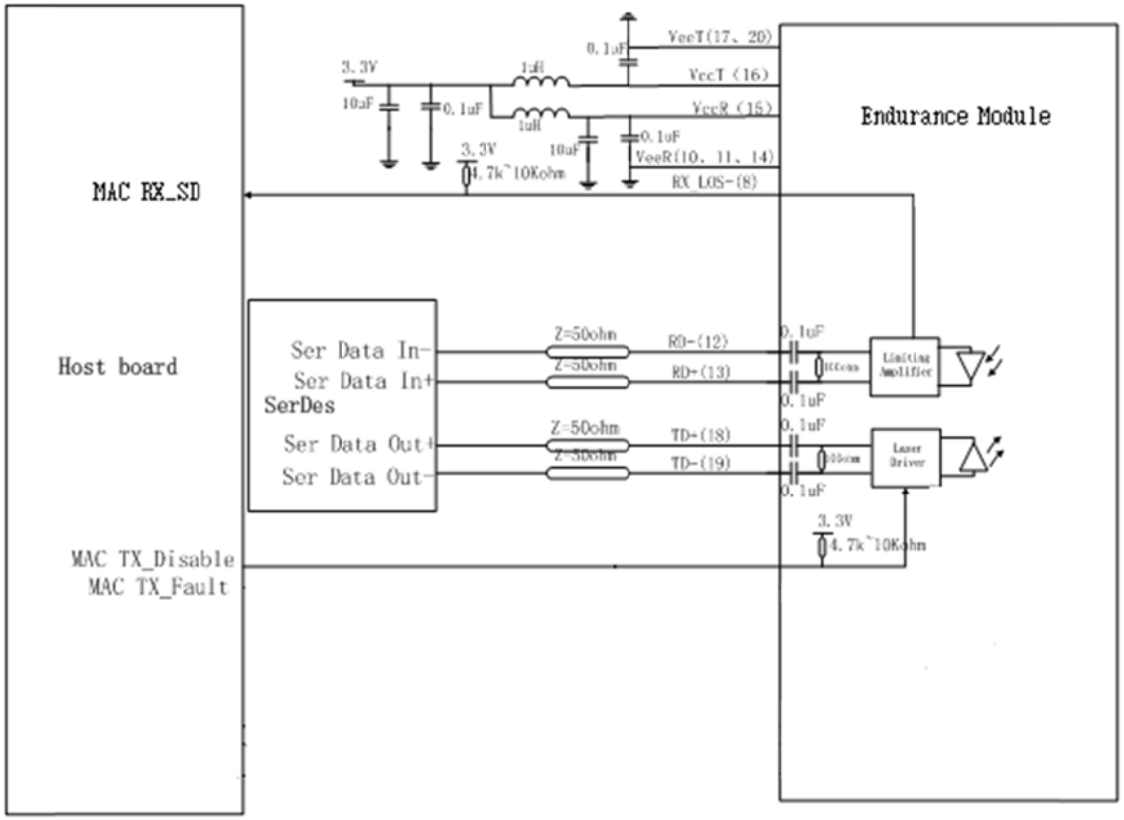
Note5. This pin should be pulled up to Vcct with a 4.7k~10k Ohm resistor in modules.

Note6. RD -/+: These are the differential receiver outputs. They are CML AC-coupled with 100 Ohm terminal resistor matching internal.

Block Diagram

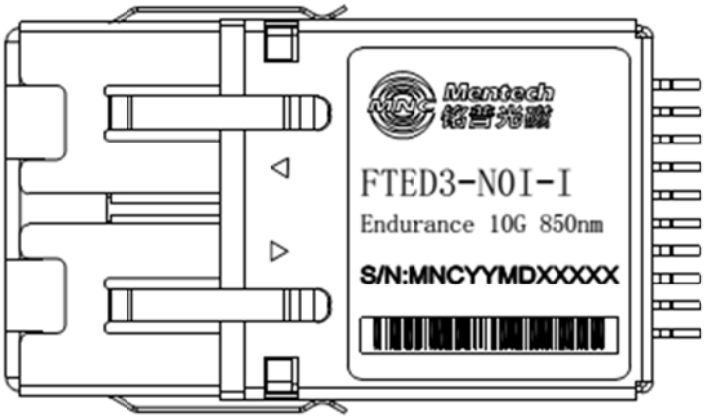


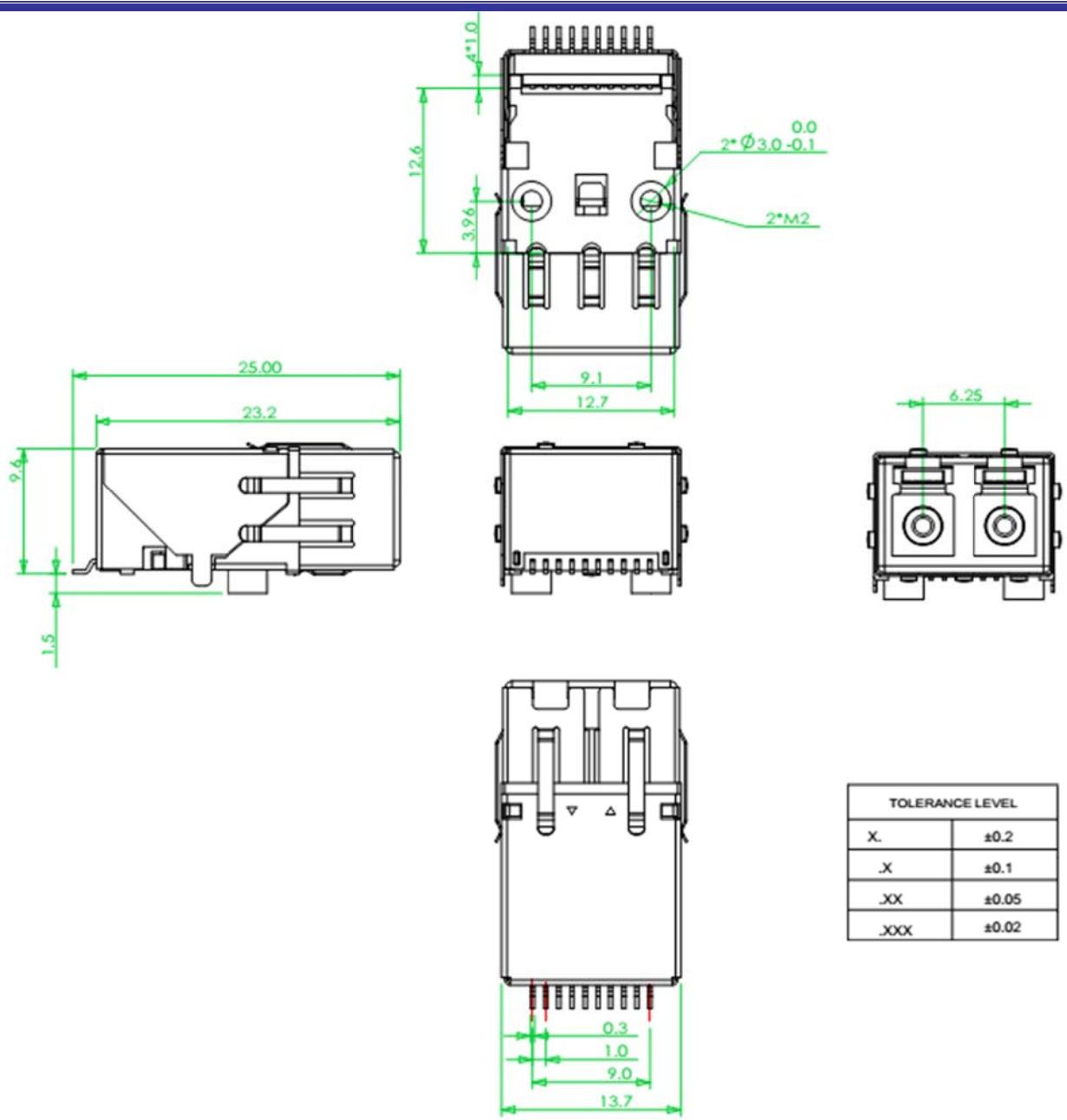
Typical application Circuit



Package Outline

Dimensions are in millimeters.





TOLERANCE LEVEL	
X.	±0.2
.X	±0.1
.XX	±0.05
.XXX	±0.02

Ordering information

Part. No	Specifications								
	Pack	Rate (Gbps)	Tx (nm)	Po (dBm)	RX	Sen (dBm)	Temp (℃)	Reach (m)	DDM
METED3-N0I-8VT1	Endurance	10.3	850	-6~-1	PIN	＜-11	-40~85	300	N