

TITLE 25G T12R12 mini SN-MT	DOC No. RFD-20260323101-001	
	REVISION : 01	AUTHORIZED BY : Hawk Rong
	DATE : 2026.09.05	CLASSIFICATION : Optical Transceiver

1. Product Features

- Wide Operating Temperature(0°C~70°C)
- 12x25Gbps 850nm VCSEL-based Transmitter
- Maximum Link Length of 50m via Multimode Fiber(MMF)
- Differential AC coupled TX input
- Differential AC coupled RX output
- mini-SNMT/UPC pig-tails
- Support EQ/DEMP/RX SWING adjust
- Support DDMI TEMP readout

2. Product Description

Product Name And Series Number(s)

25G T12R12 mini SN-MT

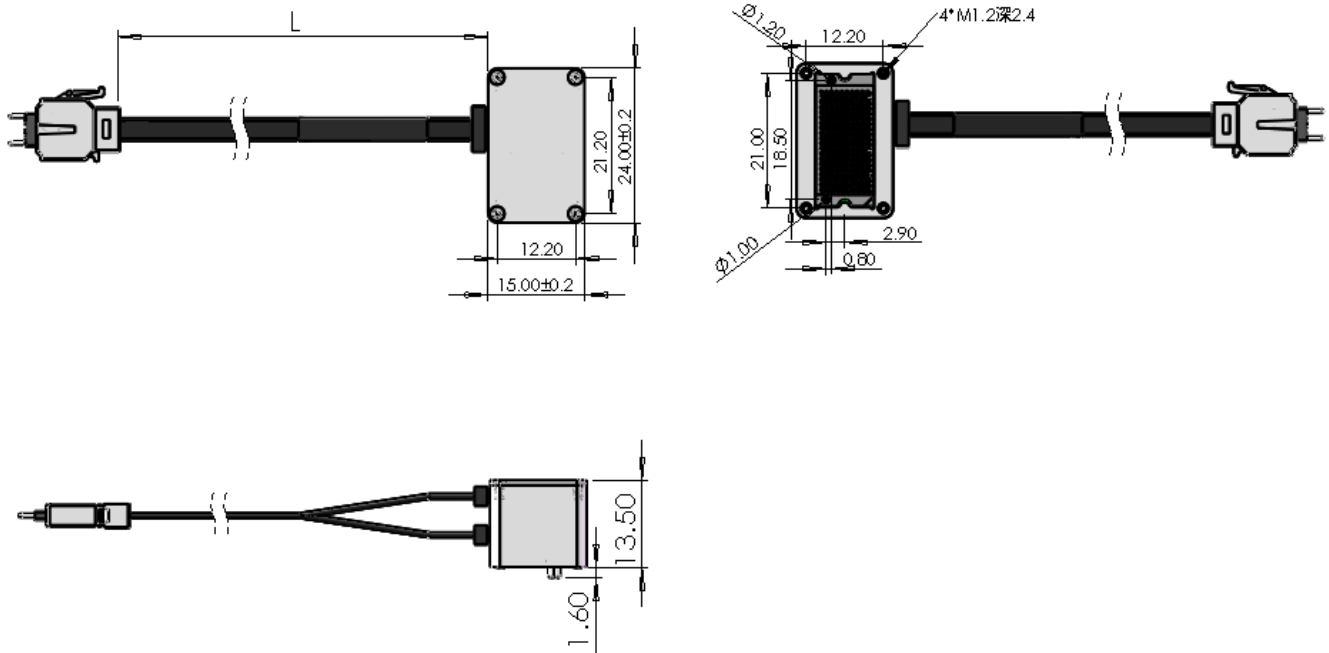
JPC PN	Data Rate	Wavelength (nm)	Distance	Power (dBm)	Sen. (dBm)	Connector	Temp.
PAB**RM00**M-1	25G	850 nm	1~50m	-8.4~2.4dBm	-9dBm	N	C

Note-1: ** Indicates the customer code.

Note-2: ** Indicates the length.

2.1 DIMENSIONS, MATERIALS, PLATINGS AND MARKING

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L Tolerance Table	
$L < 7M$	$L + 100 / - 0 mm$
$L \geq 7M$	$L + 2\%L / - 0 mm$

Unit is millimeter. All dimensions are $\pm 0.1mm$ unless otherwise specified

3. AbsoluteMaximum Ratings

Parameter	Symbol	Conditions	Min.	Max.	Unit
Storage Temperature	$T_{Storage}$		-40	+85	°C
Relative Humidity	RH		0	+85	%

4. Recommended Operating Conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Case Temperature	T_C		0		70	°C
Power Supply Voltage	V_{CC}		3.135	3.3	3.465	V
Signaling Rate each Channel				25.78125		Gbps

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Receiver Differential Data Output			---	100		Ohm
Operating Distance	D	@ OM3 MMF			50	m

5. Electrical Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power Consumption					7.5	W
Supply Current	Icc				2272	mA

6. Transmitter Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Signaling rate, each lane (range)	GBb			25.78125		GBb
Center Wavelength	λ		840	850	860	nm
RMS Spectral Width	SW				0.6	nm
Average launch power, each lane	Pf		-8.4		2.4	dBm
Optical Modulation Amplitude (OMA), each lane	TxOMA		-6.4		3	dBm
Average launch power of OFF transmitter, each lane					-30	dBm
Extinction ratio	ER		3			dB

7. Receiver Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Signaling rate, each lane (range)	GBb			25.78125		GBb
Center Wavelength	λ		840	850	860	nm
Damage threshold			3.4			dBm
Average power at receiver input, each lane			-9		2.4	dBm
Receive power, each lane (OMA)					3	dBm
Receiver sensitivity (OMA)	S _{OMA}	BER@5e-5			-7.2	dBm
Receiver reflectance					-12	dB

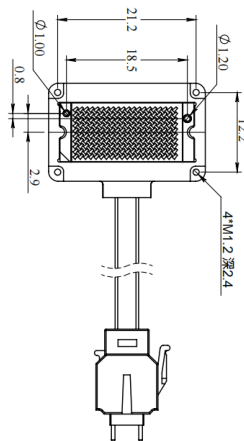
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LOS Assert	LOS _A		-30			dBm
LOS De-Assert	LOS _D				-10.5	dBm
LOS Hysteresis			0.5			dB

Note1: Measured at 25.78125Gb/s, ER>4dBm, PRBS 2³¹-1 and BER better than or equal to 5E-5;

8. Applications Note:

Pin Definitions



Bottom view

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	RXSD	VCC	A
GND	Z11N	Z11P	GND	GND	Z08N	Z08P	GND	GND	Z05N	Z05P	GND	GND	Z02N	Z02P	GND	GND	GND	GND	VCC	B
GND	GND	GND	Z10N	Z10P	GND	GND	Z07N	Z07P	GND	GND	Z04N	Z04P	GND	GND	Z01N	Z01P	GND	GND	VCC	C
GND	Z12N	Z12P	GND	GND	Z09N	Z09P	GND	GND	Z06N	Z06P	GND	GND	Z03N	Z03P	GND	GND	GND	GND	GND	D
GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	SDA	GND	GND	E
GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	SCL	GND	GND	F
GND	A12N	A12P	GND	GND	A09N	A09P	GND	GND	A06N	A06P	GND	GND	A03N	A03P	GND	GND	GND	GND	GND	G
GND	GND	GND	A10N	A10P	GND	GND	A07N	A07P	GND	GND	A04N	A04P	GND	GND	A01N	A01P	GND	GND	VCC	H
GND	A11N	A11P	GND	GND	A08N	A08P	GND	GND	A05N	A05P	GND	GND	A02N	A02P	GND	GND	GND	GND	VCC	I
GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	LDIS	INTL	RESETL	VCC	J

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Pin Function Definitions

PIN	Logic	Symbol	Name/Description	Note
A1		VCC	+3.3V Power Supply	
B1		VCC	+3.3V Power Supply	
C1		VCC	+3.3V Power Supply	
H1		VCC	+3.3V Power Supply	
I1		VCC	+3.3V Power Supply	
J1		VCC	+3.3V Power Supply	
A2	LVTTL-O	RXSD	RX Signal Detected	
J2	LVTTL-I	RESETL	Input. Low: reset MCU High: norma work	
E3	LVC MOS-I/O	SDA	2-Wire Serial Interface Data	
F3	LVC MOS-I/O	SCL	2-Wire Serial Interface Clock	
J3	LVTTL-O	INTL	Interrupt output	
J4	LVTTL-I	LDIS	Input. Low: norma work High: disable tx output	
C4	CML-I	Z01P	Transmitter Non-Inverted Data Input	
C5	CML-I	Z01N	Transmitter Inverted Data Input	
B6	CML-I	Z02P	Transmitter Non-Inverted Data Input	
B7	CML-I	Z02N	Transmitter Inverted Data Input	
D6	CML-I	Z03P	Transmitter Non-Inverted Data Input	
D7	CML-I	Z03N	Transmitter Inverted Data Input	
C8	CML-I	Z04P	Transmitter Non-Inverted Data Input	
C9	CML-I	Z04N	Transmitter Inverted Data Input	
B10	CML-I	Z05P	Transmitter Non-Inverted Data Input	
B11	CML-I	Z05N	Transmitter Inverted Data Input	
D10	CML-I	Z06P	Transmitter Non-Inverted Data Input	
D11	CML-I	Z06N	Transmitter Inverted Data Input	
C12	CML-I	Z07P	Transmitter Non-Inverted Data Input	
C13	CML-I	Z07N	Transmitter Inverted Data Input	

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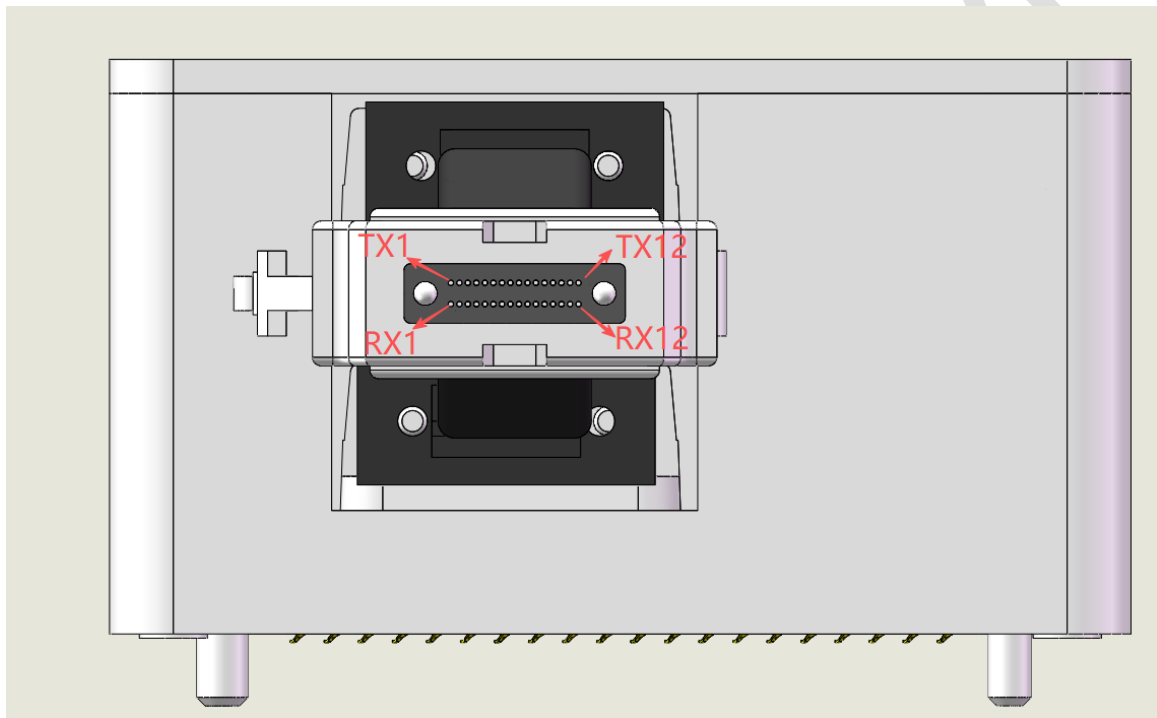
B14	CML-I	Z08P	Transmitter Non-Inverted Data Input	
B15	CML-I	Z08N	Transmitter Inverted Data Input	
D14	CML-I	Z09P	Transmitter Non-Inverted Data Input	
D15	CML-I	Z09N	Transmitter Inverted Data Input	
C16	CML-I	Z10P	Transmitter Non-Inverted Data Input	
C17	CML-I	Z10N	Transmitter Inverted Data Input	
B18	CML-I	Z11P	Transmitter Non-Inverted Data Input	
B19	CML-I	Z11N	Transmitter Inverted Data Input	
D18	CML-I	Z12P	Transmitter Non-Inverted Data Input	
D19	CML-I	Z12N	Transmitter Inverted Data Input	
H4	CML-O	A01P	Receiver Non-Inverted Data Output	
H5	CML-O	A01N	Receiver Inverted Data Output	
I6	CML-O	A02P	Receiver Non-Inverted Data Output	
I7	CML-O	A02N	Receiver Inverted Data Output	
G6	CML-O	A03P	Receiver Non-Inverted Data Output	
G7	CML-O	A03N	Receiver Inverted Data Output	
H8	CML-O	A04P	Receiver Non-Inverted Data Output	
H9	CML-O	A04N	Receiver Inverted Data Output	
I10	CML-O	A05P	Receiver Non-Inverted Data Output	
I11	CML-O	A05N	Receiver Inverted Data Output	
G10	CML-O	A06P	Receiver Non-Inverted Data Output	
G11	CML-O	A06N	Receiver Inverted Data Output	
H12	CML-O	A07P	Receiver Non-Inverted Data Output	
H13	CML-O	A07N	Receiver Inverted Data Output	
I14	CML-O	A08P	Receiver Non-Inverted Data Output	
I15	CML-O	A08N	Receiver Inverted Data Output	
G14	CML-O	A09P	Receiver Non-Inverted Data Output	
G15	CML-O	A09N	Receiver Inverted Data Output	
H16	CML-O	A10P	Receiver Non-Inverted Data Output	
H17	CML-O	A10N	Receiver Inverted Data Output	
I18	CML-O	A11P	Receiver Non-Inverted Data Output	
I19	CML-O	A11N	Receiver Inverted Data Output	

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G18	CML-O	A12P	Receiver Non-Inverted Data Output	
G19	CML-O	A12N	Receiver Inverted Data Output	
Others		GND	Ground	

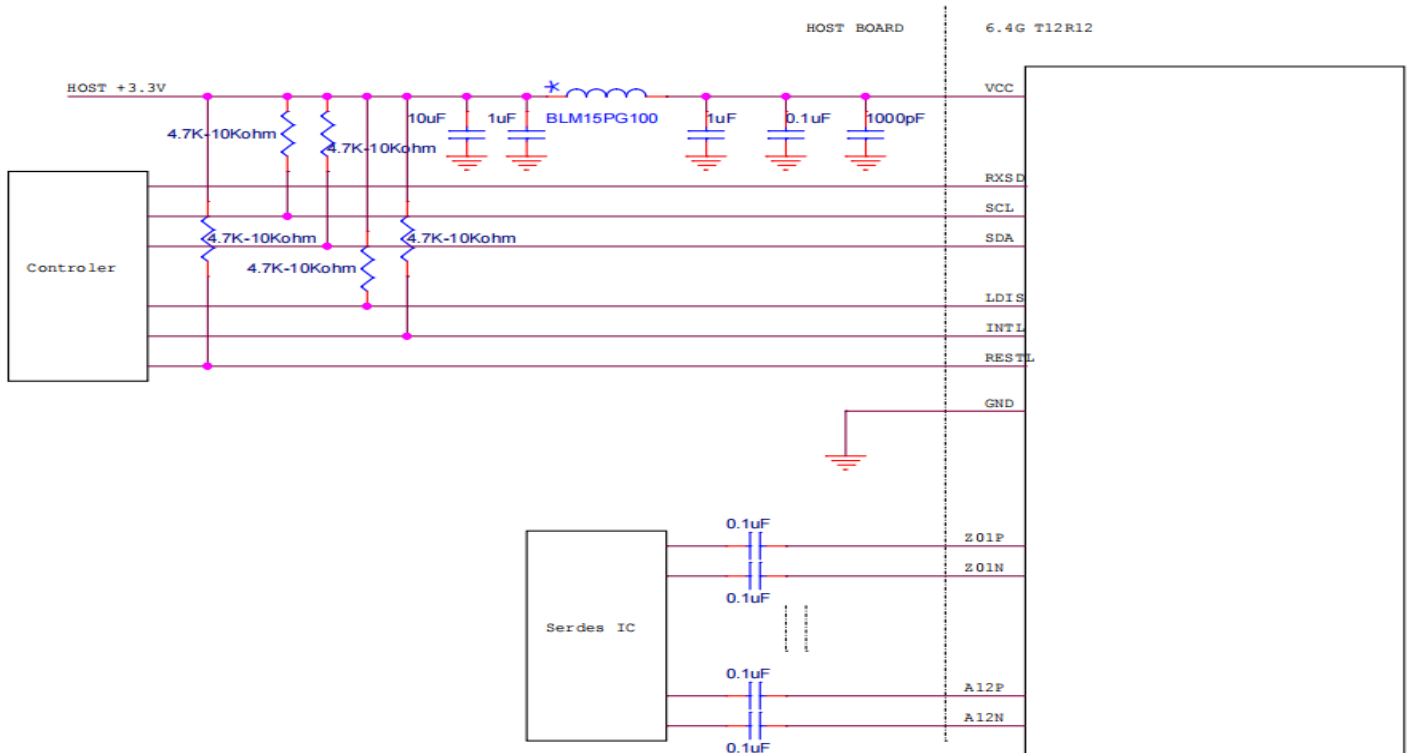
9. Optic Interface

There are 12-CH TX and 12-CH RX.



10. Application circuit

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11. Digital Diagnostic Monitor Accuracy

The following characteristics are defined over recommended operating conditions

Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	deg.C
Internally measured transceiver supply voltage	+/-3	%
Measured Tx bias current	+/-10	%
Measured Tx output power	+/-3	dB
Measured Rx received average optical power	+/-3	dB

12. Modification History

Rev.	Comments	Date	Originator	Approval
01	Initial	2026.09.05	Hawk Rong	Mike Sun