WTSP-H31-40D(I)

SFP28 25Gb/s 1310nm 40km

Part Number	Wavelength	Temperature
WTSP-H31-40D	1310	0°C~+70°C



1. Product Overview

Features

- Operating data rate up to 25.78Gbps
- Rate Adaptation
- Up to 40km transmission distance
- High sensitivity APD photodiode and TIA
- LC single connector
- Hot pluggable 20pin connector
- Low power consumption <1.5 W
- Single +3.3V ±5% power supply
- Compliant with SFF-8472 & IEEE 802.3cc
- Fully RoHS Compliant
- Operating temperature range:
- Commercial: 0°C to +70°C

Applications

- 25GE BASE-ER Ethernet
- CPRI Option 10/eCPRI

2. Ordering Information

Part No.	Bit Rate	Laser (nm)	Distance	Fiber Type	Connector	Temp
WTSP-H31-40D	25.78Gbps	1310	40km	SMF	LC	0°C~+70°C
WTSP-H31-40DI	25.78Gbps	1310	40km	SMF	LC	-40°C~+85°C

3. Absolute Maximum Ratings

Parameter	Symbol	Min	Type	Max	Unit
Storage Temperature	Ts	-40		85	°C
Relative Humidity	RH	0		85	%

4. Recommended Operating Conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Case Temperature	Tc	WTSP-H31-40D	0		70	°C
Case Temperature	Tc	WTSP-H31-40DI	-40		85	°C
Power Supply Voltage	Vcc		3.14	3.30	3.46	V
Bit Rate	BR			25.78125		Gbps
Bit Error Ratio	BER				5*10-5	
Max Supported Link Length	L				40	km

5. Optical Parameters

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Center Wavelength	λ		1290		1330	nm
Side-mode Suppression Ratio	SMSR		30			dB
Average Optical Power	Pavg		- 2		6.0	dBm
Optical Modulation Amplitude	TxOMA		0			dBm
Transmitter and Dispersion Penalty	TDP				2.7	dB
Average Launch Power of OFF Transmitter	Poff				-20	dBm
Extinction Ratio	ER		4			dB
Optical Return Loss Tolerance					20	dB
Transmitter Reflectance					-26	dB
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Center Wavelength	λ		1290		1330	nm
Damage Threshold			-3			dBm
Receive Power Overload					-5	dBm
Receiver Reflectance					-26	dB
Receiver Sensitivity	S	Note1			-19	dBm
LOS Assert	LOSA		-30			dBm
LOS De-Assert	LOSD				-21	dBm
LOS Hysteresis			0.5			dB

6. Electrical Characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Note
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Input Differential Impedance	RIN	Ω		100		
Single-ended Data Input Swing	VIN	mVp-p	90		450	
Transmit Disable Voltage	VDIS	V	2		VCCHOST	
Transmit Enable Voltage	VEN	V	VEE		VEE+0.8	
Transmit Fault Assert Voltage	VFA	V	2		VCCHOST	
Transmit Fault De-Assert Voltage	VFDA	V	VEE		VEE+0.4	
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Single-ended Data Output Swing	VOD	mVp-p	200		450	
LOS Fault	VLOSFT	V	2		VCCHOST	
LOS Normal	VLOSNR	V	VEE		VEE+0.4	

7. Digital Diagnostics

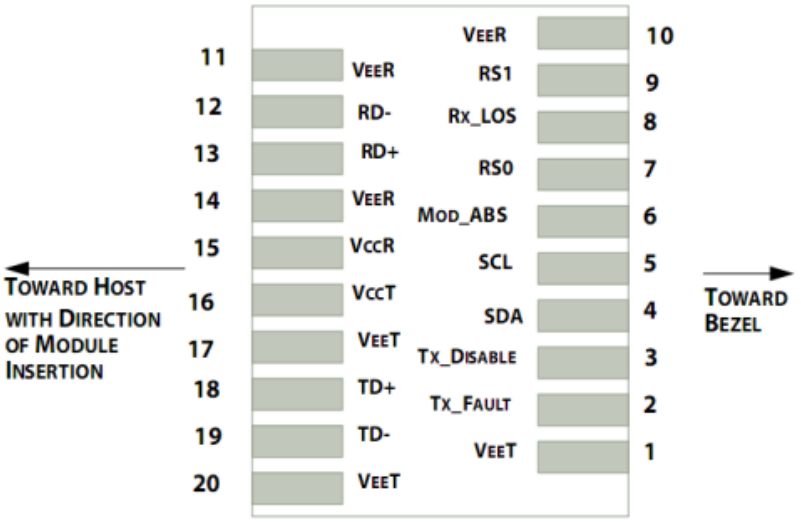
Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	deg.C
Internally measured transceiver supply voltage	+/-3	%
Measured Tx bias current	+/-10	%
Measured Tx output power	+/-3	dB
Measured Rx received average optical power	+/-3	dB

8. Pin Descriptions

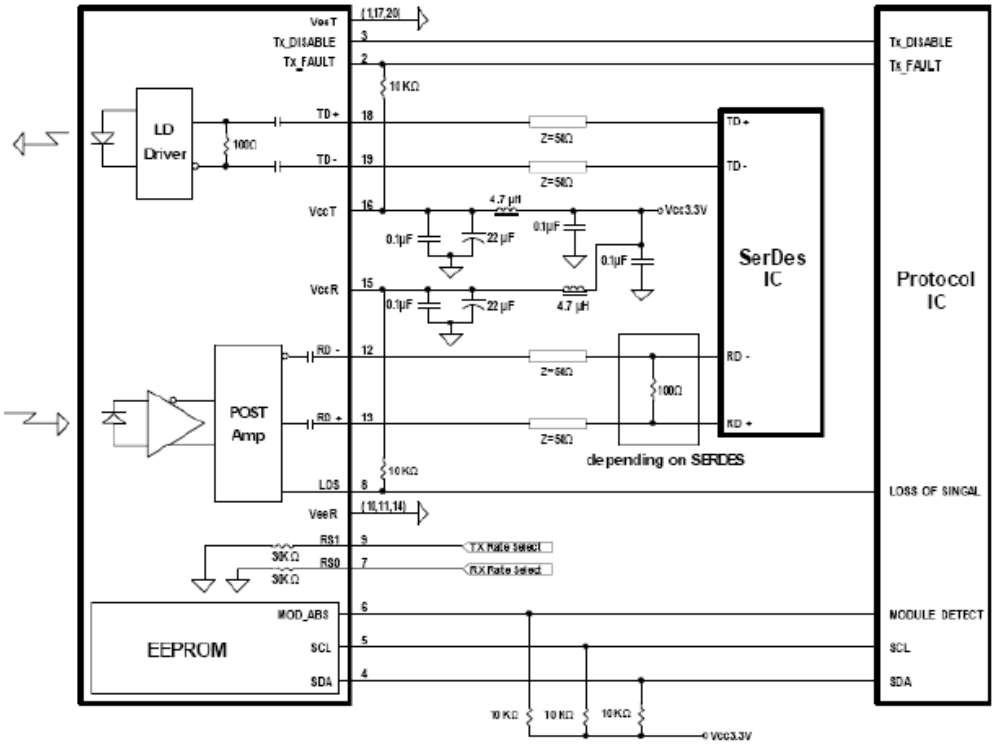
Pin	Symbol	Name	Description
1,17,20	VeeT	Transmitter Signal Ground	Connected to signal ground on the host board.
2	TX Fault	Transmitter Fault Out (OC)	Module transmitter fault output.
3	TX Disable	Transmitter Disable In (LVTTL)	Module transmitter disable control.
4	SDA	Module Definition Identifiers	Serial ID with SFF 8472 Diagnostics Module Definition pins should be pulled up to Host Vcc with 10 kΩ resistors.
5	SCL	Module Definition Identifiers	Serial ID with SFF 8472 Diagnostics Module Definition pins should be pulled up to Host Vcc with 10 kΩ resistors.
6	MOD-ABS	Module Definition Identifiers	Serial ID with SFF 8472 Diagnostics Module Definition pins should be pulled up to Host Vcc with 10 kΩ resistors.

Pin	Symbol	Name	Description
7	RS0	Receiver Rate Select (LVTTL) Transmitter Rate Select (LVTTL)	Rate select 0(Rx):Low=CDR Bypass ; High=CDR Select Rate select 1(Tx):Low=CDR Bypass ; High=CDR Select
9	RS1	Receiver Rate Select (LVTTL) Transmitter Rate Select (LVTTL)	Rate select 0(Rx):Low=CDR Bypass ; High=CDR Select Rate select 1(Tx):Low=CDR Bypass ; High=CDR Select
8	LOS	Loss of Signal Out (OC)	Receiver loss of signal.
10,11,14	VeeR	Receiver Signal Ground	Connected to signal ground on the host board.
12	RD-	Receiver Negative DATA Out (CML)	Receiver inverted data output, internally AC coupled and terminated
13	RD+	Receiver Positive DATA Out (CML)	Receiver non-inverted data output, internally AC coupled and terminated.
15	VccR	Receiver Power Supply	Receiver Power 3.3V Supply.
16	VccT	Transmitter Power Supply	Transmitter Power 3.3V Supply.
18	TD+	Transmitter Positive DATA In (CML)	Transmitter non-inverted data input, internally AC coupled and terminated.
19	TD-	Transmitter Negative DATA In (CML)	Transmitter inverted data Input, internally AC coupled and terminated.

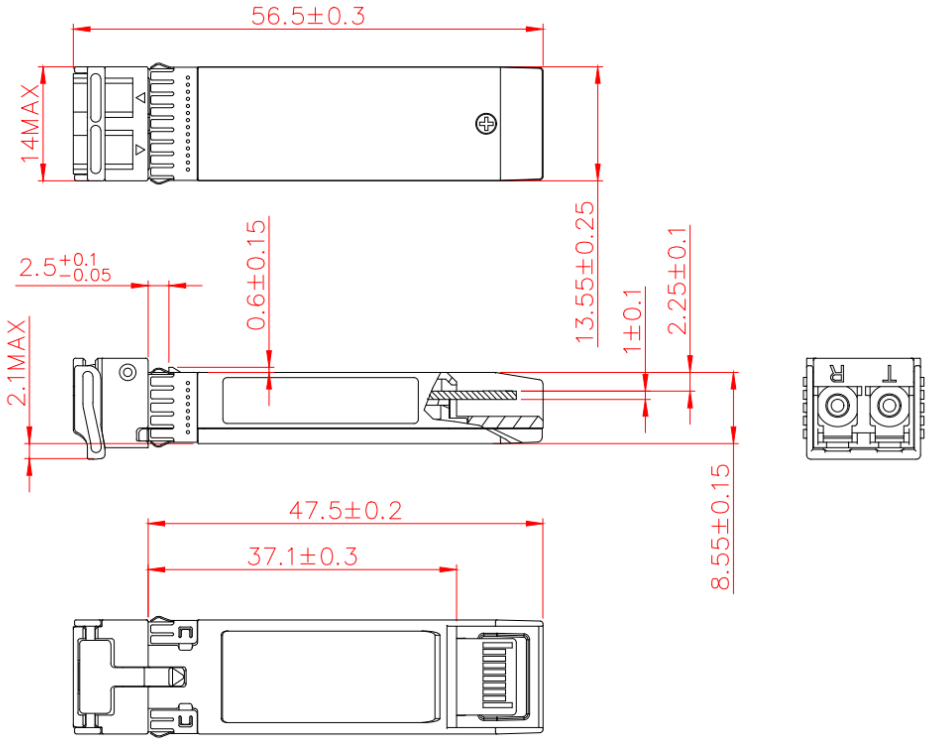
9. Pin Assignment



10. Recommended Interface Circuit



11. Mechanical Specifications



12. Revision History

Version	Date	Description	Prepared by
V6	2025	Unified WincoTek datasheet format	WincoTek
V6.1	2026-10-23	Engineering and format review	WincoTek