# WTS25L2D(I)

25G SFP28 Transceiver 1310nm SMF 20km LC

| Part Number | Wavelength | Temperature |
|---|---|---|
| WTS25L2D | 1310 | 0°C~+70°C |




## 1. Product Overview

### Features

- Operating data rate up to 25.78Gbps
- Rate Adaptation
- Up to 20km transmission distance
- High sensitivity Pin photodiode and TIA
- LC duplex connector
- Hot pluggable 20pin connector
- Low power consumption <1.2 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

- Data Center Backbone
- Ethernet Switches
- High-speed Servers
- High-performance Computing Clusters
- SAN, Routers, Hubs, Load Balancer

## 2. Ordering Information

| Part No. | Bit Rate | Laser (nm) | Distance | Fiber Type | Connector | Temp |
|---|---|---|---|---|---|---|
| WTS25L2D | 25.78Gbps | 1310 | 20km | SMF | LC | 0°C~+70°C |
| WTS25L2DI | 25.78Gbps | 1310 | 20km | 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-L31-20D | 0 | | 70 | °C |
| Case Temperature | Tc | WTSP-L31-20DI | -40 | | 85 | °C |
| Power Supply Voltage | VCC | | 3.15 | 3.30 | 3.45 | V |
| Bit Rate | BR | | | 25.78125 | | Gbps |
| Bit Error Ratio | BER | | | | 5*10-5 | |
| Max Supported Link Length | L | | | | 20 | km |

## 5. Optical Parameters

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Transmitter | Transmitter | Transmitter | Transmitter | Transmitter | Transmitter | Transmitter |
| Center Wavelength | λ | | 1260 | | 1355 | nm |
| Side-mode Suppression Ratio | SMSR | | 30 | | | dB |
| Average Optical Power | Pavg | | -4 | | 2.0 | dBm |
| Optical Modulation Amplitude | TxOMA | | -4 | | | dBm |
| Transmitter and Dispersion Penalty | TDP | | | | 2.7 | dB |
| Average Launch Power of OFF Transmitter | Poff | | | | -30 | dBm |
| Extinction Ratio | ER | | 3.5 | | | dB |
| Optical Return Loss Tolerance | | | | | 20 | dB |
| Transmitter Reflectance | | | | | -26 | dB |
| Receiver | Receiver | Receiver | Receiver | Receiver | Receiver | Receiver |
| Center Wavelength | λ | | 1260 | | 1355 | nm |
| Damage Threshold | | | 3 | | | dBm |
| Receive Power Overload | | | | | 2 | dBm |
| Receiver Reflectance | | | | | -26 | dB |
| Receiver Sensitivity | S | Note1 | | | -13 | dBm |
| LOS Assert | LOSA | | -30 | | | dBm |
| LOS De-Assert | LOSD | | | | -17 | dBm |
| LOS Hysteresis | | | 0.5 | | | dB |

## 6. Optical Parameters

| 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. Electrical Characteristics

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Power Consumption | | | | | 1.2 | W |
| Supply Current | Icc | | | | 350 | mA |

## 8. Digital Diagnostics

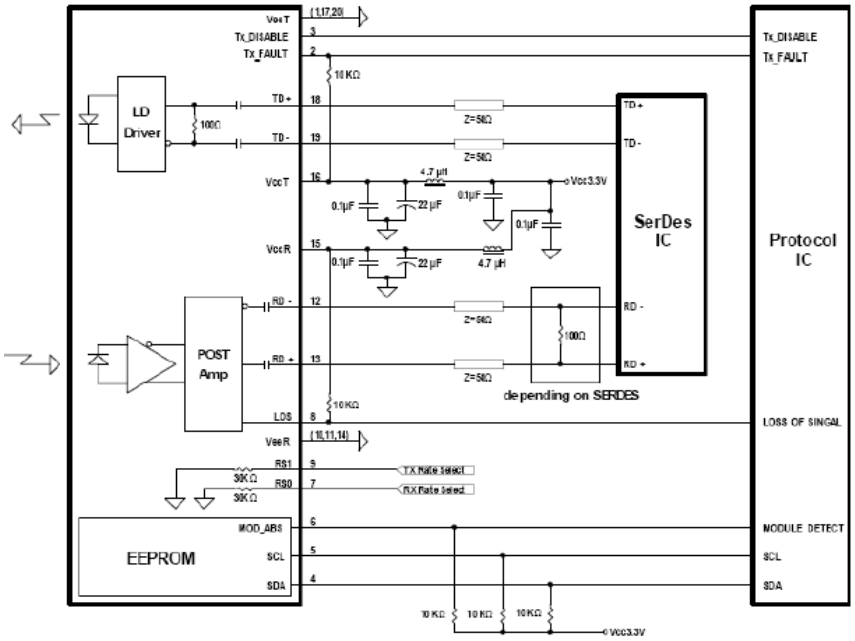
| Parameter | Accuracy | Unit |
|---|---|---|
| Internally measured transceiver temperature | +/-3 | deg.C |
| Internally measured transceiver supply voltage | +/-3 | % |
| Measured Tx bias current | +/-10 | % |
| Measured Tx output power | +/-3 | dB |
| Measured Rx received average optical power | +/-3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

## 9. Pin Descriptions

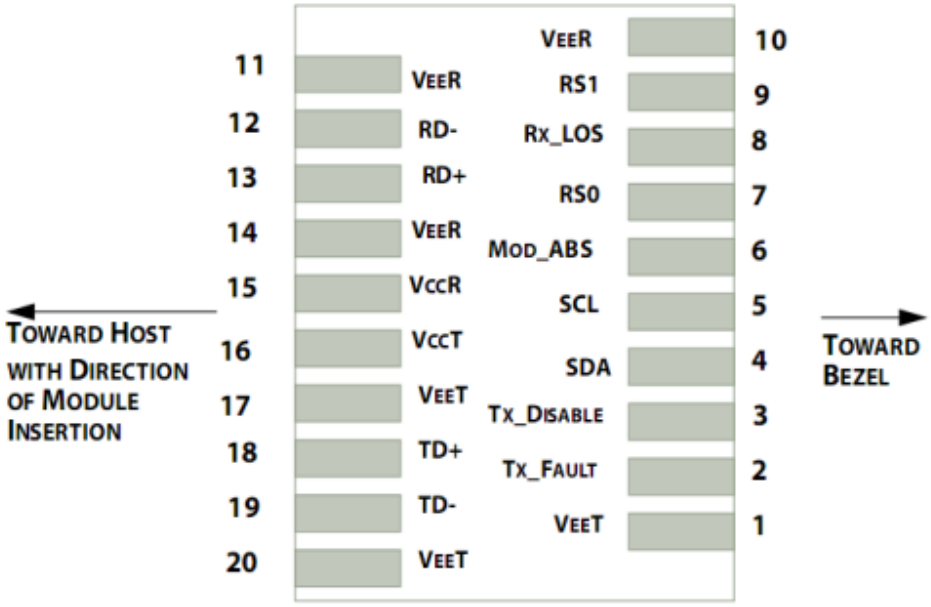
| Pin | Symbol | Name | Description |
|---|---|---|---|
| 1,17,20 | VeeT | Transmitter Signal Ground | Connected to signal ground on the host board. |
| 2 | TX Fault | Transmitter Fault Out (OC) | Module transmitter fault output. |
| 3 | TX Disable | Transmitter Disable In (LVTTL) | Module transmitter disable control. |

| Pin | Symbol | Name | Description |
|---|---|---|---|
| 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 | | |
| 6 | MOD-ABS | | |
| 7 | RS0 | Receiver Rate Select (LVTTL)<br>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 | | |
| 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. |

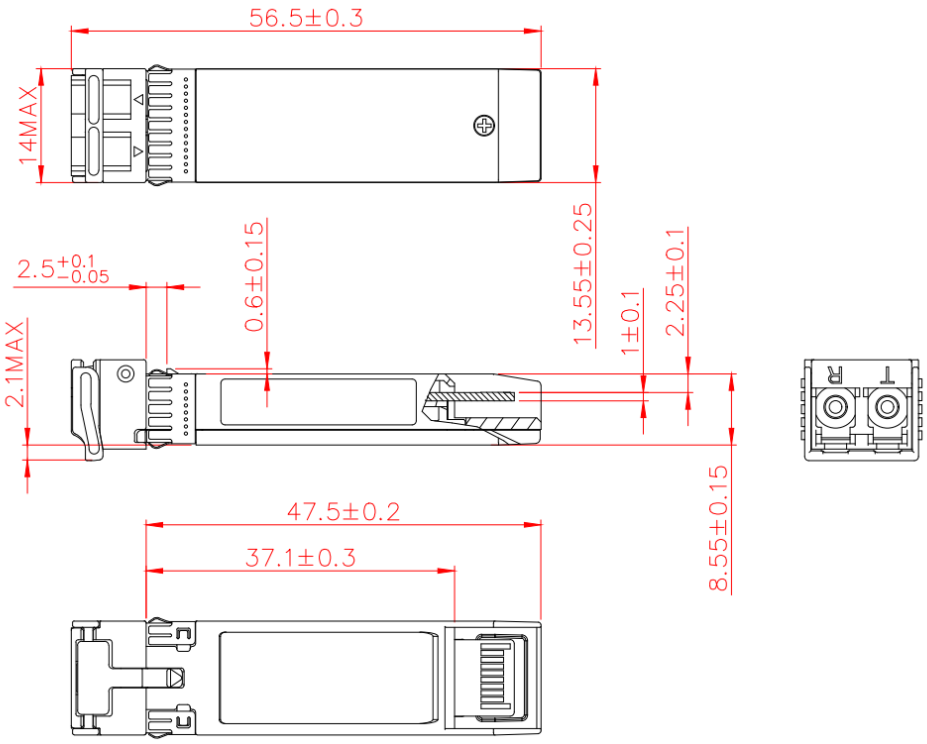
## 10. Electrical Interface



## 11. Pin Assignment




## 12. Mechanical Specifications




## 13. Revision History

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