WTS01L2B53S(B35S)-K20C(I)

1.25G SFP Transceiver T15/R13(T13/R15) SMF 20km SC

Part Number WTS01L2B53S-K20C	**Data Rate 1.25**	**Wavelength 1550**
Reach 20	**Temperature 0℃~70℃**	



1. Product Overview

Features

- Up to 1.25Gbps Data Links
- 1550nm DFB laser/1310nm FP laser transmitter and PIN/TIA receiver
- Maximum link length of 20km on 9/125um SMF
- Hot-pluggable SFP footprint
- Low power dissipation
- BIDI SC/UPC type pluggable optical interface
- Metal enclosure, for lower EMI
- Compatible with RoHS
- Single +3.3V power supply
- Compliant with SFF-8472
- Case operating temperature
- Commercial: 0°C to +70°C

Applications

- Switch to Switch Interface
- Fast Ethernet
- Switched Backplane Applications
- Router/server Interface
- Other Optical Links

2. Ordering Information

Part No.	Bit Rate (Gbps)	Laser (nm)	Distance（km）	Fiber Type	DDMI	Connector	Temp
WTS01L2B53S-K20C	1.25	1550	20	SMF	YES	SC	0℃~70℃
WTS01L2B53S-K20I	1.25	1550	20	SMF	YES	SC	-40℃~85℃
WTS01L2B35S-K20C	1.25	1310	20	SMF	YES	SC	0℃~70℃
WTS01L2B35S-K20I	1.25	1310	20	SMF	YES	SC	-40℃~85℃

3. Absolute Maximum Ratings

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Storage Temperature	TS	-40		85	℃	
Storage Ambient Humidity	HA	5		95	%	

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Power Supply Voltage	VCC	-0.5		4	V	
Signal Input Voltage	VIN	-0.3		Vcc+0.3	V	
Receiver Damage Threshold		+3			dBm	
Lead Soldering Temperature/Time	TSOLD			260/10	ºC/sec	1
Lead Soldering Temperature/Time	TSOLD			360/10	ºC/sec	2

4. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Ref.
Case Operating Temperature	Tcase	0		70	ºC	WTS01L2B53S(B35S)-K20C
Case Operating Temperature	Tcase	-20		85	ºC	WTS01L2B53S(B35S)-K20E
Case Operating Temperature	Tcase	-40		85	ºC	WTS01L2B53S(B35S)-K20I
Ambient Humidity	HA	5		70	%	Non-condensing
Power Supply Voltage	VCC	3.13	3.3	3.47	V	
Power Supply Current	ICC			300	mA	
Data Rate			1250/1250		Mbps	TX Rate/RX Rate
Transmission Distance				20	km	
Coupled Fiber	Single mode fiber	Single mode fiber	Single mode fiber	Single mode fiber	Single mode fiber	9/125um G.652

5. Optical Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Average Output Power	POUT	-9		-3	dBm	WTS01L2B35S(B53S)-K20
Extinction Ratio	ER	9			dB	
Center Wavelength	λC	1260	1310	1360	nm	WTS01L2B35S-K20
Center Wavelength	λC	1530	1550	1570	nm	WTS01L2B53S-K20
Spectrum Width (RMS)	σ			3.5	nm	FP Laser (TX:1310nm)
Side Mode Suppression Ratio	SMSR	30			dB	DFB Laser (TX:1550nm)
Spectrum Bandwidth(-20dB)	σ			1	nm	DFB Laser (TX:1550nm)
Transmitter OFF Output Power	POff			-45	dBm	
Jitter p-p	tJ			0.1	UI	1

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Output Eye Mask	Compliant with IEEE802.3z (class 1 laser safety)	Compliant with IEEE802.3z (class 1 laser safety)	Compliant with IEEE802.3z (class 1 laser safety)	Compliant with IEEE802.3z (class 1 laser safety)		2
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Input Optical Wavelength	λIN	1500	1550	1600	nm	WTS01L2B35S-K20
Input Optical Wavelength	λIN	1290	1310	1330	nm	WTS01L2B53S-K20
Receiver Sensitivity	PIN			-23	dBm	3
Input Saturation Power (Overload)	PSAT	-3			dBm	
LOS of Signal Assert	PA	-45			dBm	
LOS of Signal De-assert	PD			-23.5	dBm	4
LOS Hysteresis	PD-PA	0.5		6	dB	

6. Electrical Characteristics

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Total Supply Current	ICC			300	mA	1
Transmitter Disable Input-High	VDISH	2		Vcc+0.3	V	LVTTL
Transmitter Disable Input-Low	VDISL	0		0.8	V	LVTTL
Transmitter Fault Input-High	VTxFH	2		Vcc+0.3	V	LVTTL
Transmitter Fault Input-Low	VTxFL	0		0.8	V	LVTTL
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
LOS Output Voltage-High	VLOSH	2		Vcc+0.3	V	LVTTL
LOS Output Voltage-Low	VLOSL	0		0.8	V	LVTTL

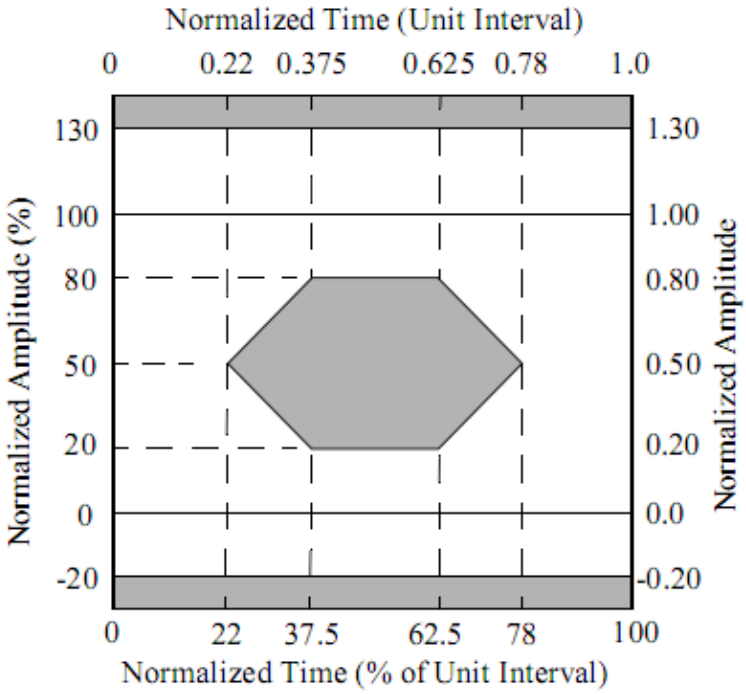
7. Digital Diagnostics

Parameter	Unit	Accuracy
Case Temperature	℃	±3
Supply Voltage	V	±3%
Tx Bias Current	mA	±10%
Tx Optical Power	dB	±3
Rx Optical Power	dB	±3

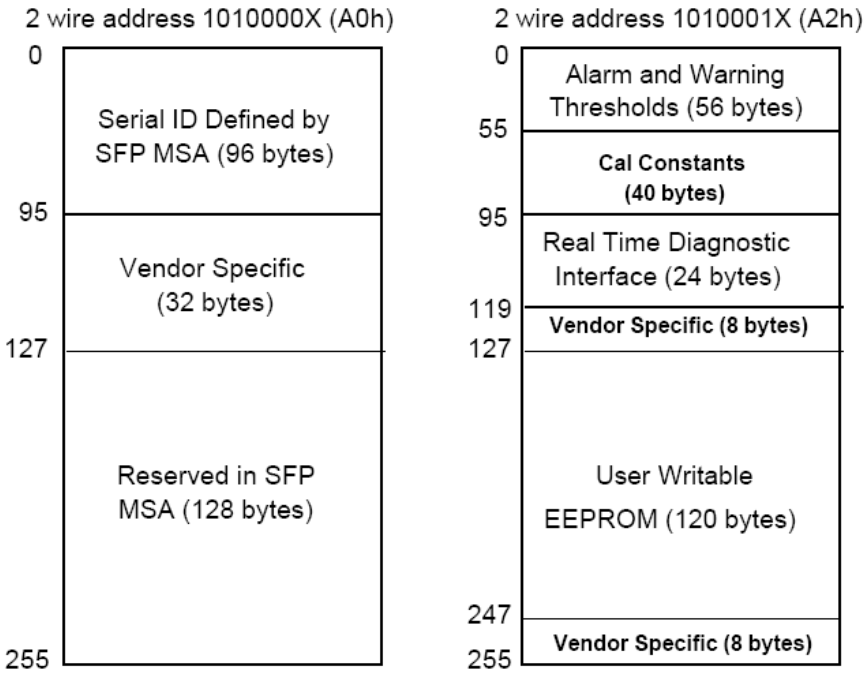
8. Pin Descriptions

Pin	Symbol	Name/Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault.	2
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	3
4	MOD_DEF (2)	Module Definition 2. Data line for Serial ID.	4
5	MOD_DEF (1)	Module Definition 1. Clock line for Serial ID.	4
6	MOD_DEF (0)	Module Definition 0. Grounded within the module.	4
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic “0” indicates normal operation.	5
9	VEER	Receiver Ground (Common with Transmitter Ground)	1
10	VEER	Receiver Ground (Common with Transmitter Ground)	1
11	VEER	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out (CML). AC Coupled	
13	RD+	Receiver Non-inverted DATA out (CML). AC Coupled	
14	VEER	Receiver Ground (Common with Transmitter Ground)	1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	1

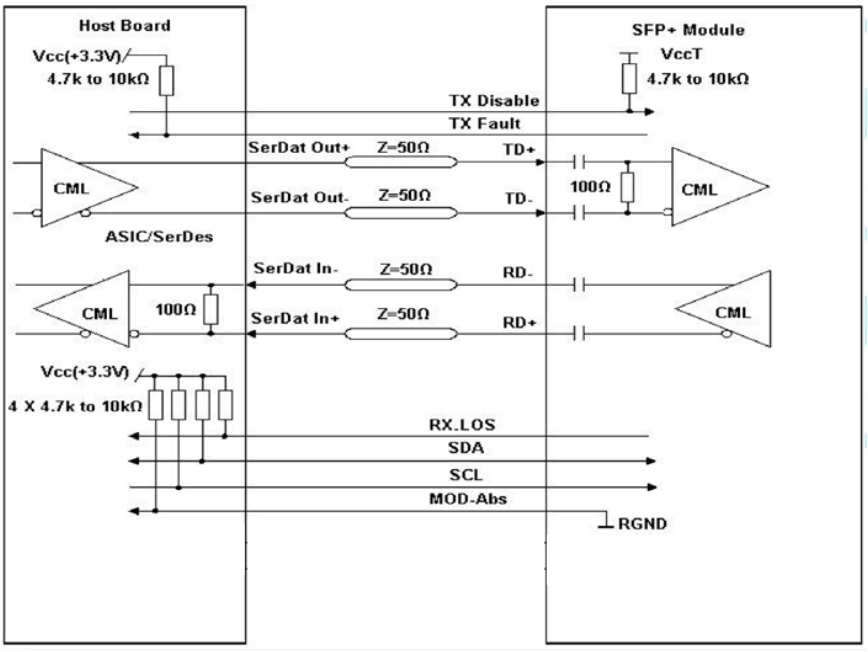
9. Optical Eye Diagram



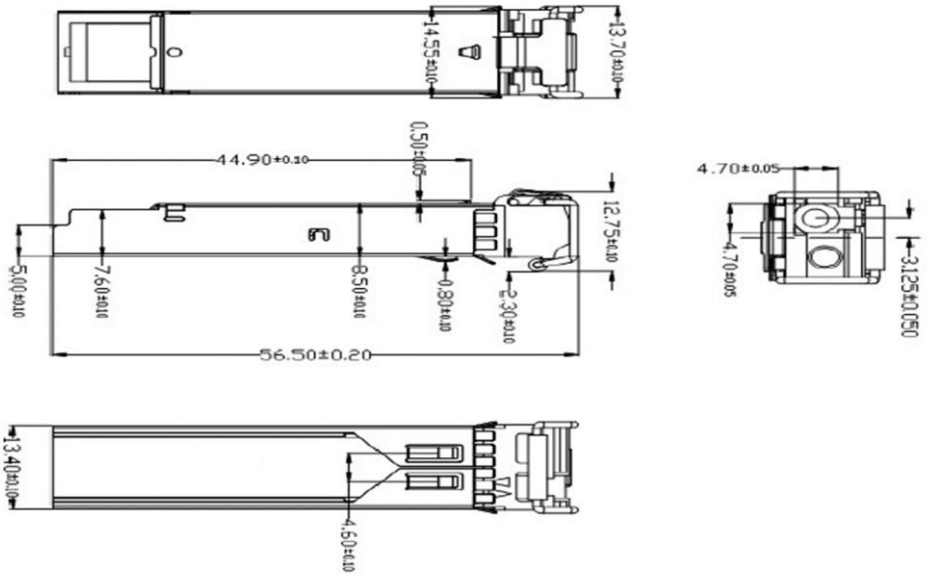
10. Digital Diagnostics Memory Map



11. Electrical Interface



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