50G SFP56 Direct Attach Cable (DAC) 3m 26AWG

Product Overview 3

Part Number WTDC50-3



1. Product Overview

SFP56 Direct Attach Cables are compliant with SFF-8432 and SFF-8402 specifications. Various choices of wire gauge are available from 30 to 26 AWG with various choices of cable length (up to 3m).

SFP56 uses PAM4 signals for transmission, which doubles the rate. However, there are more stringent requirements for cable insertion loss. For detailed requirements, please see High Speed Characteristics.

Applications l Benefits

50G Ethernet

Features

- Up to 50 Gbps data rate
- Up to 3-meter transmission
- Hot-pluggable SFP 20PIN footprint
- Improved Pluggable Form Factor (IPF) compliant for enhanced EMI/EMC performance
- Compatible with IEEE 802.3bj and IEEE 802.3cd
- Compatible to SFF-8402 and SFF-8432
- Temperature Range: 0~ 70 °C
- RoHS Compatible
- Pin Function Definition
- High Speed Characteristics
- Reflection Coefficient given by equation SDD11(dB) < -16.5 + 2 × SQRT (f), with f in GHz
- Reflection Coefficient given by equation SDD11(dB) < -10.66 + 14 × log10(f/5.5), with f in GHz

Applications

2. Pin Descriptions

Pin	Pin	Logic	Symbol	Symbol	Name/Description	Notes
1	1		VeeT	VeeT	Transmitter Ground	
2	2	LV-TTL-O	TX Fault	TX Fault	N/A	1
3	3	LV-TTL-I	TX_DIS	TX_DIS	Transmitter Disable	2
4	4	LV-TTL-I/O	SDA	SDA	Tow Wire Serial Data	
5	5	LV-TTL-I	SCL	SCL	Tow Wire Serial Clock	
6	6		MOD_DEF0	MOD_DEF0	Module present, connect to VeeT	

Pin	Pin	Logic	Symbol	Symbol	Name/Description	Notes
7	7	LV-TTL-I	RS0	RS0	N/A	1
8	8	LV-TTL-O	LOS	LOS	LOS of Signal	2
9	9	LV-TTL-I	RS1	RS1	N/A	1
10	10		VeeR	VeeR	Receiver Ground	
11	11		VeeR	VeeR	Receiver Ground	
12	12	CML-O	RD-	RD-	Receiver Data Inverted	
13	13	CML-O	RD+	RD+	Receiver Data Non-Inverted	
14	14		VeeR	VeeR	Receiver Ground	
15	15		VccR	VccR	Receiver Supply 3.3V	
16	16		VccT	VccT	Transmitter Supply 3.3V	
17	17		VeeT	VeeT	Transmitter Ground	
	18	CML-I	TD+		Transmitter Data Non-Inverted	
	19	CML_I	TD-		Transmitter Data Inverted	
	20		VeeT		Transmitter Ground	
1.	Signals not supported in SFP+ Copper pulled-downto VeeT with 30K ohms resistor	Signals not supported in SFP+ Copper pulled-downto VeeT with 30K ohms resistor	Signals not supported in SFP+ Copper pulled-downto VeeT with 30K ohms resistor	Signals not supported in SFP+ Copper pulled-downto VeeT with 30K ohms resistor	Signals not supported in SFP+ Copper pulled-downto VeeT with 30K ohms resistor	
2.	Passive cable assemblies do not support	Passive cable assemblies do not support	Passive cable assemblies do not support	LOS and TX_DIS	LOS and TX_DIS	

3. Additional Specifications

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential Impedance	TDR	90	100	110	Ω	
Insertion loss	SDD21	-16.06			dB	At 13.28 GHz
Differential Return Loss	SDD11 SDD22			See 1	dB	At 0.05 to 4.1 GHz
Differential Return Loss	SDD11 SDD22			See 2	dB	At 4.1 to 19 GHz
Common-mode to common-mode output return loss	SCC11 SCC22			-2	dB	At 0.2 to 19 GHz
Differential to common-mode return loss	SCD11 SCD22			See 3	dB	At 0.01 to 12.89 GHz
Differential to common-mode return loss	SCD11 SCD22			See 4	dB	At 12.89 to 19 GHz
Differential to common Mode Conversion Loss	SCD21-IL			-10	dB	At 0.01 to 12.89 GHz

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential to common Mode Conversion Loss	SCD21-IL			See 5	dB	At 12.89 to 15.7 GHz
Differential to common Mode Conversion Loss	SCD21-IL			-6.3	dB	At 15.7 to 19 GHz

4. Additional Specifications

Length (m)	Cable AWG
1	30
2	30/26
3	26

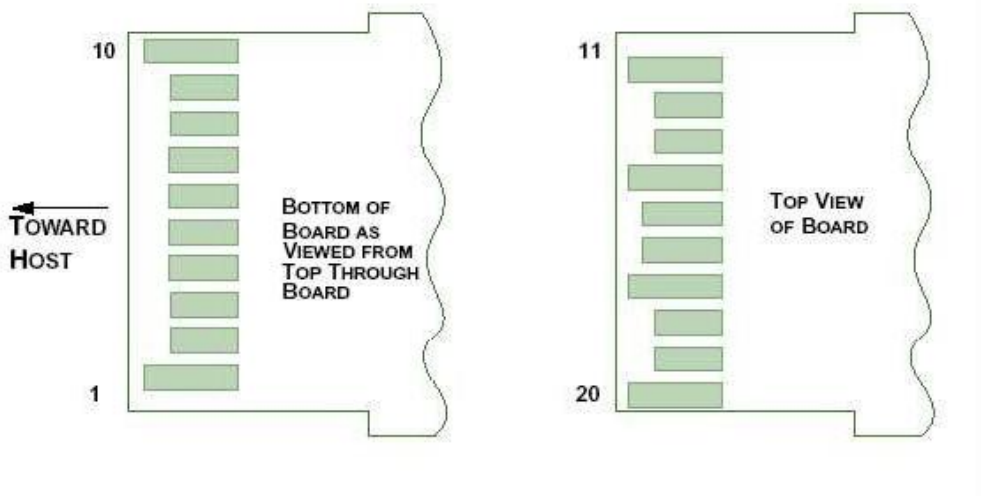
5. Regulatory Compliance

Feature	Test Method	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883C Method 3015.7	Class 1(>2000 Volts)
Electromagnetic Interference (EMI)	FCC Class B	Compliant with Standards
Electromagnetic Interference (EMI)	CENELEC EN55022 Class B	Compliant with Standards
Electromagnetic Interference (EMI)	CISPR22 ITE Class B	Compliant with Standards
RF Immunity (RFI)	IEC61000-4-3	Typically Show no Measurable Effect from a 10V/m Field Swept from 80 to 1000MHz
RoHS Compliance	RoHS Directive 2011/65/EU and it's Amendment Directives （EU） 2015/863	RoHS （EU）2015/863 compliant
REACH Compliance	REACH Regulation (EC) No 1907/2006	REACH (EC) No 1907/2006 compliant

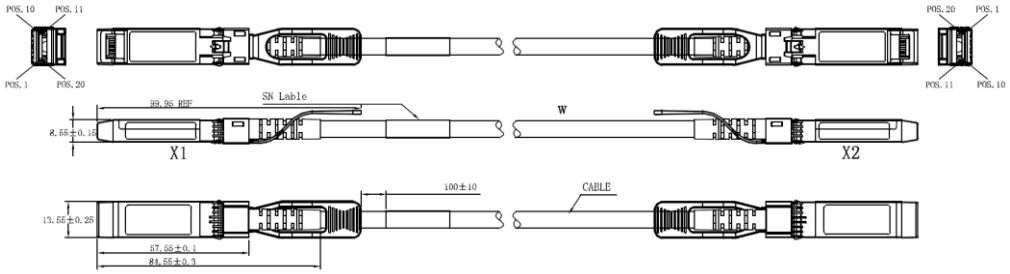
6. Cable Product Photograph



7. Pin Assignment



8. Mechanical Specifications



9. Revision History

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