CWDM SFP28 25G 1270-1330nm 10KM Transceiver

AE-SFP28-C10-XX

Applications

- 25GBASE Ethernet
- CPRI Option 10 and Ecpri

Features

- Universal SFP28 MSA Package with Duplex LC Connector
- Compliant with SFF-8431 Rev 4.1
- Compliant with SFF-8472 Rev12.3
- Compliant with SFF-8024 Rev4.9
- Compliant with SFF-8402 Rev1.1
- Uncool DML Laser and PIN Photo- detector
- Complies with EU Directive 2015/863EU (RoHS Compliant)
- International Class 1 Laser Safety Certified

Description

The AE-SFP28-C10-XX transceiver provides 25GBase-CWDM throughput up to 10km over single mode fiber (SMF) using a wavelength of 1270-1370nm via an LC duplex connector. It provides 25GBASE Ethernet connectivity option for 25G Ethernet, telecom and data center. It is fully compliant with the SFP28 MSA, CPRI and eCPRI standard.

Product Specifications

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	T_S	-40		85	℃
Supply Current	T_S			330	mA
Maximum Power Dissipation	P_D			1	W
Aggregate Bit Rate	ABR	24.33		25.78	Gb/s
Operating Distance		2		10000	m

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	TOP	0		70	℃
Power Supply Voltage	VCC	3.13	3.3	3.46	V
Instantaneous Peak Current at Hot Plug	ICC_IP			400	mA
Sustained Peak Current at Hot Plug	ICC_SP			330	mA

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Nominal Wavelength	λC0	1264.5 1284.5 1304.5 1324.5 1344.5 1364.5	1271 1291 1311 1331 1351 1371	1277.5 1297.5 1317.5 1337.5 1357.5 1377.5	nm	
Side-mode Suppression Ratio	SMSR	37			dB	
Spectral Width	Δλ			1	nm	
OFF_Average Power	POFF			-40	dBm	
Average Optical Power	POUTL	0		6	dBm	
Optical Modulation Amplitude	OMA	0		6	dBm	
Extinction Ratio	ER	3.5			dB	
Transmitter and Dispersion Penalty (1271/1291/1311nm/1331nm)	TDP			3	dB	
Transmitter and Dispersion Penalty (1351/1371nm)				4.5		

Optical Return Loss Tolerance	ORLT			20	dB	
Eye Mask Margin		10@25℃ 5@70℃&0℃			%	1
Crossing		40	50	60	%	
Receiver						
Center Wavelength	λC0	1271		1371	nm	
Overload Input Optical Power	PMAX	3			dBm	
Receiver Sensitivity_OMA	BOL			-14.5	dBm	2
Receiver Sensitivity (OMA)	EOL			-14	dBm	
Optical Return Loss	ORL	27			dBm	
Receiver Reflectance	RXR			-30	dBm	
LOS De-Assert	LOSD			-17	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5		4	dB	

Notes:

1. *EYE Mask Margin test conditions, sample waveform ≥1000 wfms, Hit Ratio 5E-5.*
2. *Measured with a PRBS 231-1 test pattern @25.78125 Gbps, BER≤5E-5.*

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	VCC	3.14	3.3	3.46	V
Supply Current	ICC			330	mA
Transmitter					
Input Differential Impedance	RIN_diff		100		Ω
Single Ended Data Input Swing	VIN	90		450	mVp-p
Transmit Disable Voltage	VDIS	2		VCCHOST+0.3	V
Transmit Enable Voltage	VEN	VEE		V_{EE}+0.8	V
Transmit Fault Assert Voltage	VFA	2.2		VCCHOST+0.3	V
Transmit Fault De-Assert Voltage	VFDA	VEE		V_{EE}+0.4	V
Receiver					
Single Ended Data Output Swing	VOD	225		375	mVp-p
LOS Fault	LOS_FT	2.2		VCCHOST+0.3	V
LOS Normal	LOS_Nor	VEE		V_{EE}+0.4	V

Pin Definition

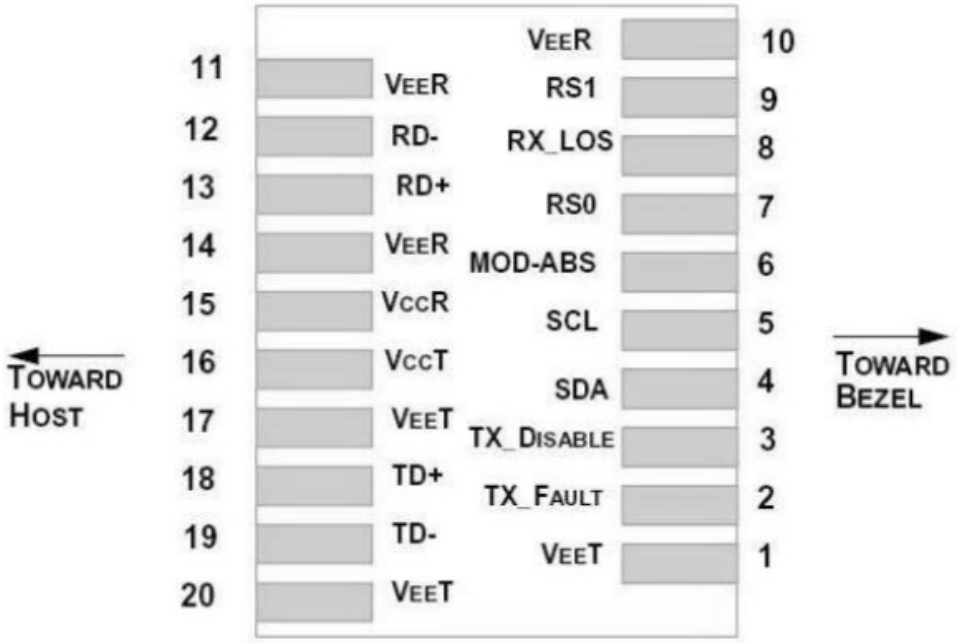


Figure 1. Pin Function Definitions

Pin Description

Pin	Symbol	Logic	Description
1,17,20	VeeT		Connected to Signal Ground on the Host Board.
2	TX Fault	LVTTL Output	Module Transmitter Fault Output
3	TX Disable	LVTTL Input	Module Transmitter Disable Control
4	SDA	LVTTL Input/Output	2-wire Serial Interface Data
5	SCL	LVTTL Input/Output	2-wire Serial Interface Clock
6	MOD-ABS		Module Absent (Connected to Module Ground)
7	RS0	LVTTL Input	Rate Select 0 (Rx): Low=CDR Bypass ; High=CDR Select
8	LOS	LVTTL Output	Receiver Loss of Signal
9	RS1	LVTT LInput	Rate Select1 (Tx): Low=CDR Bypass; High=CDR Select

10,11,14	VeeR		Connected to Signal Ground on the Host Board.
12	RD-	CML Output	Receiver Inverted Data Output, Internally AC Coupled and Terminated.
13	RD+	CML Output	Receiver Non-inverted Data Output, Internally AC Coupled andterminated.
15	VccR		Receiver Power 3.3V Supply
16	VccT		Transmitter Power 3.3V Supply
18	TD+	CML Input	Transmitter Non-inverted Data Input, Internally AC Coupled and Terminated.
19	TD-	LVTTL Output	Transmitter Inverted Data Input, Internally AC Coupled and Terminated

Mechanical Dimensions

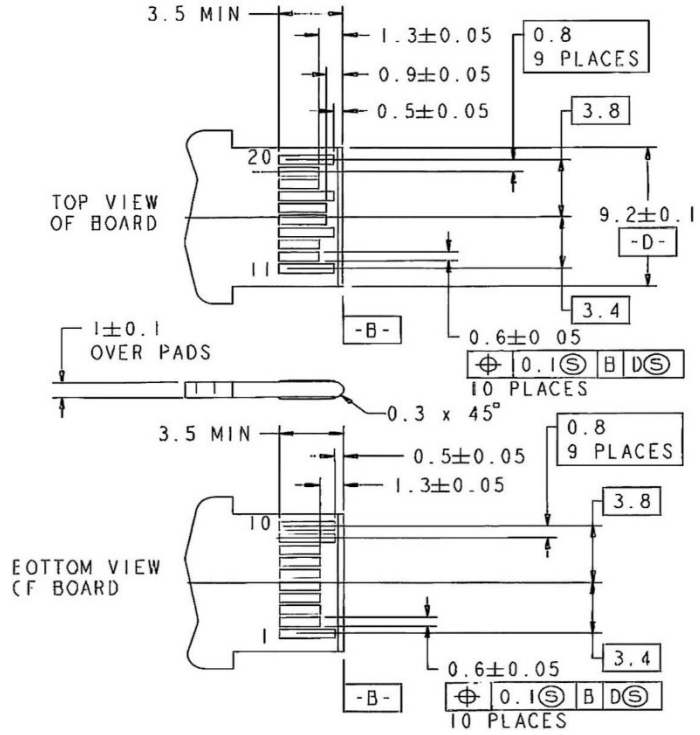


Figure 3. Mechanical Dimensions

Order Information

Part Number	Description
AE-SFP28-C10-XX	CWDM SFP28 25G 1270nm-1370nm Transceiver, Duplex LC, 10km over SMF