



100G CFP-DCO coherent Dual Rate Transceiver **Hot Pluggable, Duplex LC, Micro-ITLA LD, NDSF reach 1200KM, DDM**

Part Number: FCFP-K7-DCO-12KD



Overview

FCFP-K7-DCO-12KD supports 100 Gbps transmission speeds in an industry-standard, pluggable CFP form factor, which is optimized for power sensitive applications. With a rich feature set, it enables cost effective system architectures. The integration of power saving DSP technology and silicon photonic integrated circuit (PIC) technologies optimize the balance of power and performance. Widely adopted in metro carrier and Cloud/DCI applications, FCFP-K7-DCO-12KD support a range of applications from up to 1200km DWDM links without Dispersion compensation. (with Optical Amplifier). Various features can also be configured to optimize the power dissipation for any given application.

Applications

- Metro 100G DWDM transmission
- Cloud / Data Center interconnection
- Long-Haul transmission system

Features

- Compliant with CFP MSA and CAUI 100GE host interface
- Compliant with OTL4.10 for OTU4 host interface
- NDSF reach distance 1200km without in-line Dispersion Compensation (with Optical Amplifier)
- 98 Channels DWDM 50GHz Tunable in the rage of THz 191.25 (H12) to THz196.10 (C61)
- Transmission with mixed 10G/40G traffic
- Low latency soft-decision FEC
- Built-in OTN Processing
- Interoperability with G.709 FEC
- PRBS generation and detection for line and host interfaces



Laser Safety

- This is a Class 1 Laser Product complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.
- Caution: Use of control or adjustments or performance of procedure other than those specified herein may result in hazardous radiation exposure.

Absolute Maximum Ratings

Parameters	Symbol	Min.	Max.	Unit
Storage Temperature	T _{ST}	-40	+85	°C
Operating Temperature	T _{OP}	-10	+80	°C
Storage Relative Humidity	RH	5	85	%
Supply Voltage	V _{CC3}	-0.3	+3.7	V

Recommended Operating Conditions

Parameters	Symbol	Min.	Typ.	Max.	Unit
Case Operating Temperature	T _{OP}	-5	-	+70	°C
Supply Voltage	V _{CC}	+3.2	+3.3	+3.4	V
Rx Input Power				10	dBm
Total Rx Input Power				17	dBm



Transmitter Electro-optical Characteristics

$V_{CC} = 3.2V$ to $3.4V$, $T_{OP} = -5^{\circ}C$ to $70^{\circ}C$

Parameters	Symbol	Min.	Typ.	Max.	Unit	Note
Frequency Range		191.35		196.10	THz	
		1566.72		1528.77	nm	
Laser Frequency Stability		-1.8		+1.8	GHz	
Optical Output Power	Po	-15		+1	dBm	
Output Power Stability		-0.3		+0.3	dBm	1
Output Power Accuracy		-1		+1		2
Side Mode Suppression Ratio	SMSR					40
Turn-up Time from Warm Start				100	ms	3
Disable Time				10	ms	
Wavelength Switching Time				60	Sec.	
Turn-up Time from Cold Start			70	180	Sec.	
Transmitter OSNR		27			dB/ 0.1nm	
Transmitter signal-to-max ASE		21			dB/ 0.1nm	
Optical Return Loss	ORL	27			dB	
Output Power with Tx Disable	Poff			-40	dBm	
Polarization Dependent Power				1.0	dB	3

Note1: Output power change over temperature and time, measured over 10ms intervals.

Note2: Difference between the set value and actual value over temperature and time.

Note3: Module is in Ready state. The MAX. transmitter turn-up time is counted from de-assert the Tx disable Pin to full Tx turn-up.

Note3: Power deference between X and Y polarization.



Receiver Electro-optical Characteristics

$V_{CC} = 3.2V$ to $3.4V$, $T_{OP} = -5^{\circ}C$ to $70^{\circ}C$

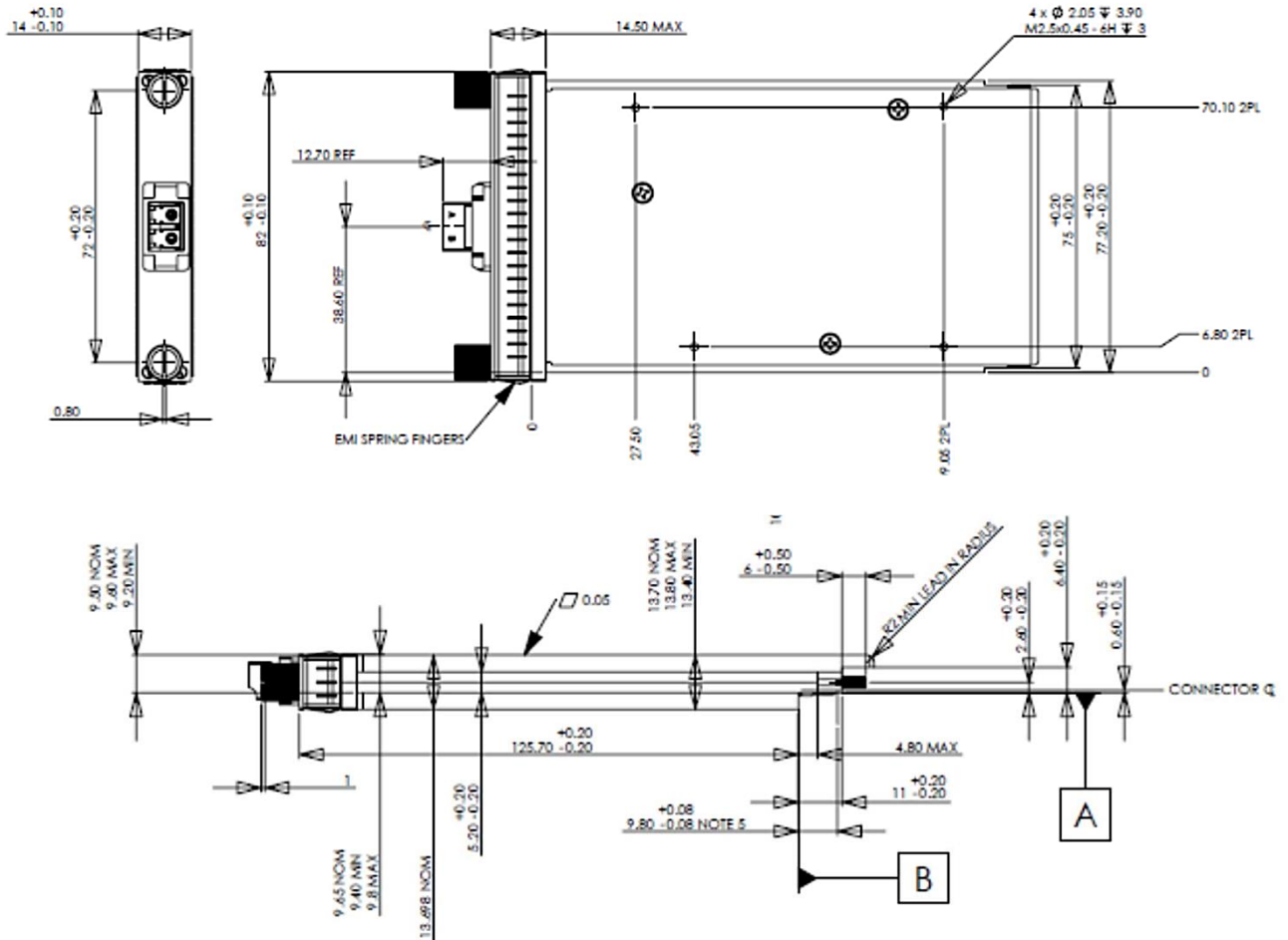
Parameters	Symbol	Min.	Typ.	Max.	Unit	Note
Frequency Range		191.35		196.10	THz	
		1566.72		1528.77	nm	
Optimum Input Power Range		-13			dBm	
Extended Input Power Range		-18			dBm	
Receiver Power Sensitivity with SD-FEC	P_{RX}	-21			dBm	
OSNR Sensitivity			14	15	dB/ 0.1nm	
CD Tolerance	CDT			22000	ps/nm	
Filter Tolerance		30			GHz	
PMD Tolerance	PMDT			15	ps	1
PDL Tolerance	PDLT	3			dB	2
Turn-up Time from Warm Start				30	ms	
Dispersion Reading Accuracy		-150		150	ps/nm	
Input Power Reading Accuracy		-2.5		+2.5	dB	
Clock Recovery OSNR threshold		12			dB/ 0.1nm	
Optical Return Loss	ORL	27			dB	
LOS Hysteresis		0.5	1	1.5	dB	

Note1: The change in DGD < 45ps /ms and change in PSP of < 1 rad /ms.

Note2: No addition PDL from the source, Change in PSP <= 1 rad /ms.



Mechanical Dimensions



(All Dimensions are ±0.20mm Unless Otherwise Specified, Unit: mm)

Ordering Information

Part No.	Tx	Rx	Link	DDM	Temp.
FCFP-K7-DCO-12KD	DWDM 50GHz 1566.72 nm ~ 1528.77nm	1567.95 nm ~ 1528.77nm	NDSF reach 1200km	Yes	-5~+70°C

NOTE: Distances are indicative only. To calculate a more precise link budget based on specific conditions in your application, please refer to the optical characteristics.