DATA SHEET
1.25Gb/s 8ch MULTIMODE PARALLEL OPTICAL INTERCONNECT

GENERAL DESCRIPTIONS AND MAXIMUM RATINGS

Table 1. General Descriptions

Parameters	Transmitter	Receiver
Part Number	POT10K08MFPX	POR10K08MFPX
Number of Channels	8	8
Type of Optical Fiber	62.5 μm Graded Index Multimode 12 (or 8) Fiber Ribbon	
Optical Connector	MTP® (MPO)	
Electrical Interface	AC coupling required	

MTP® is a registered trademark of US Conec Ltd.

Table 2. Absolute Maximum Ratings - Transmitter

Parameter	Symbol	Min	Typ	Max	Unit
Power Supply Voltage	V_{CC1}, V_{CC2}	- 0.3	-	4.5	V
Termination Voltage	V_{TT}	- 0.3	-	4.5	V
Control Input Voltage	V_{CT}	- 0.5	-	V_{CC}+0.5	V
Data Input Swing (single ended)	V_{HIGH} - V_{LOW}	-	-	1.0	V
Storage Temperature	-	- 40	-	85	℃
Maximum Reflow Temperature [1]	-	-	-	260	℃

Table 3. Absolute Maximum Ratings - Receiver

Parameter	Symbol	Min	Typ	Max	Unit
Power Supply Voltage	V_{CC1}, V_{CC2}	- 0.3	-	4.5	V
Data Output Swing (single ended)	V_{HIGH} - V_{LOW}	-	-	0.65	V
Storage Temperature	-	- 40	-	85	℃
Maximum Reflow Temperature [1]	-	-	-	260	℃

Note 1: Temperature for 30 second with 3 cycles.

OPERATING CONDITIONS

Table 4. Operating Conditions - Transmitter

Parameter	Symbol	Min	Typ	Max	Unit
Power Supply Voltage	V_{CC1}, V_{CC2}	3.15	3.3	3.45	V
Termination Voltage	V_{TT}	1.2	2	3.0	V
Noise on Power Supply [2]	-	-	-	100	mV_{P-P}
Control Input Voltage Laser Disable [3]	V_{CT}	V_{CC} - 0.3	V_{CC}	-	V
Control Input Voltage Laser Enable [3]	V_{CT}	-	0	0.5	V
Data Input Swing (single ended)	V_{HIGH} - V_{LOW}	200	250	500	mV
Operating Temperature (case)	-	0	-	80	°C

Table 5. Operating Conditions - Receiver

Parameter	Symbol	Min	Typ	Max	Unit
Power Supply Voltage	V_{CC1}, V_{CC2}	3.15	3.3	3.45	V
Noise on Power Supply [2]	-	-	-	100	mV_{P-P}
Differential Termination Impedance [4]	-	-	100	-	Ω
Optical Input Center Wavelength	λ	-	1310	-	nm
Input Optical Power Variation	-	-	3	5	dB
Operating Temperature (case)	-	0	-	80	°C

Note 2: Frequency range of Supply noise is to be determined.
Note 3: V_{CT} enable or disable all channels simultaneously.
(Default is enable, may be left open, if not used)
Note 4: Differential impedance between complementary outputs.

ELECTRO-OPTICAL CHARACTERISTICS

Below specified electro-optical characteristics are given under the operating condition stated in Table 4 and Table 5.

Table 6. Electro-Optical Characteristics - Transmitter

Parameter	Symbol	Min	Typ	Max	Unit
Supply Current for V_{CC1} and V_{CC2}	I_{CC}	280	320	600	mA
Supply Current for V_{TT}	I_{TT}	-	0	-	mA
Power Dissipation (at 25 °C ambient)	-	-	0.96	-	W
Power Dissipation (at 80 °C ambient)	-	-	1.44	-	W
Differential Input Impedance [5]	-	-	100	-	Ω
Average Launched Power at t_0	-	- 13	- 10	- 6	dBm
Optical Power Decrease to End-of-Life	-	-	-	3	dB
Average Optical Power Variation	-	-	2	3	dB
Optical Power Level (if Laser is Disabled)	-	-	-	- 35	dBm
Wavelength	λ	1260	1310	1360	nm
Spectral Width (rms)	Δλ	-	-	4	nm
Optical Extinction Ratio at DC [6]	-	3	-	-	dB

Table 7. Electro-Optical Characteristics - Receiver

Parameter	Symbol	Min	Typ	Max	Unit
Supply Current for V_{CC1} and V_{CC2}	I_{CC}	-	270	-	mA
Power Dissipation (at 25 °C ambient)	-	-	0.90	-	W
Power Dissipation (at 80 °C ambient)	-	-	0.90	-	W
Data Output Swing (single ended)	V_{HIGH} - V_{LOW}	-	200	-	mV
Control Output LOS Low (no signal)	V_{LOS}	-	0	0.5	V
Control Output LOS High	V_{LOS}	V_{CC} - 0.3	V_{CC}	-	V
Minimum Received Power (Sensitivity)	-	-	-19	- 18	dBm
Maximum Received Power (Saturation)	-	- 5	-	-	dBm

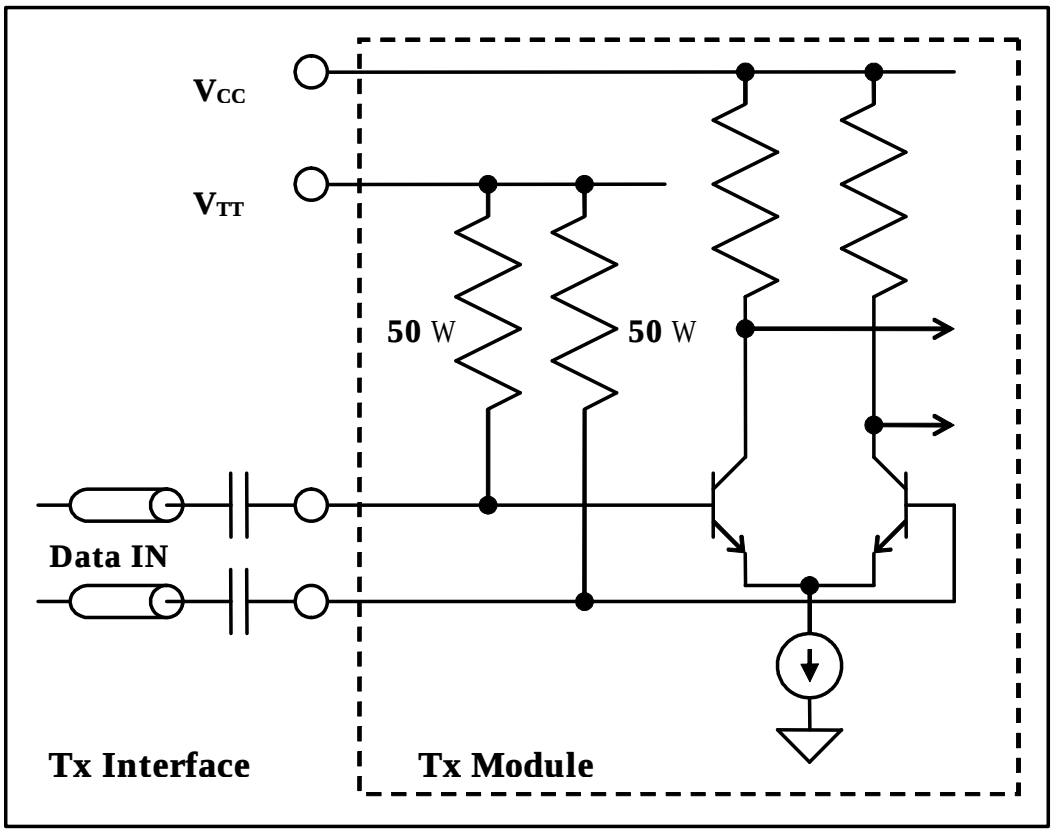
Table 8. Electrical Characteristics - Link

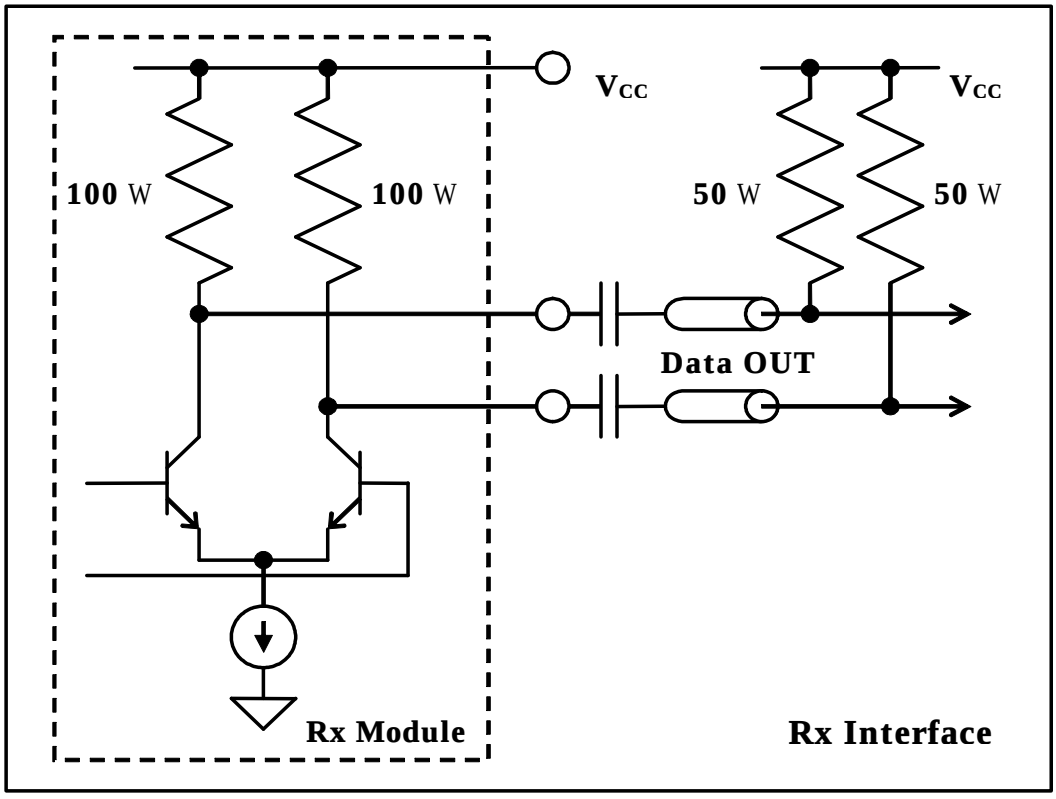
Parameter	Symbol	Min	Typ	Max	Unit
Data Rate	-	0.01	1.0	1.25	Gb/s
Total Link Jitter (peak to peak, 6σ)	-	-	-	300	ps

Note 5: Differential impedance between complementary inputs.
Note 6: Ratio between Optical DC High and Optical DC Low.

Note: This data sheet is preliminary.
The conditions and characteristics may be changed without notice.

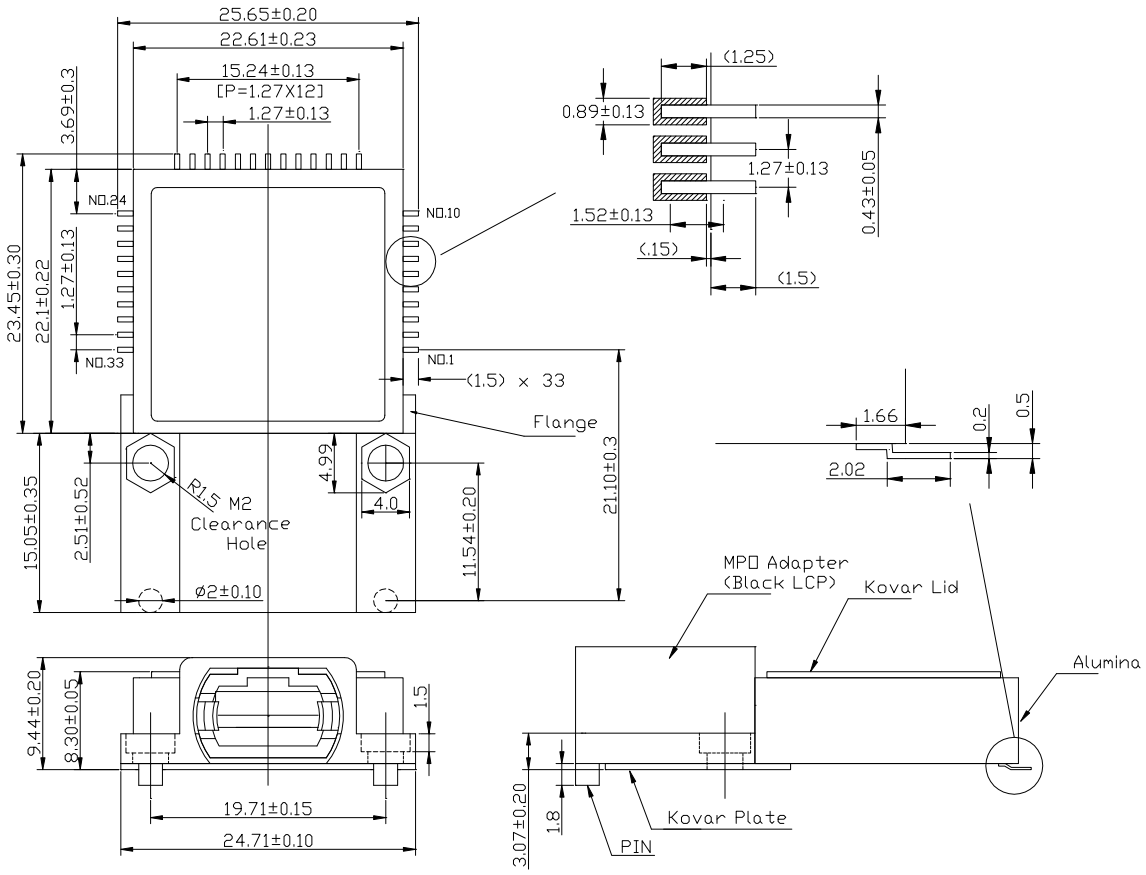
ELECTRICAL INTERFACE





PIN ASSIGNMENTS AND PHYSICAL DIMENSIONS

The physical dimensions and pin assignments of parallel optical interconnect are shown below. Both Transmitter module and Receiver module have the same physical dimensions.



LEAD CO-PLANALITY = ± 0.1 mm
TOLERANCES UNLESS OTHERWISE SPECIFIED ± 0.1

Pin Assignments

8 Channel Tx – POT10K08MFPX				8 Channel Rx – POR10K08MFPX		
Pin #	**Name**	**Logic Level**	**Description**	**Name**	**Logic Level**	**Description**
1	V_{CC1}	-	Power Supply (Vcc)	V_{CC1}	-	Power Supply (Vcc)
2	V_{CC2}			V_{CC2}		
3	V_{TT}		Termination Voltage	N/C		Left Open
4	N/C		Left Open	N/C		
5	V_{CT}	LVTTL in	Laser Enable/Disable	LOS	LVTTL out	Loss of Signal
6	N/C	-	Left Open	N/C	-	Left Open
7	N/C			N/C		
8	DI0N	-	Data input 0 inverted	DO0P	-	Data output 0 non-inverted
9	DI0P	-	Data input 0 non-inverted	DO0N	-	Data output 0 inverted
10	GND	-	Ground	GND	-	Ground
11	DI1N	-	Data input 1 inverted	DO1P	-	Data output 1 non-inverted
12	DI1P	-	Data input 1 non-inverted	DO1N	-	Data output 1 inverted
13	DI2N	-	Data input 2 inverted	DO2P	-	Data output 2 non-inverted
14	DI2P	-	Data input 2 non-inverted	DO2N	-	Data output 2 inverted
15	DI3N	-	Data input 3 inverted	DO3P	-	Data output 3 non-inverted
16	DI3P	-	Data input 3 non-inverted	DO3N	-	Data output 3 inverted
17	GND	-	Ground	GND	-	Ground
18	DI4N	-	Data input 4 inverted	DO4P	-	Data output 4 non-inverted
19	DI4P	-	Data input 4 non-inverted	DO4N	-	Data output 4 inverted
20	DI5N	-	Data input 5 inverted	DO5P	-	Data output 5 non-inverted
21	DI5P	-	Data input 5 non-inverted	DO5N	-	Data output 5 inverted
22	DI6N	-	Data input 6 inverted	DO6P	-	Data output 6 non-inverted
23	DI6P	-	Data input 6 non-inverted	DO6N	-	Data output 6 inverted
24	GND	-	Ground	GND	-	Ground
25	DI7N	-	Data input 7 inverted	DO7P	-	Data output 7 non-inverted
26	DI7P	-	Data input 7 non-inverted	DO7N	-	Data output 7 inverted
27	N/C	-	Left Open	N/C	-	Left Open
28	N/C			N/C		
29	N/C			N/C		
30	N/C			N/C		
31	V_{TT}		Termination Voltage	N/C		
32	V_{CC2}		Power Supply (V_{CC})	V_{CC2}		Power Supply (V_{CC})
33	V_{CC1}			V_{CC1}		
Case	GND		Ground	GND		Ground