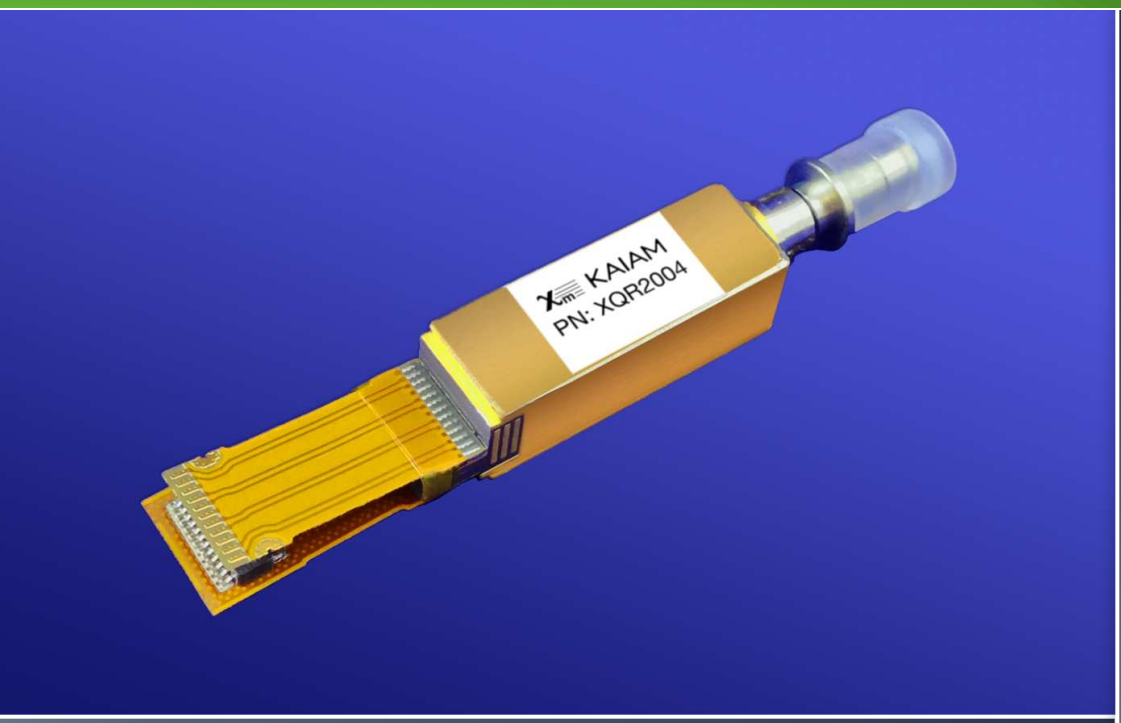


Uncooled 4 x 10Gb/s CWDM APD Mini-ROSA

KEY FEATURES

- *four APD photodiodes*
- *four independent APD bias inputs*
- *internal decoupling capacitors for each APD and TIA power inputs*
- *four TIA (Trans Impedance Amplifiers)*
- *CWDM wavelength demultiplexer*
- *extended temperature range (-5°C to 75°C)*
- *multi-rate operation*
- *global LOS alarm*
- *serial digital interface for DDM*
- *rectangular body fitting within a 6x6 mm cross section*
- *LC receptacle, electrically isolated from signal ground*
- *RoHS 6/6*
- *Telcordia GR468 qualified*

The **KAIAM** mini-ROSA consists of four APD photodiodes, four Trans Impedance Amplifiers (TIAs), and an optical demultiplexer in a hermetic package with an LC receptacle, and a flex circuit for interface to the transceiver PCB.

The target application for this mini-ROSA is for use in QSFP+ form factor pluggable transceivers for the IEEE 40GBASE-LR4 at 4x10.3125Gb/s, as well as other derived applications at aggregate bit rates of 4x (9.95 to 11.35 Gb/s).

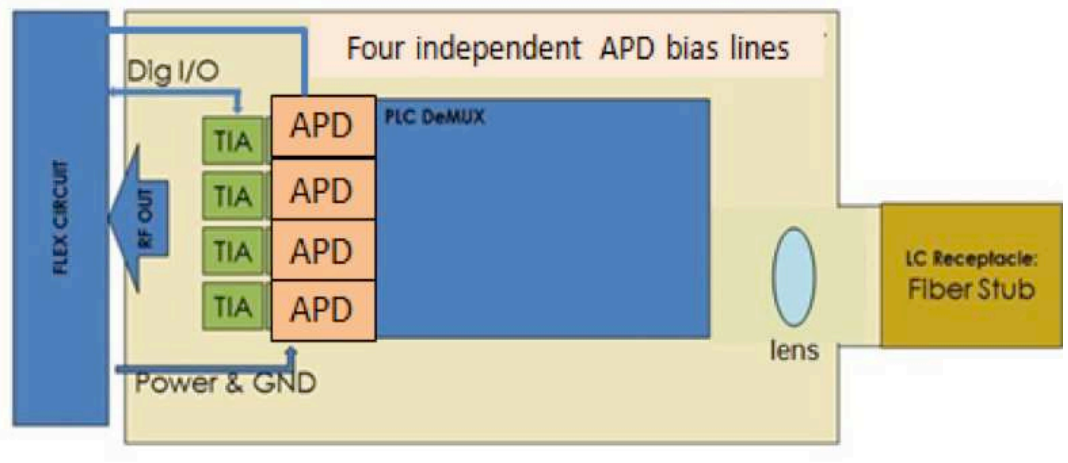
The mini-ROSA is qualified in accordance with:

- Telcordia GR468 (500g)
- RoHS 6/6
- Wiggle requirements

KAIAM

KAIAM Corporation 39655 Eureka Drive Newark, CA 94560 tel: +1 510 344-2231 www.kaiamcorp.com

FUNCTIONAL BLOCK DIAGRAM

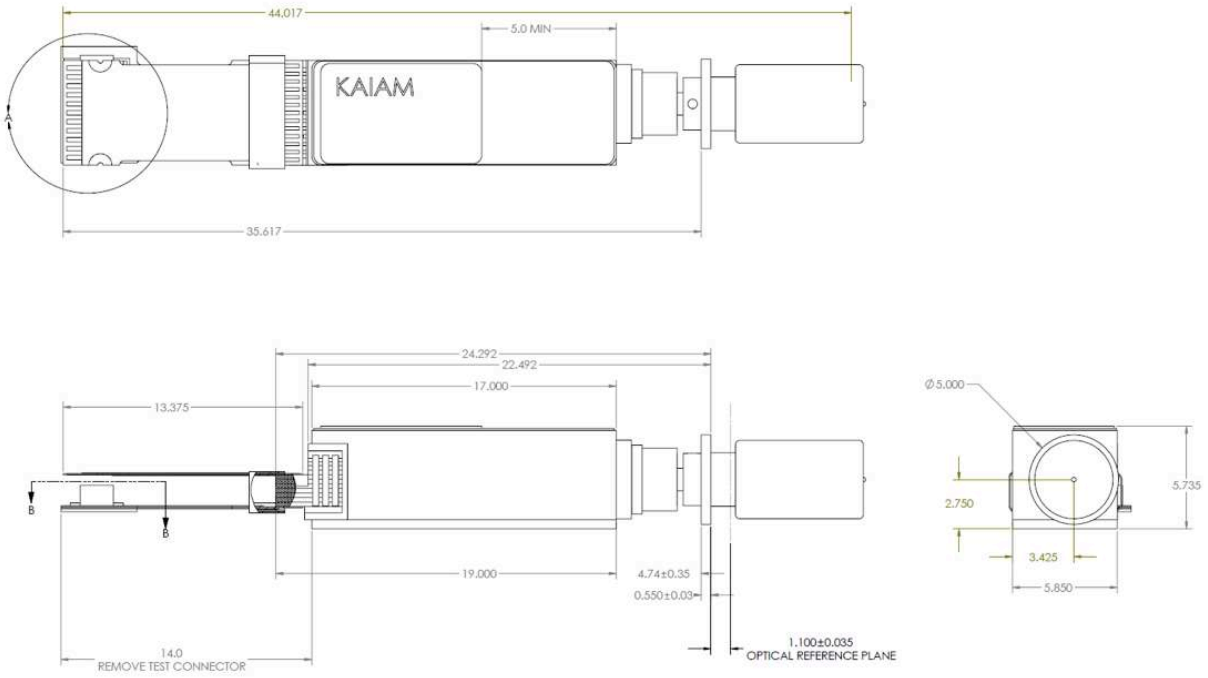


ELECTRO-OPTICAL SPECIFICATIONS

PARAMETER		SYMBOL	MIN	MAX	UNITS
Bit Rate		B	9.95	11.35	Gb/s
Sensitivity (OMA)		OMA_{in}		-19	dBm
Stressed Sensitivity (OMA)		$OMA_{in,str}$		-16.8	dBm
Vertical Eye Closure Penalty		VCP	2.2		dB
Stressed Eye J2 Jitter		J2	0.3		UI
Stressed Eye J9 Jitter		J9	0.47		UI
Overload Average Power		P_{in}	3.8		dBm
Channel Wavelength	Ch0	λ_0	1264.5	1277.5	nm
	Ch1	λ_1	1284.5	1297.5	
	Ch2	λ_2	1304.5	1317.5	
	Ch3	λ_3	1324.5	1337.5	
Wiggle			-1.5	+1.5	dB
Optical Return Loss		ORL		-26	dB
Supply Voltage		V_{cc}	3.05	3.50	V
Differential Output Impedance		Z_c	90	110	Ω

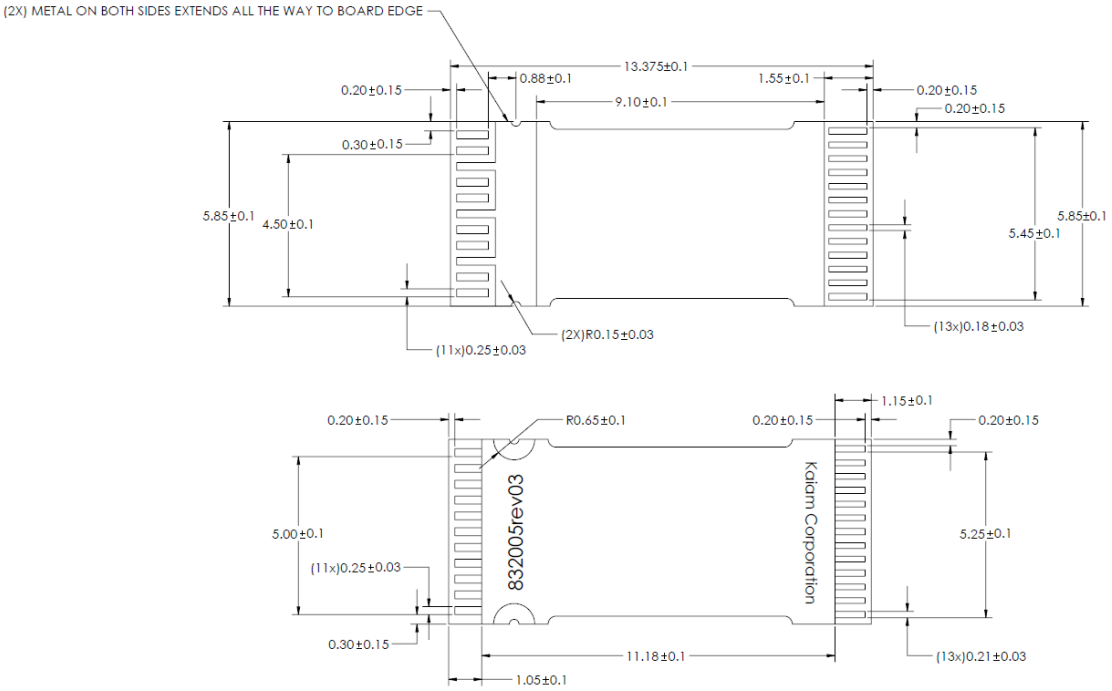
MECHANICAL OUTLINE

(all dimensions in mm)



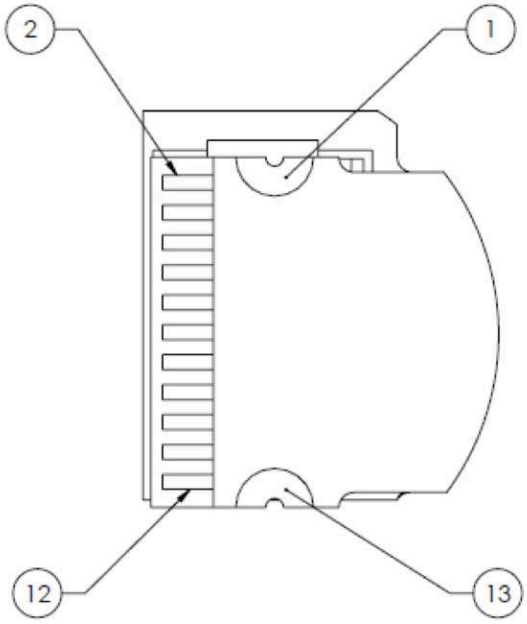
RF FLEX OUTLINE

(all dimensions in mm)



PIN ASSIGNMENT

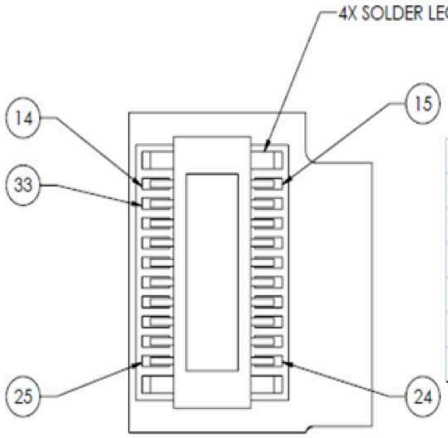
RF Flex Pin Assignment



PIN #	PIN NAME
1	GND
2	DATABAR CH3
3	DATA CH3
4	GND
5	DATABAR CH2
6	DATA CH2
7	GND
8	DATABAR CH1
9	DATA CH1
10	GND
11	DATABAR CH0
12	DATA CH0
13	GND

Pin assignment shown in the table for use with Gigoptix HXR5104B 4-Channel Receiver.

DC



20 PIN CONNECTOR PINOUT

Pin Number	Pin Name	Pin Number	Pin Name
TBD	VCC1	TBD	APD0
TBD	VCC2	TBD	APD1
TBD	SCL	TBD	APD2
TBD	SDA	TBD	APD3
TBD	NOTINT	TBD	GND
TBD	RSSI		

Note: Connector Hirose DF40C-20DP-0.4V(51), (http://www.digikey.com/product-detail/en/DF40C-20DP-0.4V(51)/H11618TR-ND/1969479)