

Uncooled 4 x 10Gb/s CWDM Mini-ROSA

The **KAIAM** mini-ROSA consists of four PIN photodiodes, four Trans Impedance Amplifiers (TIAs), an optical demultiplexer to separate the 4 input wavelengths, in a hermetic package with an LC receptacle, and 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:

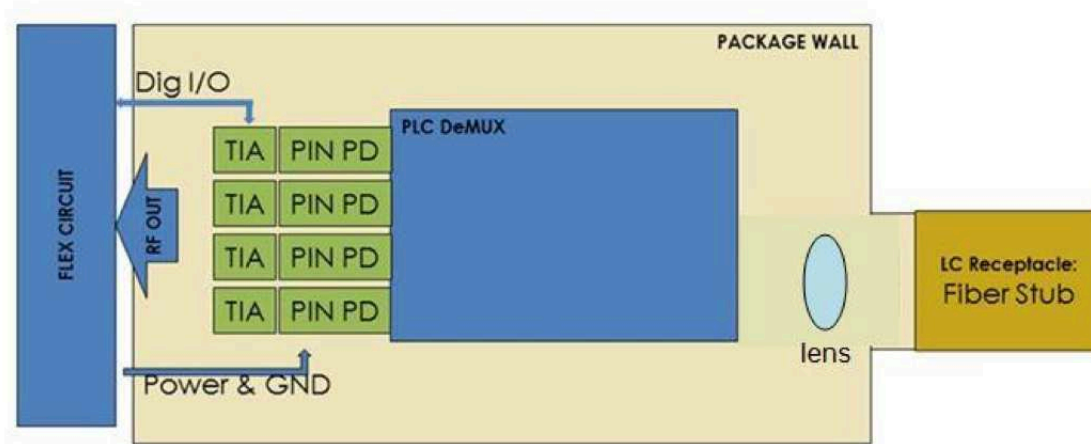
- Telcordia GR468 (500g)
- RoHS 6/6
- Wiggle requirements

KEY FEATURES

- four PIN photodiodes
- 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



FUNCTIONAL BLOCK DIAGRAM

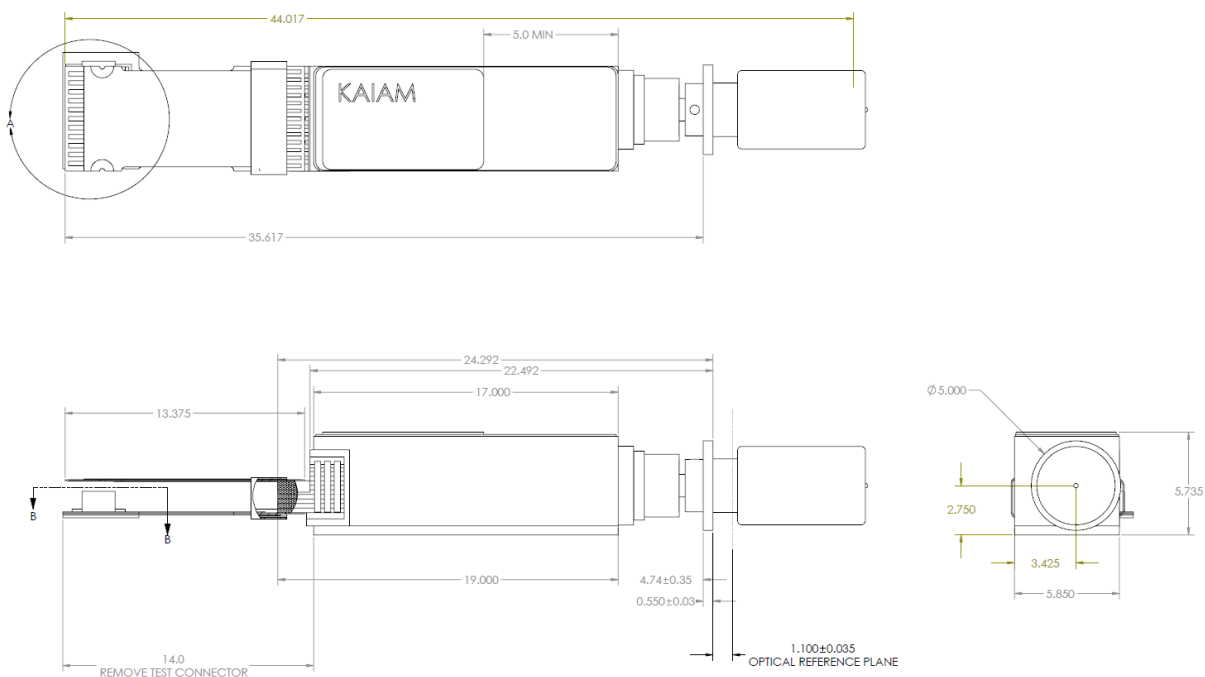


ELECTRO-OPTICAL SPECIFICATIONS

PARAMETER	SYMBOL	MIN	MAX	UNITS	
Bit Rate	B	9.95	11.35	Gb/s	
Sensitivity (OMA)	OMA _{in}		-11.5	dBm	
Stressed Sensitivity (OMA)	OMA _{in,str}		-9.6	dBm	
Vertical Eye Closure Penalty	VCP	1.9		dB	
Stressed Eye J2 Jitter	J2	0.3		UI	
Stressed Eye J9 Jitter	J9	0.47		UI	
Overload Average Power	P _{in}	2.3		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	
Differential Output Voltage Swing	Compliant to IEEE 802.3ba				

MECHANICAL OUTLINE

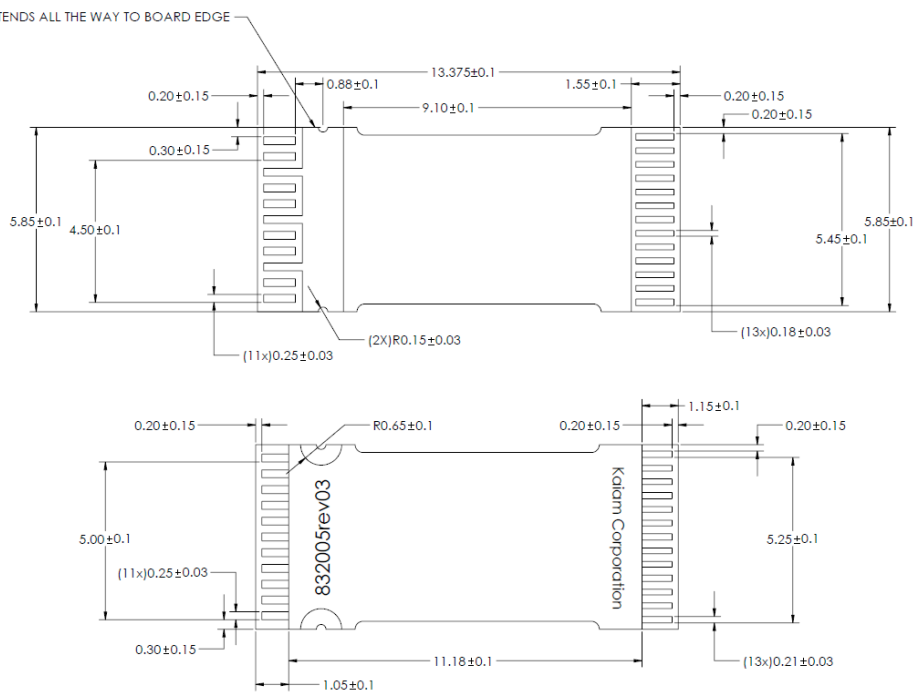
(all dimensions in mm)



RF FLEX OUTLINE

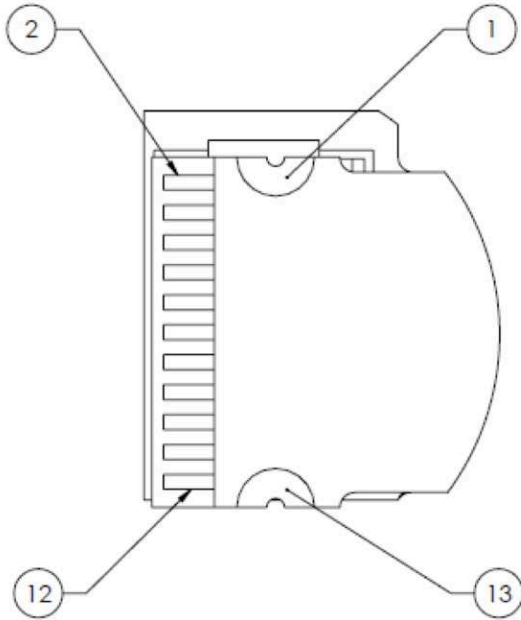
(all dimensions in mm)

(2X) METAL ON BOTH SIDES EXTENDS ALL THE WAY TO BOARD EDGE



PIN ASSIGNMENT

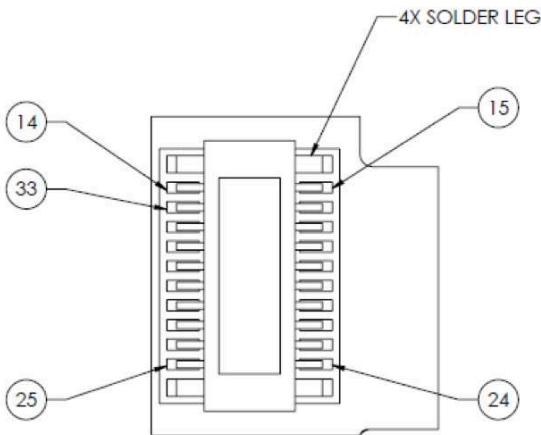
RF Flex Pin Assignment



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 #	PIN NAME	PIN #	PIN NAME
14	GND	24	NC
15	SDA	25	GND
16	NC	26	GND
17	SCL	27	GND
18	VCC	28	GND
19	VCC	29	GND
20	VCC	30	GND
21	VCC	31	GND
22	NOTINT	32	GND
23	RSSI	33	GND

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

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