

Data Sheet

2.5Gb/s APD preamp Mini-DIL receiver

ATM2400C

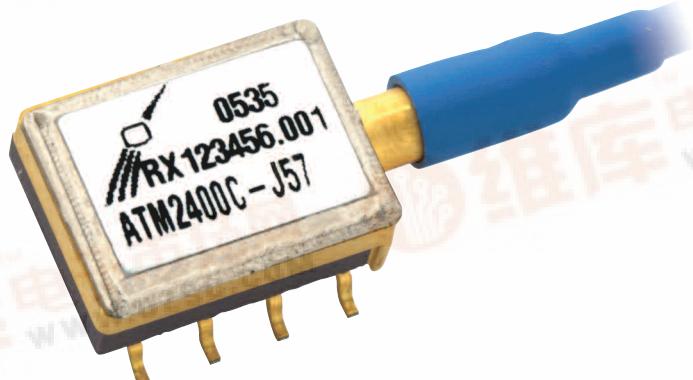
This product is a high sensitivity optical receiver optimized for OC-48 optical transport systems. The high sensitivity performance given by the avalanche photodiode (APD) and preamp make the product ideal for maximizing unamplified transmission distances. The receiver supports FEC data rates up to 2.7Gb/s. The DC component cancellation function offered by the preamp allows the product to operate error free under high input power conditions. The receiver contains an APD, a low noise preamplifier, a precision thermistor and a single-mode connectorized fiber pigtail, all housed in an industry-standard Mini-DIL package.

Features:

- High sensitivity, -34dBm typical
- Better than 0dBm overload
- Industry-standard Mini-DIL package footprint
- Differential data outputs
- -40°C to +85°C maximum operating temperature range
- RoHS 5/6 compliant 

Applications:

- OC-48 Optical transport Systems
- OC-48 DWDM Metro and Long Haul Systems
- STM-16 SDH or OC-48 SONET Systems



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Operating characteristics

All parameters are measured with outputs 50 Ohm AC coupled, specified at a case temperature of 25°C unless otherwise stated.

Optical wavelength between 1525-1575nm. Data to 1610nm available on request.

Parameter	Symbol	Measurement Conditions	Min	Typ	Max	Unit
APD breakdown voltage	V_{br}	$I_d = 10\mu A$	50		65	V
APD temperature coefficient of breakdown voltage	TV_{br}		0.09	0.1	0.12	V/°C
Differential Transimpedance gain	Z_T	$I_{ph} = 40\mu A$ mean	2.8	3.5	4.5	kΩ
Bandwidth _[1]	S_{21}	-3dB from 100MHz	1.7	2.0		GHz
Lower cut-off frequency _[1]	S_{21}	-3dB from 100MHz			50	kHz
APD sensitivity over temperature		2.5Gb/s, 2 ²³ -1 PRBS, extinction ratio = 15dB BER < 1x10 ⁻¹⁰ -5°C to +70°C case	-32	-33.5		dBm
APD sensitivity		2.5Gb/s, 2 ²³ -1 PRBS extinction ratio = 15dB BER < 1x10 ⁻¹⁰ 25°C case		-34		dBm
APD overload over temperature	P_{sat}	2.5Gb/s, 2 ²³ -1 PRBS, extinction ratio 15dB 1x10 ⁻¹⁰ BER, M=3 -5°C to +70°C case	-3	+1		dBm
Output voltage swing at overload	V_{OUT}	Peak-to-peak differential	220	280	400	mV
Optical return loss	ORL		30			dB
Power supply current	I_{CC}			28	45	mA
Power supply voltage	V_{CC}		3.0	3.3	3.6	V
Output return loss up to 1.8GHz	S_{22}		10			dB
Output return loss up to 3.0GHz	S_{22}		5			dB
Thermistor resistance	R_{TH}	Beta constant = 3950		10		kΩ

Note:

[1] Pin = 30dBm, M = 10.

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Absolute Maximum Ratings

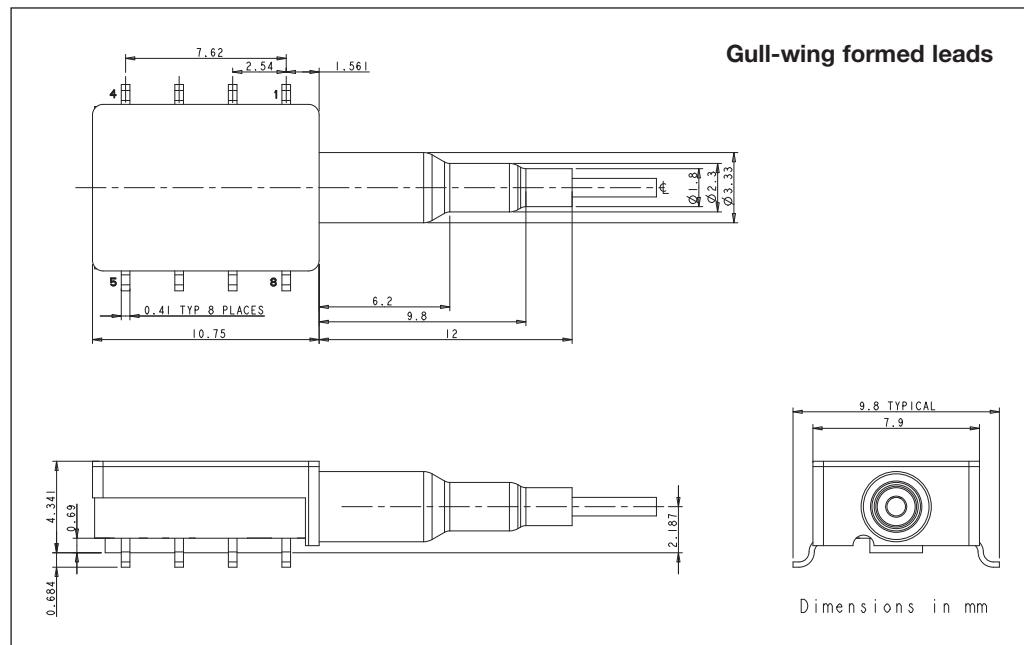
Parameter	Symbol	Min	Max	Unit
Operating case temperature	T_{op}	-40	+85	°C
Storage temperature	T_{stg}	-40	+85	°C
Optical input power			+1	dBm
Power supply voltage		-0.5	6.0	V
APD supply voltage _[1]		0	V_{br}	V
Fiber bend radius		20		mm
Lead soldering time at 260°C		10		s

Note:

[1] APD bias requirements vary from device to device. APD breakdown voltage and bias data, relative to a thermistor resistance of 10kΩ will be supplied with each device.

Class 1 ESD precautions must be observed when handling these devices.

Outline Drawing

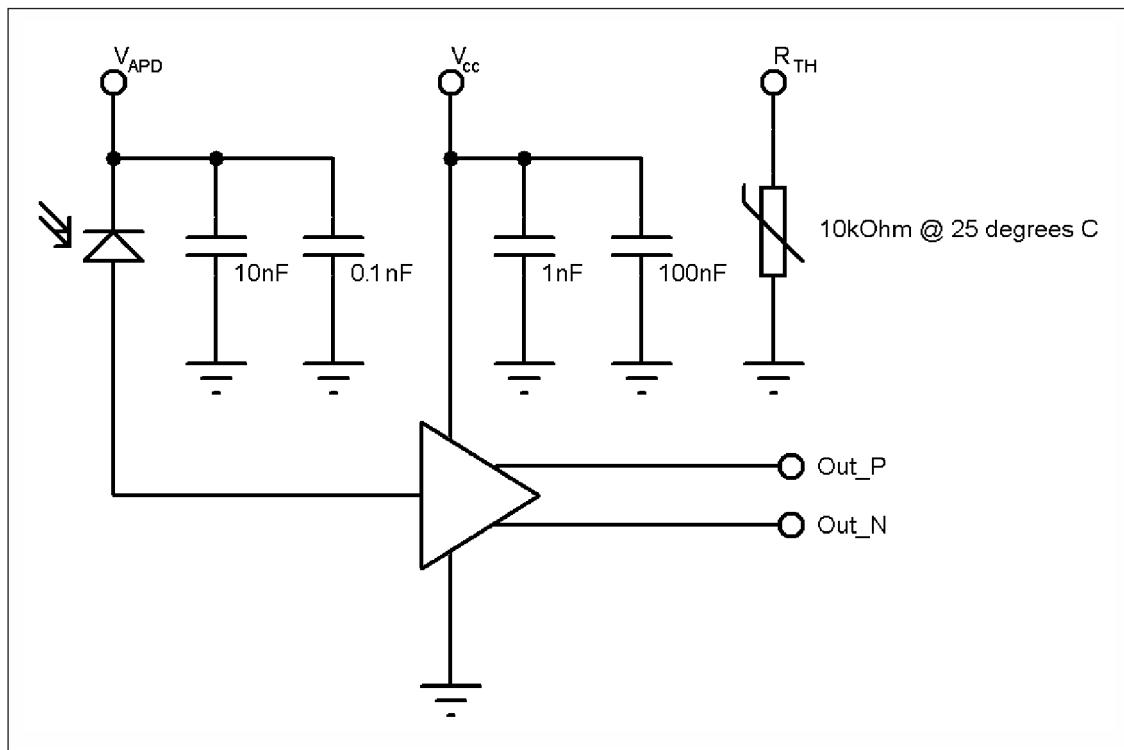


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Pin Out

Pin #	Symbol	Description
1	V_{APD}	APD supply voltage (+ve)
2	GND	Case ground
3	OUT_P	Data out +ve
4	GND	Case ground
5	R_{TH}	Thermistor
6	OUT_N	Data out -ve
7	GND	Case ground
8	V_{CC}	Power supply (+ve)

Schematic Diagram



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RoHS Compliance



Bookham is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

Ordering Information:

ATM2400C

- (Connector)
J28 = SC/PC
J57 = LC

e.g. ATM2400C-J28 is a 3.3 volt 2.5Gb/s APD preamp Mini-DIL receiver with gull-wing-formed leads and an SC/PC connector.

Other options available on request.

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