



AC6212 Series

1.25 Gbps APD Receiver in 5-pin TO-can Package



Features:

- Wide dynamic range with differential output
- Low power +3.3 V operation
- Wide operation temperature (-40°C to +85°C)
- High performance
- Suitable for 1.25 Gbps applications

Applications: Telecom and Datacom

Electrical/Optical Characteristics ($T_c=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply	V_{cc}	3.0	3.3	3.6	V
Supply Current ⁽¹⁾	I_{cc}		30	39	mA
Bandwidth	BW	0.9	1.0		GHz
Low-Frequency Cut Off	LF		50		kHz
Rise Time/Fall Time ^(2,3)	T_r/T_f			250	ps
Wavelength	λ	1100		1650	nm
Responsivity M=1 1310/1550nm	R		0.8/0.9		A/W
APD Bias (variation 0.1 V/°C)	V_{APD}		50		V
Single Ended Output Impedance	R_o	25		50	Ohms
Sensitivity ^(3,4)	P_{sens}		-35	-34	dBm
Optical Overload ^(3,5)	P_{over}	-3	0		dBm
Conversion Gain (M=10) ⁽⁶⁾		100	130		kV/W
Differential Output Voltage ⁽⁷⁾	V_{diff}		240		mVpp

(1) No Loads

(2) 20% to 80% at -20 dBm input

(3) $\lambda=1550$ nm, ≥ 0.9 A/W at M=1

(4) BER = 10^{-10} , PRBS $2^{31}-1$, ER =10 dB, V_{APD} =optimum Vbias

(5) BER = 10^{-10} , PRBS $2^{31}-1$, ER =10 dB, M=3

(6) Single ended output voltage (peak to peak) to optical power swing (OMA), -33 dBm

(7) Into 50 Ohms

Absolute Maximum Ratings:

Parameter	Symbol	Min	Max	Unit
Case Temperature	T_c	-40	+85	°C
Storage Temperature	T_{stg}	-40	100	°C
Humidity Range	RH	5	95	%
Amplifier Bias Voltage	V_{ccmax}		4.0	V
Input Optical Power	P_{max}		+3	dBm
Load Solder Temp. and Time			260 °C, 10sec	

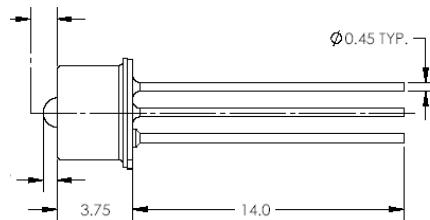
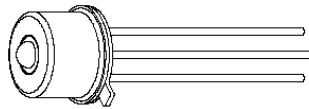


Outline Drawing (Customer special order is available):

Lens Options

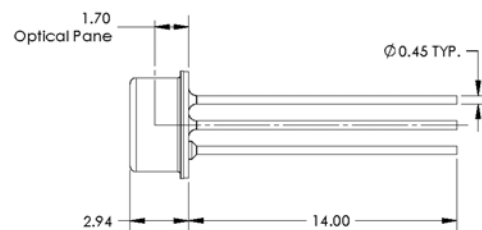
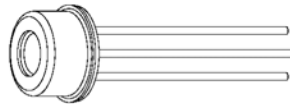
X = S for ball lens, **X = F** for flat window,

X = S (Ball lens)



Unit: mm

X = F (Flat window)

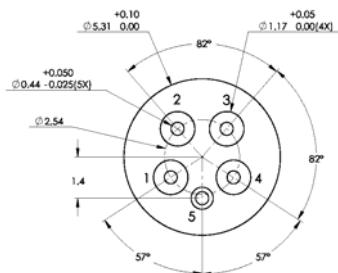


Unit: mm

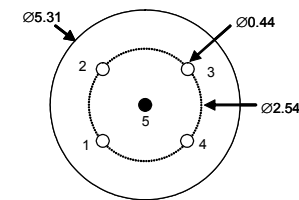


5-pin Pin-out Assignment			
Pin #	“A”	“B”	“F”*
1	Dout-P	Dout-P	Dout-P
2	V _{APD}	V _{cc}	V _{APD}
3	V _{cc}	V _{APD}	V _{cc}
4	Dout-N	Dout-N	Dout-N
5	GND	GND	GND

Note: “F” uses alternate 5-pin header. See bottom View drawings



**Bottom View for
Pin-out “A” and “B”**



**Bottom View for
Pin-out “F”**

Ordering Information:

AC6212-W-X

W = Pin-out: “A,” “B” or “F” see table. (Custom pin-out available)

X = TO-cap: “S” for Ball lens, “F” for Flat window

Example: **AC6212-B-S** is an Archcom 5-pin, 1.25 Gbps APD TO-can receiver with Type-B pin-out with ball lens

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