



Preliminary

AC6222 Series

2.5 Gbps APD Receiver in 5-pin TO Package



Features:

- Wide dynamic range with differential output
- Low power +3.3V operation
- Wide operation temperature (-40°C~+85°C)
- High reliability
- Suitable for 2.5Gbps applications needing receptacle or pigtail module

Applications: Telecom and Datacom

Electrical/Optical Characteristics (T_c=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply	V _{cc}	3.0	3.3	3.6	V
Supply Current ⁽¹⁾	I _{cc}		42	58	mA
Bandwidth (M=10, -30dBm)	BW	1.5	2.0		GHz
Low-Frequency Cut Off	LF		5		kHz
Rise Time/Fall Time ^(2,3)	T _r /T _f			150	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}		45	50	V
Breakdown Voltage (I _d =10 uA)	V _{BR}	40		60	V
Dark Current (V _{APD} = 0.9 V _{BR})	I _d			60	nA
Single Ended Output Impedance	R _o		50		Ohms
Sensitivity ^(3,4)	P _{sens}		-34	-32	dBm
Saturation Power ^(3,5)	P _{sat}	-3	0		dBm
Conversion Gain ⁽⁶⁾			1800		V/W
Differential Output Voltage	V _{diff}		200	250	mVpp
Equiv. Input Noise Current Dens.	I _{noise}		5		pA/√Hz

(1) No Loads

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

(3) λ=1550 nm

(4) BER = 10⁻¹⁰, PRBS 2³¹-1, ER =10 dB, V_{APD}=optimum Vbias

(5) BER = 10⁻¹⁰, PRBS 2³¹-1, ER =10 dB, M=3

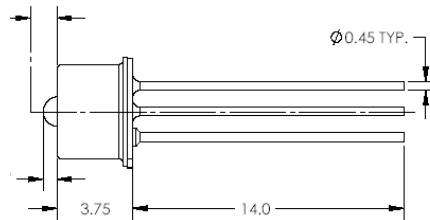
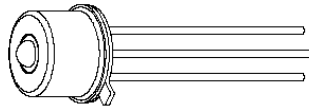
(6) Single ended output voltage (peak to peak) to optical power swing (OMA), -30dBm, M=1

Absolute Maximum Ratings:

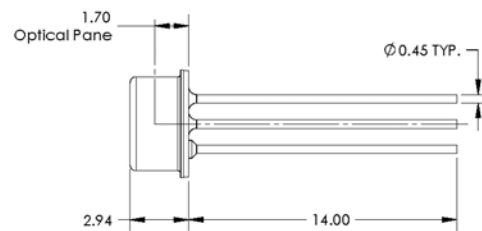
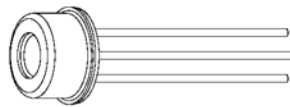
Parameter	Symbol	Min	Max	Unit
Case Temperature	T_C	-40	+85	°C
Storage Temperature	T_{stg}	-40	100	°C
Humidity Range	RH	5	95	%
Amplifier Bias Voltage	V_{ccmax}		4.0	V
Input Optical Power	P_{max}		+3	dBm
Load Solder Temp. and Time			260 °C, 10sec	

Outline Drawing (Customer special order is available):**Lens Options**

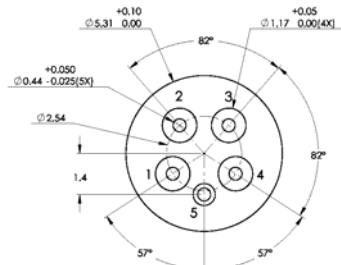
Y = S for ball lens, Y = F for flat window,

Y = S (Ball lens)

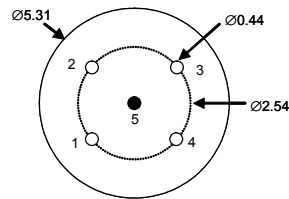
Unit: mm

Y = F (Flat window)

Unit: mm



**Bottom View for
Pin-out "B" and "E"**



**Bottom View for
Pin-out "F"**

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

Note: "F" uses alternate 5-pin header. See

Bottom View drawings

Ordering Information:

AC6222-W-X

W = Pin-out: "B," "E," and "F" see table and drawings.

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

Example: AC6222-B-S is an Archcom 5-pin, 2.5 Gbps TO-Can APD receiver with Type-B pin-out and ball lens

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