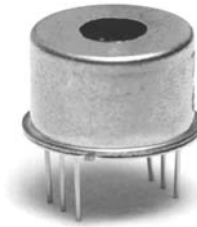




PRELIMINARY

ANALOG MODULES, INC.**MODEL 7510**HIGH SENSITIVITY APD
OPTICAL RECEIVER**HIGH SENSITIVITY APD OPTICAL RECEIVER**

- **OUTSTANDING LOW NEP**
- **BANDWIDTH: 400MHz**
- **INCORPORATES TEC AND TEMPERATURE SENSOR**
- **HERMETIC LOW PROFILE TO-8 PACKAGE, 0.1 CU. IN.**
- **80µm or 200µm InGaAs APD DETECTOR WITH MASK**
- **OPERATION FROM 1.0µm to 1.7µm WAVELENGTH**

**DESCRIPTION:**

The **7510** is a high gain low noise APD-preamp optical receiver. The compact construction (modified TO-8 header) and PCB mounting capability makes the **7510** ideal for miniature applications. The thermo-electric heater/cooler allows the highest performance to be achieved with an external control circuit.

SPECIFICATIONS:

PARAMETER	7510-2-03			7510-2-04			Units
	Min.	Typical	Max.	Min.	Typical	Max.	
InGaAs APD Active Diameter	-	80	-	-	200	-	µm
Bandwidth (3dB)	350	400	450	350	400	450	MHz
Responsivity (1.55µm, 6ns pulse)	120	150	180	120	150	180	kV/W
Noise Equivalent Power (NEP) @1.55µm	7	8.5	14	10	13.5	20	nW
Noise (RMS) at output	1.2	1.4	1.7	1.8	2	2.4	mV
Linear Dynamic Range (Peak signal/RMS noise)	2650:1	3900:1	5000:1	1900:1	2750:1	3300:1	
Peak Output Pulse (Negative Swing)	4.5	5.5	6	4.5	5.5	6	V
DC Output Offset @ 25°C	2.5	2.8	3	2.5	2.8	3	V
APD							
Bias Voltage @ 25°C	40	60	75	40	50	75	V
Bias Current	2	10	20	10	70	150	nA
Temperature Coefficient (TEC off)	-	+0.14	-	-	+0.14	-	V/°C
THERMOELECTRIC COOLER (TEC)							
Voltage	-	-	0.9	-	-	0.9	V
Current	-	-	0.8	-	-	0.8	A
TEMPERATURE							
Operating	-40	-	+80**	-40	-	+80**	°C
Storage	-55	-	+85	-55	-	+85	°C
POWER							
Pre-amp enabled	+4.75 -4.75	+5 @ 20mA -5 @ 13mA	+5.25 -5.25	+4.75 -4.75	+5 @ 20mA -5 @ 13mA	+5.25 -5.25	VDC

*All measurements made at 25°C, R_L = 50Ω, AC Coupled

**Useful life of TEC is seriously reduced at temperatures in excess of 80°C.

Specifications subject to change without notice.

APPLICATIONS:*Eyesafe Sensors, Medical Applications, Laboratory Instrumentation, Ranging, LIDAR*

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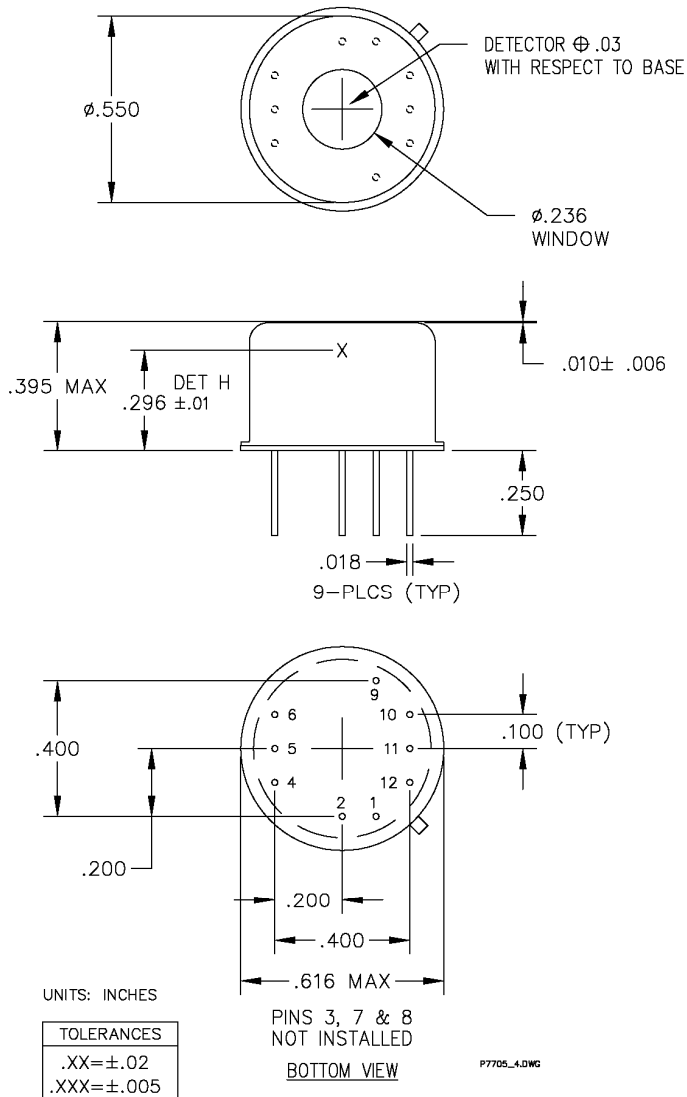
CONNECTIONS:

PCB mount pins

Contact factory for optional test PCB

TEMP SENSOR OUTPUT:

DC output slope = -2.4mV/C



WINDOW: $.035 \pm .006$ " THK.

RI = 1.469 @ 1550nm; 1.476 @ 1064nm.

Model 7510 Block Diagram

