ANALOG MODULES, INC.

a HEICO company

MODEL 712B

GaAs FET LOW NOISE
PHOTODETECTOR-AMPLIFIER MODULES

LOW NOISE, HIGH GAIN, GaAs FET PHOTODETECTOR-AMPLIFIER MODULE

- **ULTRA LOW NOISE - Down to 15fW/√Hz**
- **HIGH BANDWIDTH – Up to 60MHz**
- **AC or DC Coupled Output**
- **HIGH GAIN – 1MV/A Transimpedance**
- **SILICON OR InGaAs PIN's & APD's**
- **DIRECTIVE 2011/65/EU (RoHS II) Compliant**

DESCRIPTION:

The ***712B Series*** Low Noise, High Bandwidth Photodetector-Amplifier Modules offer high gain amplifiers with the flexibility of incorporating various silicon and InGaAs photodetectors for low signal level sensing applications. The ***712B Series*** is based on the ***312B Series*** transimpedance amplifiers. Consult factory for different detectors.

SPECIFICATIONS:

Input	Silicon or InGaAs photodetector (See table for characteristics.) 3μA maximum DC light-induced current
Output	
Load	50Ω
Swing	> +3V pk
Coupling	AC (add -AC to part number) DC (add -DC to part number) AC cut-out frequency of ≤ 250Hz
Gain	1MV/A transimpedance Multiply transimpedance gain by detector responsivity at peak wavelength to get V/W in table.
Polarity	Non-Inverting Positive output when flux applied

Power	+12 to +15VDC at 80mA typical
Temperature	-20° to +70°C
Connections	
Input	Photodetector
Output	SMB (SMB to BNC cable provided)
Power	Solder Pins
Bias	9V internal bias may be over-ridden by external supply. External Bias Pin decoupled with 0.01μF, 1kV capacitor
Size	1.98" x 3.2" x 0.5"
Weight	4 ounces
MTBF	> $1x10^7$ hrs

RoHS

ISO 9001 CERTIFIED

Specifications subject to change without notice.

APPLICATIONS:

High Speed, Low Light Level Sensing, LIDAR

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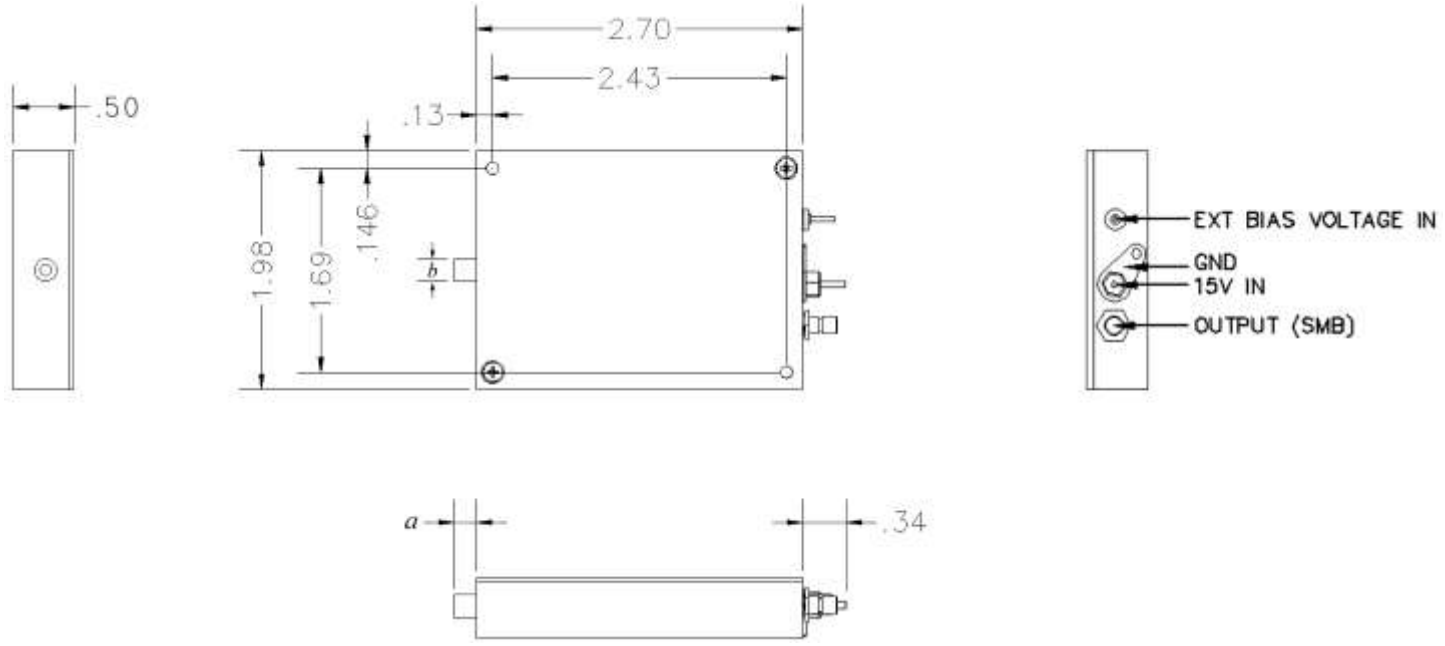
MODEL NO.	PHOTODIODE	ACTIVE AREA DIAMETER	PEAK	REVERSE BIAS	BANDWIDTH(5)	NOMINAL GAIN	TYPICAL NOISE (4)
712B-1	Si PIN	1.2mm	900nm	NC (1) internal	50MHz	0.62V/µW	2.2pW/√Hz
712B-2	Si APD(3)	0.5mm	830nm	180-250V (2)	60MHz	100V/µW	15fW/√Hz
712B-3	InGaAs PIN(3)	100µm	1.55µm	NC (1) internal	60MHz	1.0V/µW	0.8pW/√Hz
712B-4	InGaAs PIN(3)	300µm	1.55µm	NC (1) internal	60MHz	1.0V/µW	1.2pW/√Hz

(1) Internal bias provided at 9.6 ±0.1VDC.
(2) Adjustable HV supply required. Optional *Model 521A* or *522* available (consult factory).
(3) Available in FC receptacle (consult factory).
(4) Actual noise may vary by ±20% due to detector tolerance. Noise is greater with higher capacitance detectors.
(5) Bandwidth tolerance is ± 20%.

Typical Part Number: ***712B-2-AC =***

Transimpedance Gain:	1MV/A
Detector:	0.5mm Si APD
Polarity:	Non-Inverting
Normal Gain:	100V/µW
Noise:	15fW/√Hz
3dB frequency:	≥60MHz
Cut-on frequency:	≤250Hz
Coupling:	AC



Model	*a*	*b*
712B-1	0.18	0.153
712B-2	0.18	0.153
712B-3	0.14	0.182
712B-4	0.14	0.182

Dimensions are in inches.