

Amplifiers

Low Noise, Wide Bandwidth

Overview

Kolmar Technologies offers many choices of low noise amplifiers matched to a detector type to obtain a minimum noise figure and maximum D^* . HgCdTe photoconductors require amplifiers with minimum noise figure at 50 ohms input. Very high impedance detectors, such as InSb photodiodes, require amplifiers with minimum current noise.

All Kolmar amplifiers include a detector biasing circuit to optimize the detector for its particular application. With slight reverse bias, LWIR infrared photodiodes have a square root of 2 improvement in detectivity. Reverse bias voltage eliminates shot noise of the majority carrier current and reduces junction capacitance. Therefore the bias increases bandwidth and improves D^* . Bias is also a factor in linearity and dynamic range. We can make the tradeoffs to achieve the optimum detector amplifier match for your application.

Amplifiers for KV104 series HgCdTe photodiodes

Model	Type	Gain	Bandwidth	Output
KA020-A1A	TIA + bias	1E4 V/A	100 Hz – 20MHz	20V p-p
KA020-A1	TIA + bias	1E4 V/A	DC – 20 MHz	20 V p-p
KA050-A1	TIA + bias	8E3 V/A	DC – 50 MHz	20 V p-p
KA100-A1	TIA + bias	5E3 V/A	DC – 100 MHz	6 V p-p

Amplifiers for KMPC series HgCdTe photoconductors

Model	Type	Gain	Bandwidth	Output
KA-S3	TIA + bias	1E4/Rd V/V	20 Hz – 300 kHz	20 V p-p
KA-S4	TIA + bias	1E4/Rd V/V	20 Hz – 500 kHz	20 V p-p
KA-S5	TIA + bias	1E4/Rd V/V	20 Hz – 1 MHz	20 V p-p

Amplifiers for KISD series InSb photodiodes

Model	Type	Gain	Bandwidth	Output
KA020-C1	TIA + bias	2E4 V/A	DC – 20 MHz	20 V p-p
KA05-C1	TIA + bias	5E4 V/A	DC – 5 MHz	20 V p-p
KA03-C1	TIA + bias	1E5 V/A	DC – 3 MHz	20 V p-p
KA01-E6-AG	Adj. gain 1-2-5-10step + bias	1E5 – 1E7 V/A	DC – 1 MHz	20 V p-p

Post – Amplifiers: Gain and Line Drivers

Model	Type	Gain	Bandwidth	Output
KA100-E1	Buffer	1 V/V	DC – 100 MHz*	20 V p-p
KA100-E2	Buffer	20 V/V	DC – 100 MHz*	20 V p-p
KA100-E3	Buffer	2 V/V	DC – 100 Hz*	20 V p-p

*AC coupled 100 Hz – 100 MHz (optional)