PbSe Detector (2-5μm) Lead Selenide Infrared Detecgtors (2-5 microns)

Advantages

- New Automated Chemical Processing (ACP) produces higher yield at lower cost.
- Extremely high reliability under extreme conditions.
- Long shelf life.
- Hermetically sealed package to completely eliminate humidity attack on detection area.
- Wide range of electrical characteristics available.
- Wide range of sizes available.
- Immediate delivery.
- Compact integrated filter/detector combinations.
- 100% tested.
- State of the art microelectronics fabrication capability.
- Specializing in high density arrays.

Overview

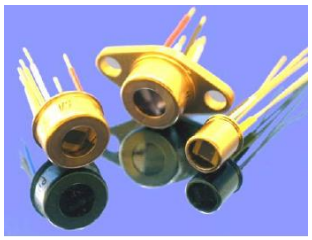
Sensarrayinfrared manufactures state-of-the-art lead selenide devices (PbSe) for room temperature operation as well as enhanced sensitivity thermoelectrically cooled operation. These devices can be supplied with integrated optical filters, pre-amplifiers or multiplexed amplifiers for high density arrays.

Listed below ae typical room temperature electrical characteristics of Automated Chemical Processing (ACP) PbSe detectors.

PbSe Type	Detector Size (mm)	Resistance (MΩ)	Time Constant (μ sec)	D*BB (500K, 1KHz, 1)	D* (CM•Hz½•W–1)	Responsivity (PK, 1KHz, V/W)
1.1	1.0 x 1.0	0.2 – 5.0	2 ~ 5	$3X10^8$	$2X10^9$	7500

Mechanical Features

Detectors are typically manufactured on 0.020” - 0.030” quartz substrates. Devices can be supplied integrated with optical condenser elements, thermoelectric (TE) coolers, and processing electronics, all in a miniature package.



Aging Characteristics

All stock detectors undergo a minimum four week aging period. Experience with detectors manufactured by the proprietary process, including the above aging period, has shown the electrical characteristics to be stable to within 10% for over a year.

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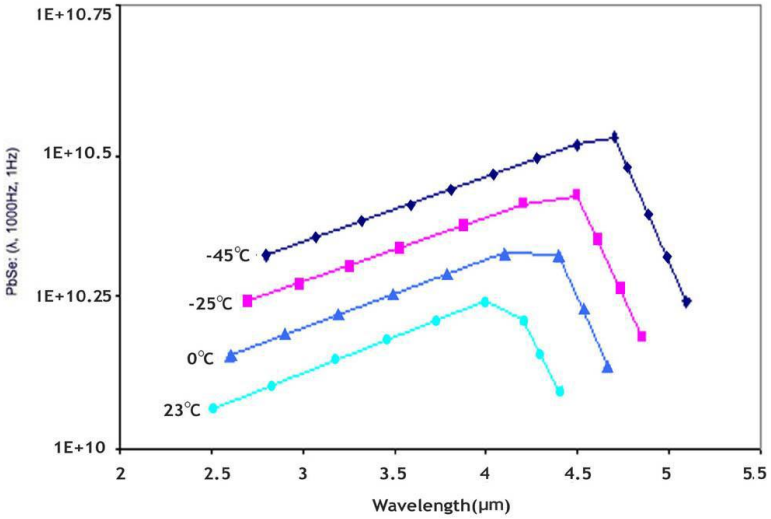
Response of PbSe Detectors

The typical room temperature response for PbSe operates in the 2 to 5 micron spectral region with time constant below 2μsec. TE-cooled packages are available with a response in the 1 to 5 micron region with increased D*. Typical spectral response of standard PbSe detector is show below:



Ordering Information : PBAD-A-B-C-D-E-F-G

AMBIENT DETECTOR

PBAD-	A	B	C	D	E	F	G
	Material Type	Type	Package	Element Size	Window	AR Coated	Temperature Sensor
Ambient Detector	1=Lead Selenide (PbSe) 3=High Performance Lead Selenide (HP-PbSe)	00=Flat Plate 01=Packaged IP=Integrated preamp.	0=special 1=TO-18 5=TO-5 7=TO-37 8=TO-8 9=TO-39	0=Special 1=1x1mm 2=2x2mm 3=3x3mm 4=4x4mm 5=5x5mm 6=6x6mm	0=Special 1=Spectral Filter 2=Quartz 3=Sapphire 4=Germanium 5=Silicon	0=No 1=Yes	00=No Themistor TH=Thermistor TC=Thermistor Calibrated

Ordering Information : PBCD-A-B-C-D-E-F-G

COOLED DETECTOR

PBCD	A	B	C	D	E	F	G
	Material Type	T.E. Cooled Type	Package	Element Size	Window	AR Coated	Temperature Sensor
T.E.Cooled Detector	1=Lead Selenide(PbSe) 3=High Performance Lead Selenide (HP-PbSe)	00=Special 01=1 stage 02=2 stage 03=3 stage IP=Integrated preamp.	0=special 5=TO-5 7=TO-37 8=TO-8 9=TO-39	0=Special 1=1x1mm 2=2x2mm 3=3x3mm 4=4x4mm 5=5x5mm 6=6x6mm	0=Special 1=Spectral Filter 2=Quartz 3=Sapphire 4=Germanium 5=Silicon	0=No 1=Yes	00=No Themistor TH=Thermistor TC=Thermistor Calibrated