SensArray

LEAD SELENIDE INFRARED DETECTORS
2.0 - 5.0 microns

SensArray 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 are typical room temperature electrical characteristics of SensArray Automated Chemical Processing (ACP) PbSe detectors.

PbSe Type	Electrode Size (mm)	Resistance (MΩ)	Time Constant (μ sec)	(500K, 1KHz, 1)	D* (λ, 1KHz, 1)	Responsivity (I, 1KHz, V/W)
1.1	1.0 x 1.0	0.2 - 5.0	<2	3×10^8	2×10^9	7500
2.2	2.0 x 2.0	0.2 - 5.0	<2	3×10^8	2×10^9	5000
3.2	3.0 x 3.0	0.2 - 5.0	<2	3×10^8	2×10^9	2500

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.

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.

Infrared Sensing & Imaging

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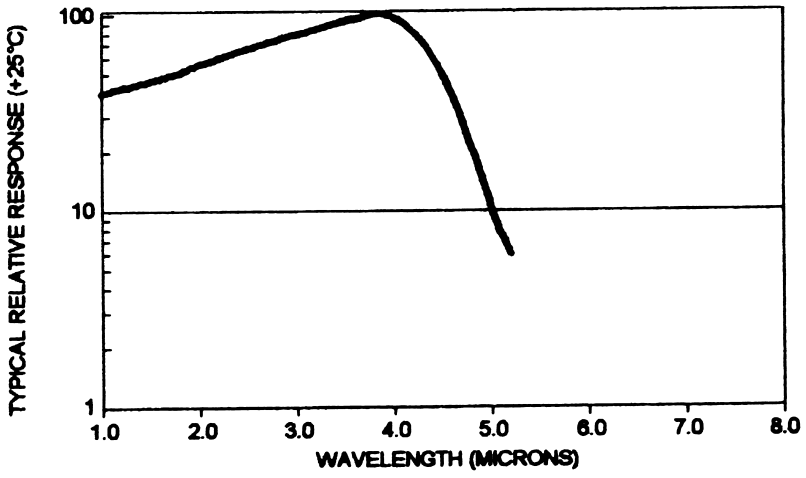
Aging Characteristics:

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

Response of PbSe Detectors:

The typical room temperature response for PbSe operates in the 1.0 to 4.5 micron spectral region with time constants below 2 µsec.

TE-cooled packages are available with a response in the 1.0 to 5.0 micron region with increased D*.



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