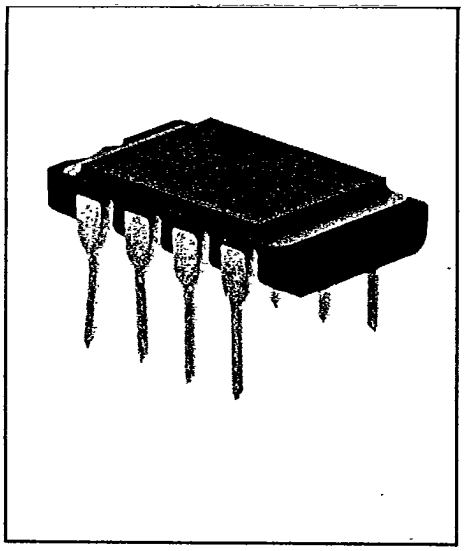


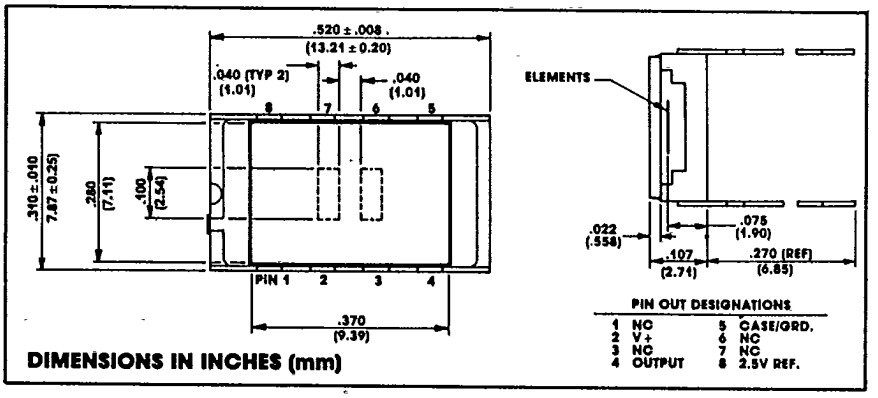
MODEL 452

PRELIMINARY DATA

IR-EYE™ INTEGRATED DIP SENSOR
Parallel Opposed Dual IR Detector With Integrated Signal Processing*

Eliminate Burn-In Tests
Improve RF Immunity
Eliminate False Alarms
Miniaturize Circuitry
Reduce Components
Reduce Repairs

The **Model 452 IR-EYE™** Integrated Sensor is a Lithium Tantalate pyroelectric parallel opposed dual element high gain detector with complete integral analog signal processing housed in a standardized DIP package. This unit offers greatly improved detection capability over an extended temperature range of -40 to +70°C with no significant change in noise or sensitivity.



Features

100 x Signal Amplification
100 x Voltage Regulation
2 x Detection Capability
Wide Operating Temperature

Applications

People/Object Detection
Intrusion Detection
Lighting Control
Robotics
Motion Sensing
Automatic Door Control
Safety Warning
High Stability Industrial & Military Applications

MODEL 452 Specifications

Operating Characteristics

D* (cm $Hz^{1/2}$/W, BW-1Hz)	3.7×10^8
NEP (W/$Hz^{1/2}$, BW-1Hz)	4.2×10^{-10}
Responsitivity (V/W)	4.3×10^5
Common Mode Rejection (Min.)	5/1
(Typ.)	15/1
Noise (mV/$Hz^{1/2}$)	0.2
Breakpoint:	
Thermal	0.15Hz
Electrical	5Hz
Power Supply	
Voltage	5-15 VDC
Current (Max.)	2.0 mA

Output Characteristics

Voltage (Max.)	V+
Current (Rec.)	0.02 mA
Output Load (min.)	15 Kohm
Reference Voltage**	
pin 3/4	+2.5 V
Offset Voltage	±30mV

Ambient Operating Conditions

Storage Temp.	-55 to +125° C
Operating Temp.	-40 to +70° C
Sensitivity to:	
Temperature	+.3%/°C

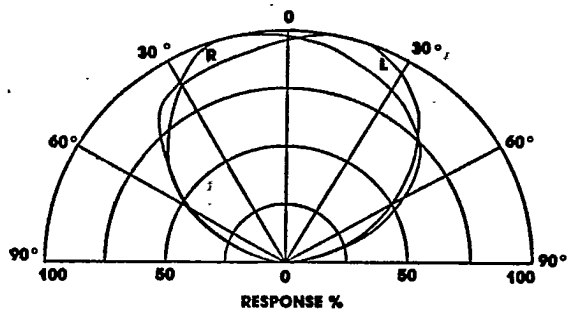
NOTE 1- Characteristics are at 25°C, 14.7 psia, V+ = 5VDC, f = 1Hz, Bandwidth of 8-14 micrometers.

NOTE 2- The information contained in this sheet has been obtained from development samples. Data is believed to be representative.

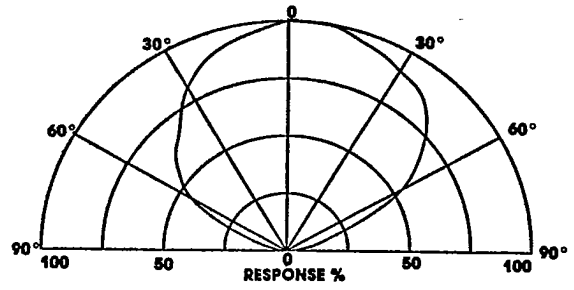
*Patent pending. Manufactured under one or more of the following U.S. patents: 3,839,640 - 4,218,620 - 4,326,663 - 4,384,207 - 4,437,003 - 4,441,023 - 4,523,095

**See reverse for additional information.

FEILD OF VIEW
Model 452 - Horizontal

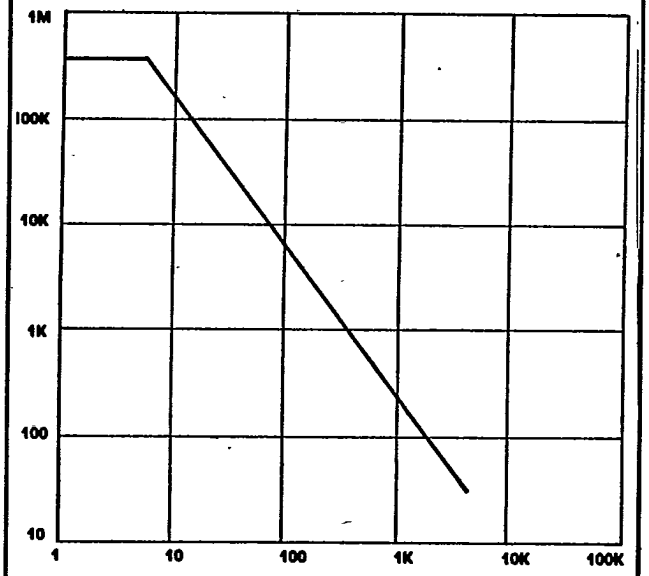


Model 452 - Vertical



For -3 window only. For other windows consider refraction index and thickness.

FREQUENCY RESPONSE
MODEL 452
(EACH ELEMENT)



Mounting, Soldering and Handling:

These Sensors have been improved over previous Models and can withstand normal handling and automatic assembly as well as wave soldering at 280°C for 10 seconds, at 1/4" (6.3mm) from the case bottom.

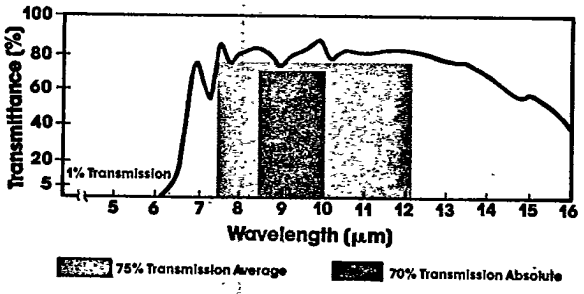
Contamination and fingerprints on the window surface should be cleaned with alcohol and a soft cloth.

Avoid mechanical stresses on case and leads.

Static Discharge

Additional safety features are used internally to make these sensors almost immune to electro-static discharge.

Transmission Characteristics of -3 Window (HP-7)



Reference Voltage

The internal biasing voltage is accessible on pin 3. This voltage is used to drive the internal output amplifier. Offset voltage is referred to this point.

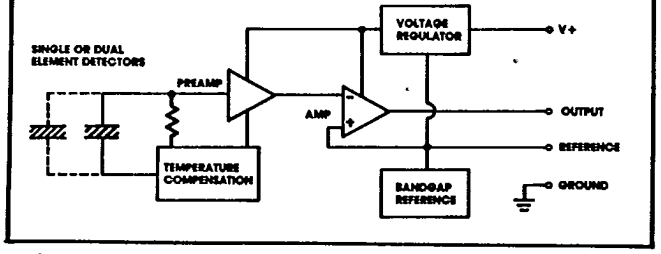
This reference provides a low drift zero to allow for direct DC coupling of a subsequent comparator or A/D converter.

The recommended maximum load on this pin is 20 uA (source only) to maintain electrical and thermal stability. Current loads greater than 20uA may adversely affect performance; however, the output is short circuit proof.

Light Leakage

Slight sensitivity to visible light leaking through the glass-to-metal seal on the base may be observed.

BLOCK DIAGRAM



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