



## M34

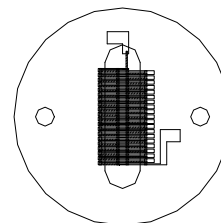
### Thin Film Based Thermopile Detector

**Features:** A thin-film thermopile in a TO-5 package with an active area of 3.16mm x 0.4mm that offers low noise output.

**Options:** See [Standard Windows and Filters](#) for list of optical filter options. See [Thermopile Configuration Table](#) for more options.

**Applications:** Non-contact temperature measurement for industrial and medical, including infant incubators.

**Benefit:** Centered rectangular active area and low noise with moderate output.



Detector circuit overlay

## Technical Specifications

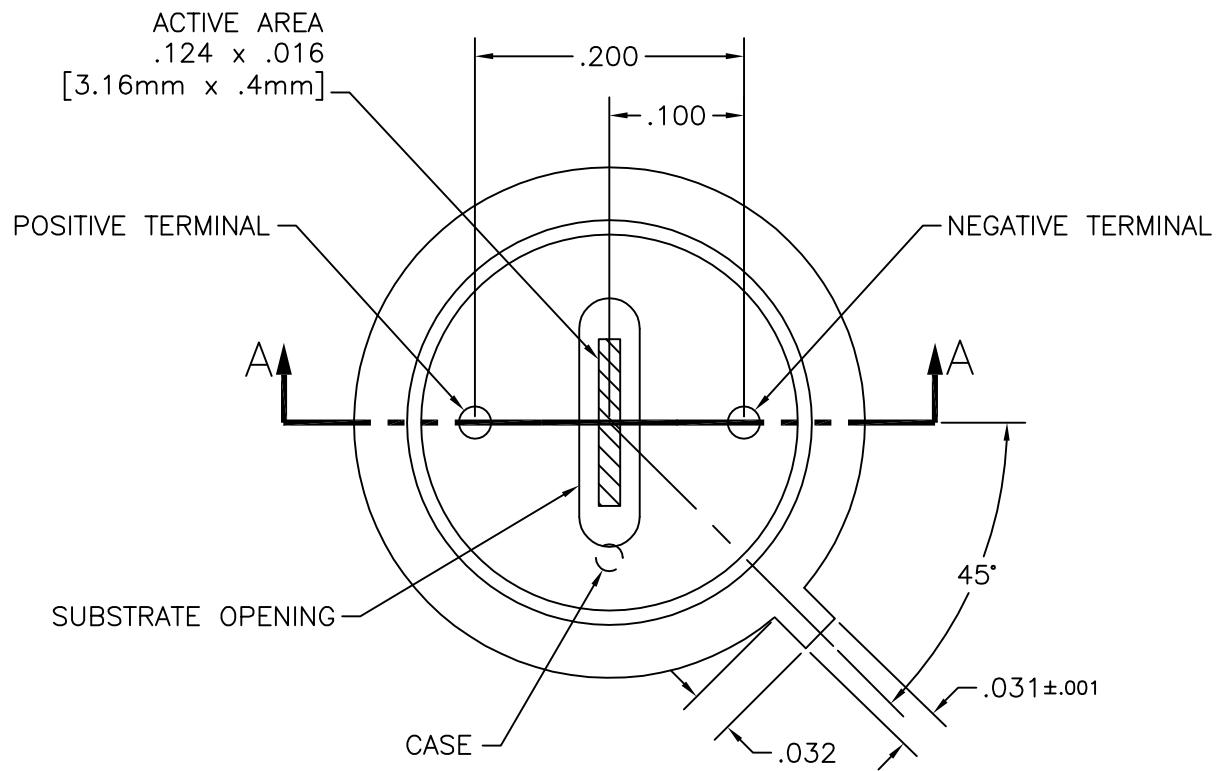
M34

Specifications apply at 23°C with KBr Window and Argon encapsulating gas

Parameter	Min	Typical	Max	Symbol	Units	Comments
Active Area size	3.16 x .4			AA	mm	Hot junction size, per element.
Element Area	1.264			A	mm <sup>2</sup>	
Number of Junctions	40					Per element.
Number of Channels	1					Per detector package.
Output Voltage	90	115	130	V <sub>s</sub>	μV	DC, H=330μW/cm <sup>2</sup> (3)
Signal-to-Noise Ratio	6,429	10,088	16,049	SNR	√Hz	DC, SNR=V <sub>s</sub> /V <sub>n</sub>
Responsivity	21.6	27.6	31.2	ℛ	V/W	DC, ℛ=V <sub>s</sub> /HA (2)
Resistance	4.0	8.0	12.0	R	kΩ	Detector element
Temperature Coefficient of ℛ		-.36			%/°C	Best linear fit, 0° to 85°C (1)
Temperature Coefficient of R		-.2			%/°C	Best fit, 0° to 85°C (1)
Noise Voltage	8.1	11.4	14.0	V <sub>n</sub>	nV/√Hz	V <sub>n</sub> <sup>2</sup> =4kTR
Noise Equivalent Power	.26	.42	.65	NEP	nW/√Hz	DC, NEP= V <sub>n</sub> HA/V <sub>s</sub> (2)
Detectivity	1.7	2.7	4.3	D*	10 <sup>8</sup> cm <sup>2</sup> √Hz/W	DC, D*=V <sub>s</sub> / V <sub>n</sub> H√A (2)
Time Constant		38		τ	ms	Chopped, -3dB point (1)
Field of View	NA			FOV	Degrees	Not Applicable
Package Type	TO-5 with 3 Pins					Standard package hole size: Ø.150"
Operating Temperature	-50		100	T <sub>a</sub>	°C	

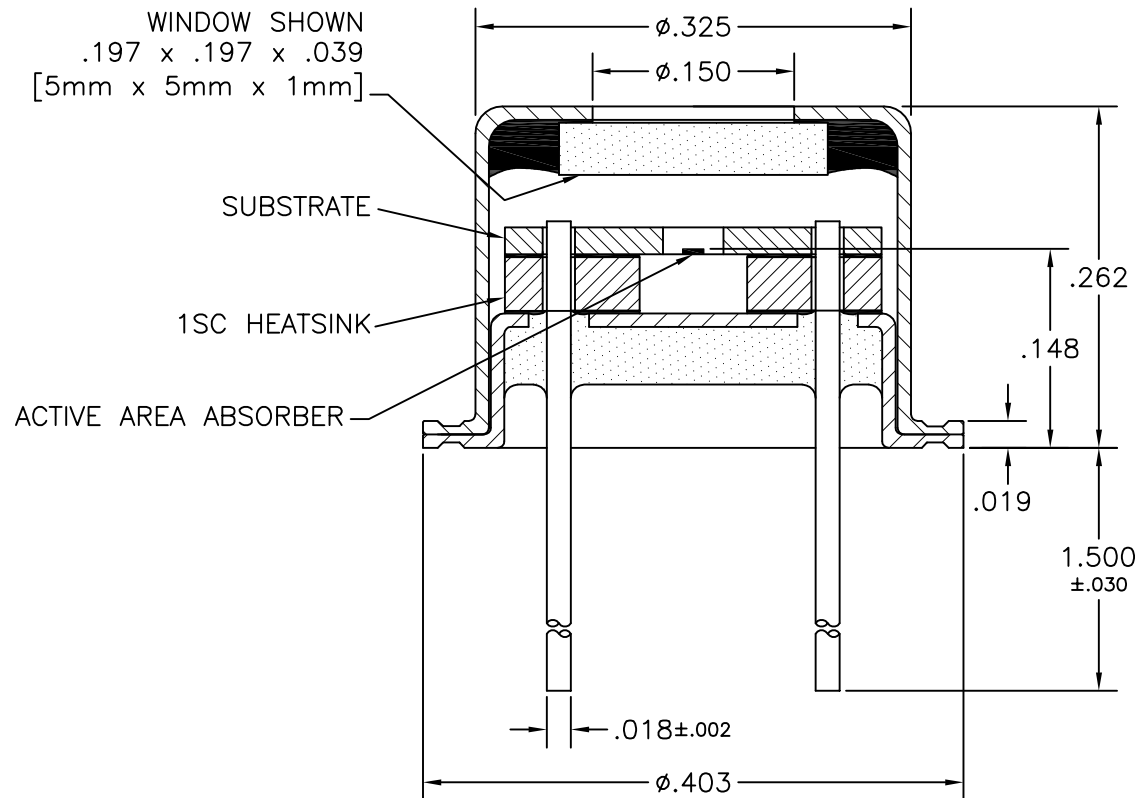
**General Specifications:** Flat spectral response from 100nm to > 100μm. Linear signal output from 10<sup>-6</sup> to 0.1W/cm<sup>2</sup>. Maximum incident radiance 0.1W/cm<sup>2</sup>, damage threshold ≥ .5W/cm<sup>2</sup>

**Notes:** (1) Parameter is not 100% tested. 90% of all units meet these specifications. (2) A is detector area in cm<sup>2</sup>. (3) Test Conditions: 500K Blackbody source; Detector active surface 10cm from 0.6513cm Diameter Blackbody Aperture.



TOP VIEW  
WITHOUT COVER

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		DEXTER RESEARCH CENTER, Inc. 7300 Huron River Dr., Dexter, MI 48130, ph. 734-426-3921 fax 734-426-5090			
FRACTIONS ±	DECIMALS .XX ± .01 .XXX ± .005	ANGLES ±	ASSEMBLY, M34		
APPROVALS		DATE		TOP VIEW	
DRAWN: DLJ		4/20/05		SIZE: <b>A</b>	
CHECKED:				SCALE: 7" = 1"	DWG. NO. 1175.1
ENGINEERED:				REV. NC	PAGE: 1 OF 2
APPROVED:				DRC PART NO.	MATERIAL: FINISH:



SECTION A—A

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:				DEXTER RESEARCH CENTER, Inc.			
FRACTIONS ±				7300 Huron River Dr., Dexter, MI 48130, ph. 734-426-3921 fax 734-426-5090			
DECIMALS .XX ± .01 .XXX ± .005				ASSEMBLY, M34			
ANGLES ±				CROSS SECTION			
APPROVALS		DATE		SIZE: SCALE: DWG. NO. REV. PAGE:			
DRAWN: DLJ		11/18/14		A 7" = 1" 1175.2 B 2 OF 2			
CHECKED:				DRC PART NO. MATERIAL: FINISH:			
ENGINEERED:							
APPROVED:							