



DR34

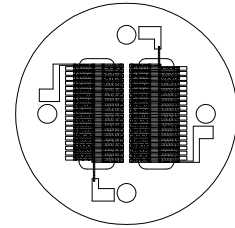
Thin Film Based Thermopile Detector

Features: A two-channel or a one-channel compensated thin-film thermopile in a TO-5 package. Each active area is 3.16mm x 0.4mm and offers low noise output. Internal aperture minimizes channel-to-channel crosstalk and thus increasing sensitivity.

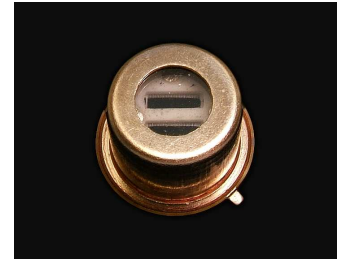
Options: See [Standard Windows and Filters](#) for list of optical filter options. See [Thermopile Configuration Table](#) for more options.

Applications: Gas analysis for automotive, environmental air quality including greenhouses, industrial and medical monitoring including infant incubators.

Benefit: Low noise and dual channel in a TO-5 package with moderate output.



Detector circuit overlay



DR34

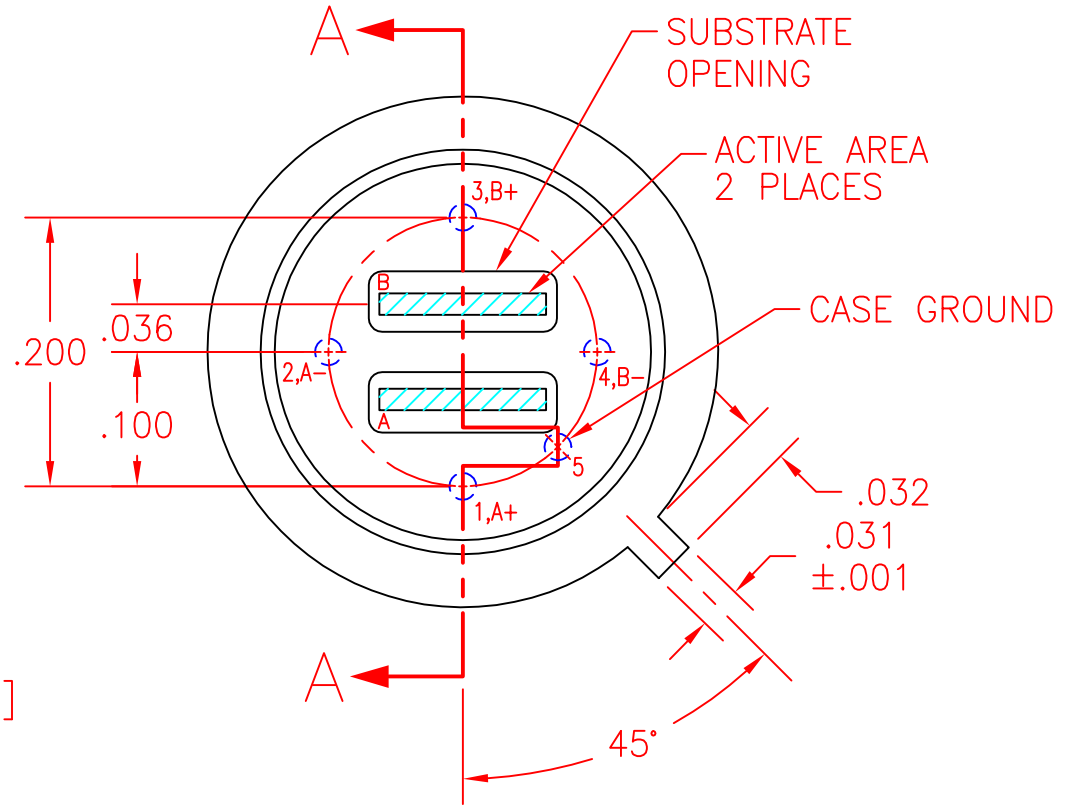
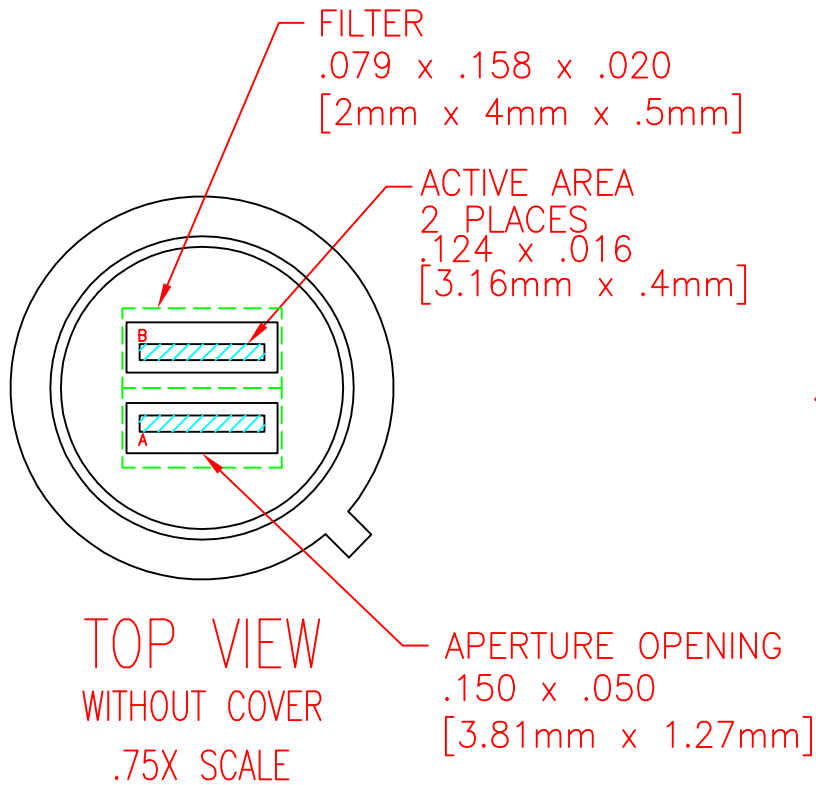
Technical Specifications

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 ²	
Number of Junctions		40				Per element.
Number of Channels		2				Per detector package.
Output Voltage	90	115	130	V _s	μV	DC, H=330μW/cm ² (3)
Signal-to-Noise Ratio	6,429	10,088	16,049	SNR	√Hz	DC, SNR=V _s /V _n
Responsivity	21.6	27.6	31.2	ℛ	V/W	DC, ℛ=V _s /HA (2)
Resistance	4.0	8.0	12	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 _n	nV/√Hz	V _n ² =4kTR
Noise Equivalent Power	.26	.42	.65	NEP	nW/√Hz	DC, NEP= V _n HA/V _s (2)
Detectivity	1.7	2.7	4.3	D*	10 ⁸ cm√Hz/W	DC, D* = V _s / V _n 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 5 Pins				Standard package hole size: Ø.180"
Element Matching		5	10	ℳ	%	ℳ = V _A -V _B /V _B (2)
Element Separation		1.8			mm	Center to Center
Operating Temperature	-50		100	T _a	°C	

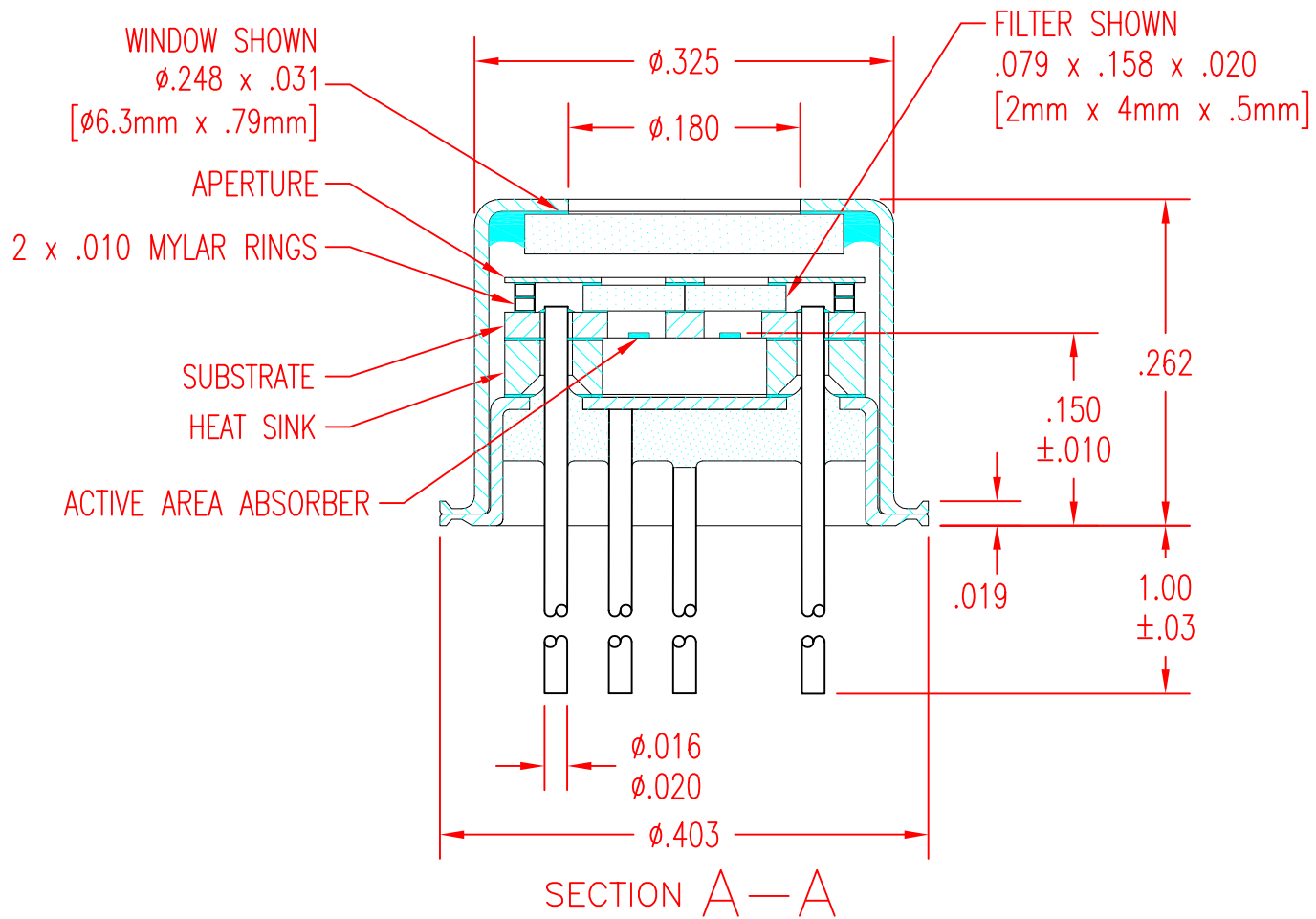
General Specifications: Flat spectral response from 100nm to > 100μm. Linear signal output from 10⁻⁶ to 0.1W/cm². Maximum incident radiance 0.1W/cm², damage threshold ≥ .5W/cm²

Notes: (1) Parameter is not 100% tested. 90% of all units meet these specifications. (2) A is detector area in cm². (3) Test Conditions: 500K Blackbody source; Detector active surface 10cm from 0.6513cm Diameter Blackbody Aperture.



PIN	ELEMENT	DESCRIPTION	P/N
1	A+		
2	A-		
3	B+		
4	B-		
5	CASE GROUND		

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES.			DEXTER RESEARCH CENTER, Inc.			
TOLERANCES ARE:			7300 Huron River Dr., Dexter, MI 48130, ph. 734-426-3921 fax 734-426-5090			
FRACTIONS ±	DECIMALS .XX ± .XXX ± .005	ANGLES ±	ASSEMBLY, DR34			
APPROVALS	DATE	TOP VIEW				
DRAWN: DLJ	8/03/06	SIZE: A	SCALE: 7" = 1"	DWG. NO. 1037.1	REV. E	PAGE: 1 OF 2
CHECKED:		DRC PART NO.		MATERIAL:	FINISH:	
ENGINEERED:						
APPROVED:						



UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES.			DEXTER RESEARCH CENTER, Inc.			
TOLERANCES ARE:			7300 Huron River Dr., Dexter, MI 48130, ph. 734-426-3921 fax 734-426-5090			
FRACTIONS ±	DECIMALS .XX ± .01 .XXX ± .005	ANGLES ±	ASSEMBLY, DR34, W/ H.S., CROSS SECTION			
APPROVALS	DATE	SIZE:	SCALE:	DWG. NO.	REV.	PAGE:
DRAWN: DLJ	12/15/10	A	7" = 1"	1037.2	D	2 OF 2
CHECKED:		DRC PART NO.		MATERIAL:	FINISH:	
ENGINEERED:						
APPROVED:						