



DR46 Compensated

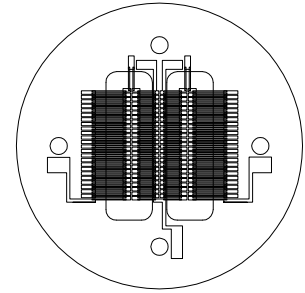
Thin Film Based Thermopile Detector

Features: A one-channel compensated thin-film thermopile in a TO-8 package. The active area and compensating element area are 4mm x 0.6mm each. Offers high output with very good signal-to-noise ratio. Internal aperture minimizes channel-to-channel crosstalk increasing sensitivity.

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

Applications: Non-contact temperature measurement, fire detection / suppression.

Benefit: High output, low noise compensated rectangular shaped active area in a TO-8 package.



Detector circuit overlay



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Technical Specifications

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

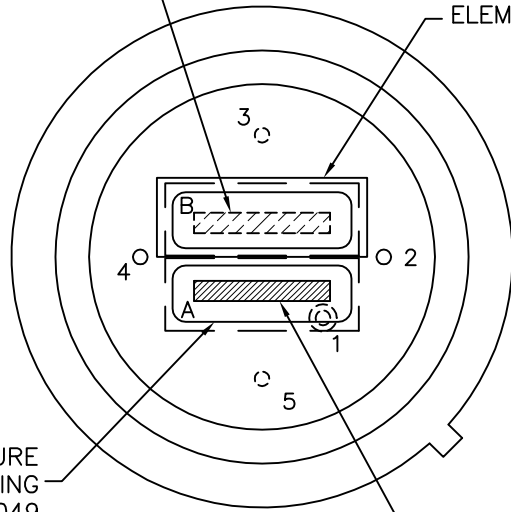
Parameter	Min	Typical	Max	Symbol	Units	Comments
Active Area size	4 x .6			AA	mm	Hot junction size, per element.
Element Area	2.4			A	mm ²	
Number of Junctions	50					Per element.
Number of Channels	1 Compensated					Per detector package.
Output Voltage	170	210	250	V _s	μV	DC, H=330μW/cm ² (3)
Signal-to-Noise Ratio	7,692	11,602	16,556	SNR	√Hz	DC, SNR=V _s /V _n
Responsivity	21.5	26.5	31.6	ℜ	V/W	DC, ℜ=V _s /HA (2)
Resistance	14	20	30	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	15.1	18.1	22.1	V _n	nV/√Hz	V _n ² =4kTR
Noise Equivalent Power	.48	.68	1.03	NEP	nW/√Hz	DC, NEP= V _n HA/V _s (2)
Detectivity	1.5	2.3	3.2	D*	10 ⁸ cm√Hz/W	DC, D*=V _s /V _n H√A (2)
Time Constant	40			τ	ms	Chopped, -3dB point (1)
Field of View	NA			FOV	Degrees	Not Applicable
Package Type	TO-8 with 3 Pins					Standard package hole size: Ø.437"
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.

BLIND COMPENSATING
ACTIVE AREA

ELEMENT BLOCKER



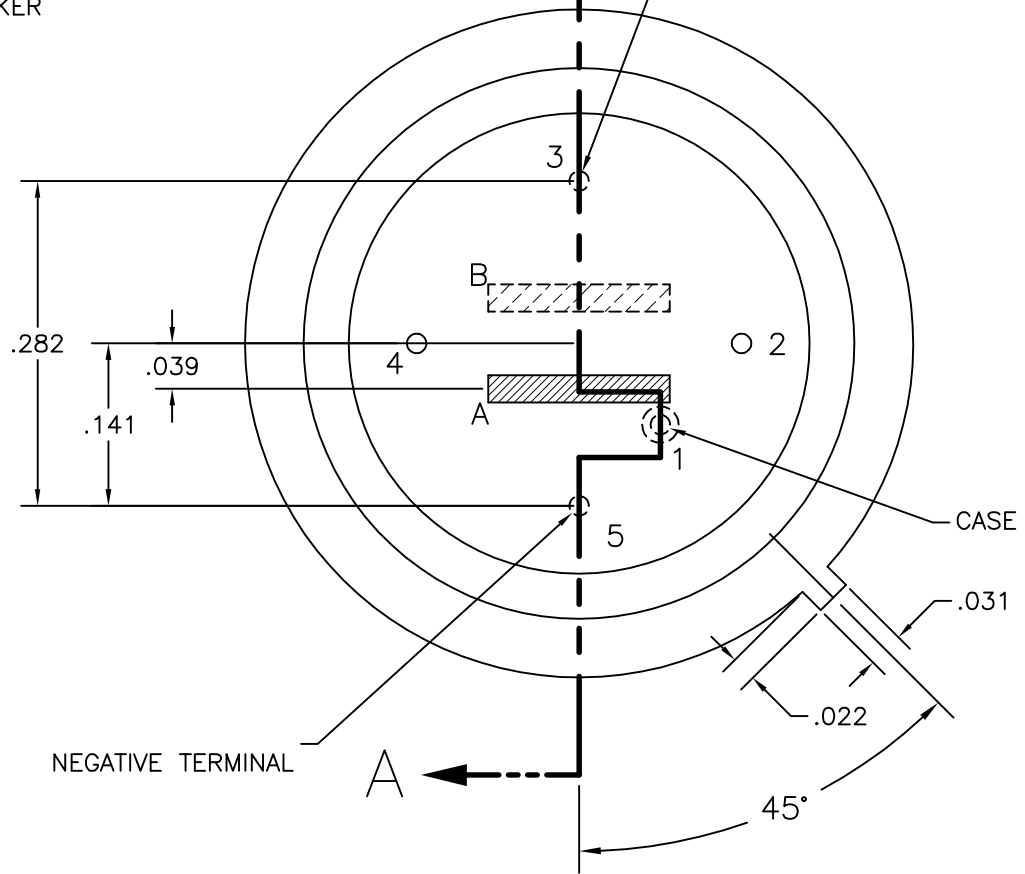
APERTURE
OPENING
.155 x .049

ACTIVE AREA
.024 x .158
(.6mm x 4mm)

TOP VIEW
WITHOUT COVER
.75X SCALE

A

POSITIVE TERMINAL



NEGATIVE TERMINAL

TOP VIEW
W/OUT COVER OR
OPTIONAL APERTURE OR FILTER

PIN	ELEMENT	DESCRIPTION	P/N
5	A		
3	B		
1	CASE GROUND		
2,4	NO CONNECTION		

NOTE: APERTURE SUPPORTED BY PINS 2,4

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS
ARE IN INCHES.

TOLERANCES ARE:

FRACTIONS	DECIMALS	ANGLES
±	.XX ±	±
	.XXX ± .005	

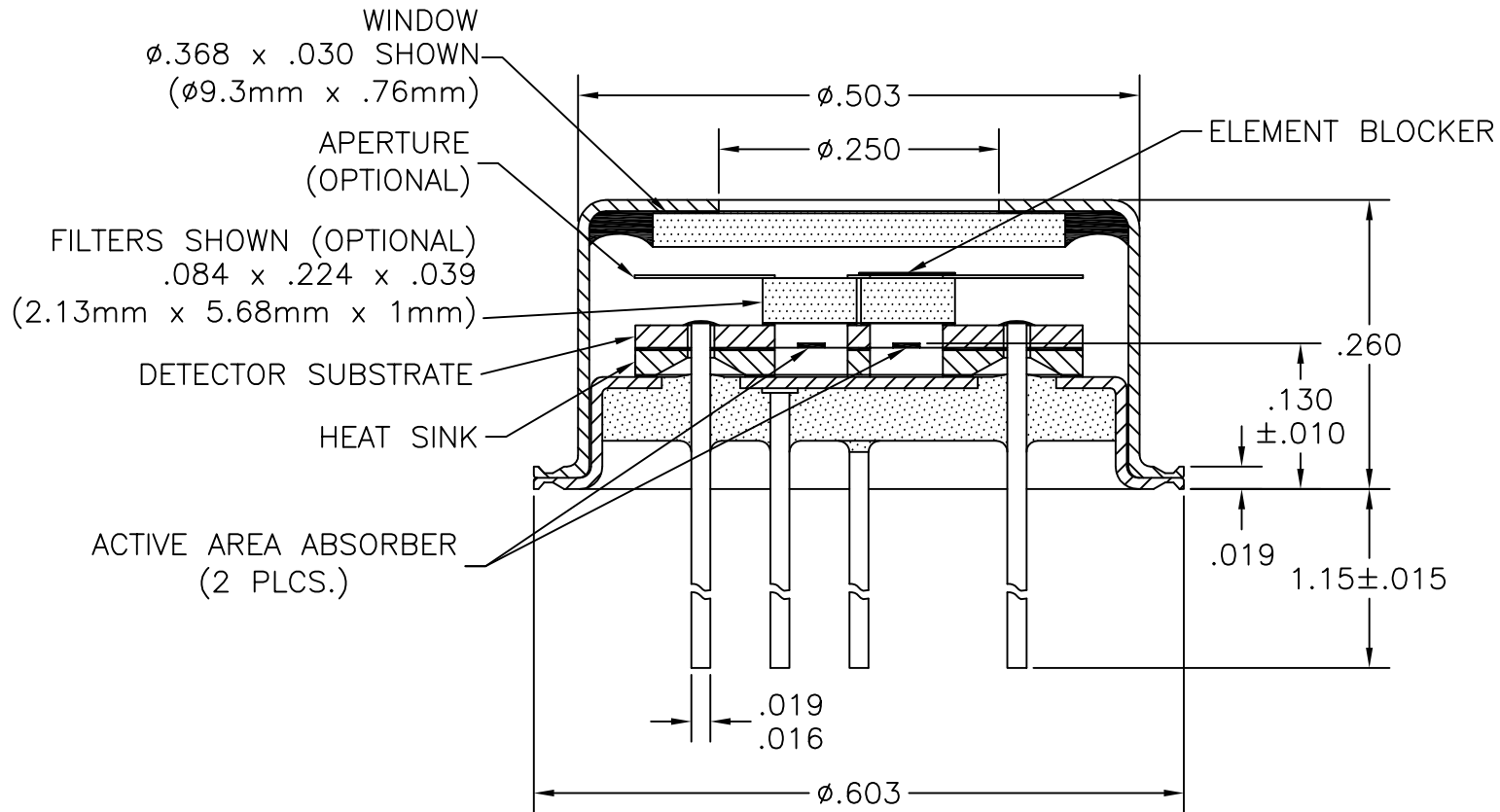
APPROVALS	DATE
DRAWN: DLJ	4/10/07
CHECKED:	
ENGINEERED:	
APPROVED:	

DEXTER RESEARCH CENTER, Inc.

7300 Huron River Dr., Dexter, MI 48130, ph. 734-426-3921 fax 734-426-5090

ASSEMBLY, DR46 COMPENSATED
TOP VIEW

SIZE:	SCALE:	DWG. NO.	REV.	PAGE:
A	6" = 1"	1182.1	A	1 OF 2
DRC PART NO.		MATERIAL:	FINISH:	



SECTION A-A

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 ± .XXX ± .005	ANGLES ±	ASSEMBLY, DR46 COMPENSATED w/ INTERNAL FILTER, CROSS SEC.					
APPROVALS		DATE		SIZE:	SCALE:	DWG. NO.	REV.	PAGE:
DRAWN: DLJ		12/28/10		A	6" = 1"	1182.2	B	2 OF 2
CHECKED:				DRC PART NO.		MATERIAL:		FINISH:
ENGINEERED:								
APPROVED:								