



DR26

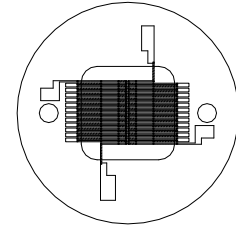
Thin Film Based Thermopile Detector

Features: A two-channel thin-film thermopile that offers low noise in a TO-5 package. Each small active area is 2mm x 0.6mm. This is our lowest noise-voltage two-channel detector.

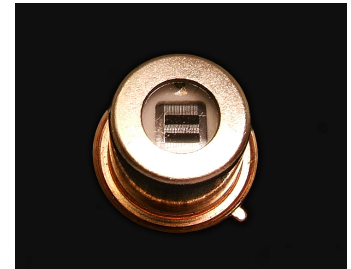
Options: See [Standard Windows and Filters](#) for list of optical filter options. See [Thermopile Configuration Table](#) for more options.

Applications: Security, intrusion detection and human presence monitoring, including identifying direction of travel. Other potential applications include non-contact temperature measurement.

Benefits: Two-channel output and low noise with small active area size and no internal aperture.



Detector circuit overlay



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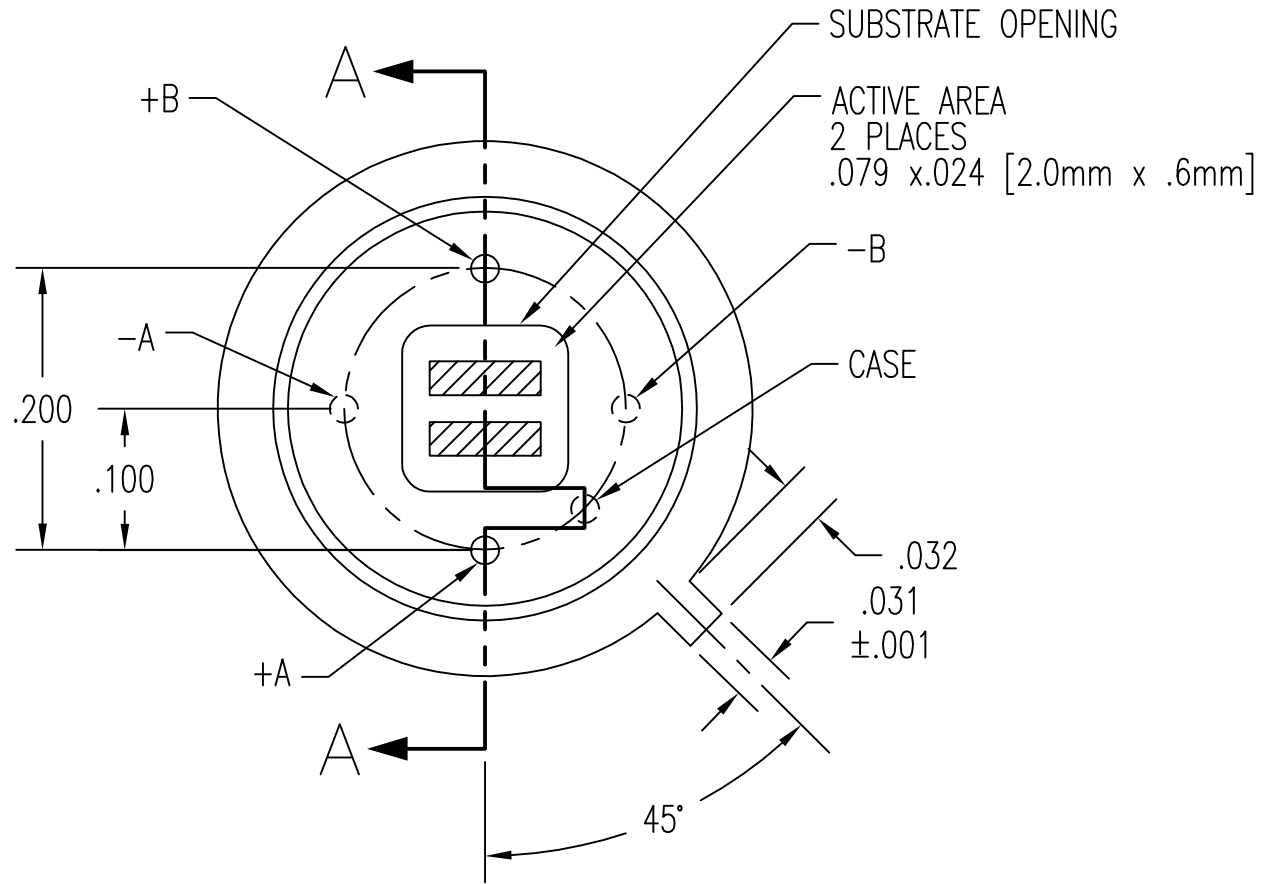
Technical Specifications

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

Parameter	Min	Typical	Max	Symbol	Units	Comments
Active Area size	2 x .6			AA	mm	Hot junction size, per element.
Element Area	1.2			A	mm ²	
Number of Junctions	26					Per element.
Number of Channels	2					Per detector package.
Output Voltage	45	54	62	V _s	μV	DC, H=330μW/cm ² (3)
Signal-to-Noise Ratio	4,206	5,684	7,209	SNR	√Hz	DC, SNR=V _s /V _n
Responsivity	11.4	13.6	15.7	ℳ	V/W	DC, ℳ=V _s /HA (2)
Resistance	4.0	5.5	7.0	R	kΩ	Detector element
Temperature Coefficient of ℳ		-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	8.6	9.5	10.7	V _n	nV/√Hz	V _n ² =4kTR
Noise Equivalent Power	.55	.71	.94	NEP	nW/√Hz	DC, NEP= V _n HA/V _s (2)
Detectivity	1.2	1.6	2.0	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					Standard package hole size: ∅.150"
Element Matching		5	10	ℳ	%	ℳ = V _A -V _B /V _B (2)
Element Separation		1.10			mm	Center to Center
Operating Temperature	-50		100	T _a	°C	

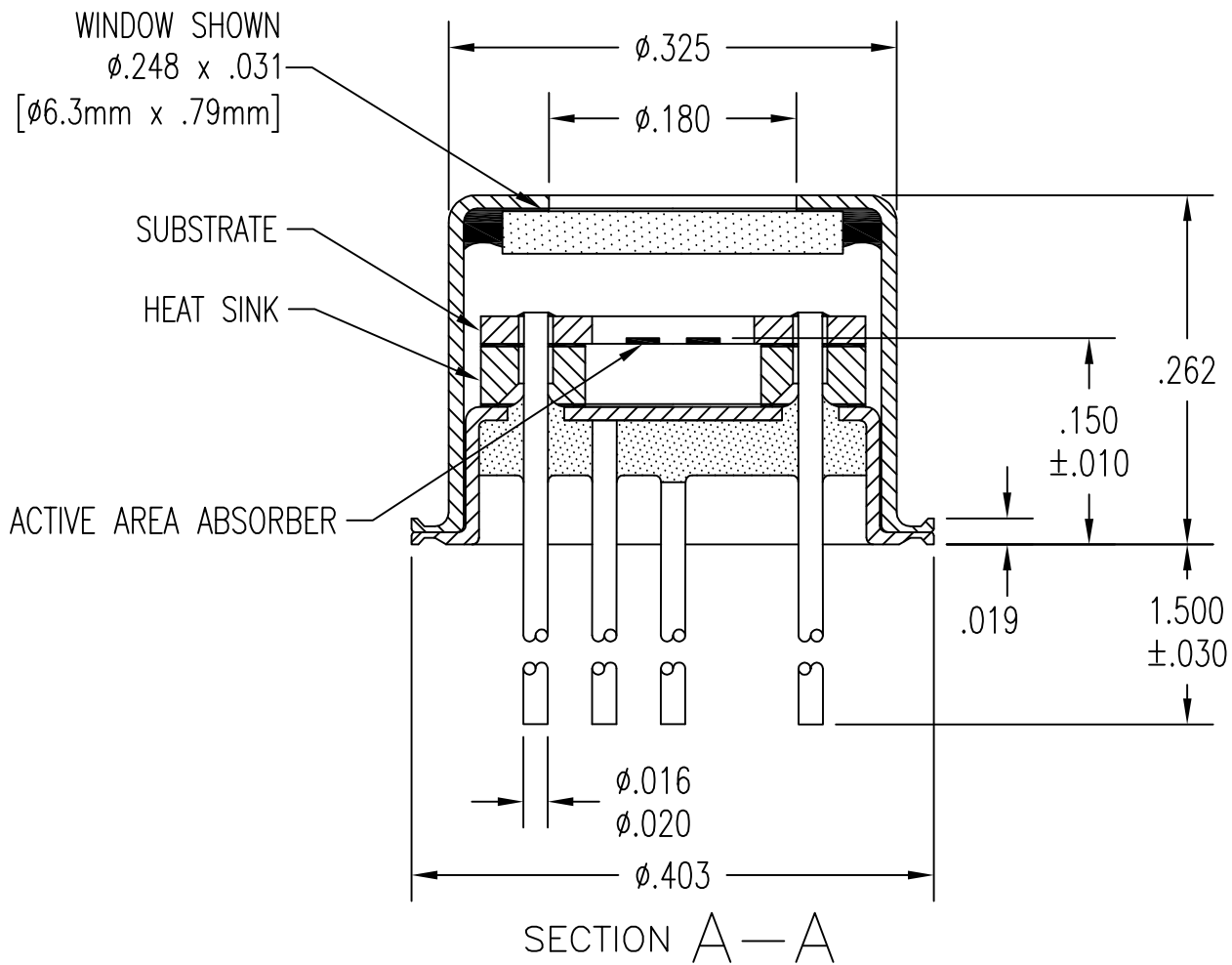
General Specifications: Flat spectral response from 100nm to > 100μm. Linear signal output from 10⁻⁶ to 0.1W/cm². Maximum incident radiance 0.1W/cm², damage threshold ≥ .5W/cm²

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.



TOP VIEW
 WITHOUT COVER,
 APERTURE, OR FILTERS

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES.		DEXTER RESEARCH CENTER, Inc. 7300 Huron River Dr., Dexter, MI 48130, ph. 734-426-3921 fax 734-426-5090			
TOLERANCES ARE:					
FRACTIONS ±	DECIMALS .XX ± .XXX ± .005	ANGLES ±	ASSEMBLY, DR26		
APPROVALS		DATE	TOP VIEW		
DRAWN:	DLJ	1/24/02	SIZE: A	SCALE: 7" = 1"	DWG. NO. 1047.1
CHECKED:			REV. A	PAGE: 1 OF 2	
ENGINEERED:			DRC PART NO.		MATERIAL:
APPROVED:			FINISH:		



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TOLERANCES ARE:

FRACTIONS	DECIMALS	ANGLES
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ENGINEERED:	
APPROVED:	

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ASSEMBLY, DR26

w/ HEAT SINK, CROSS SECTION

SIZE:	SCALE:	DWG. NO.	REV.	PAGE:
A	7" = 1"	1047.2	A	2 OF 2

DRC PART NO.	MATERIAL:	FINISH: