



## 6M

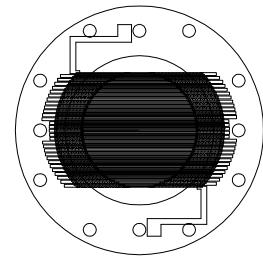
### Thin Film Based Thermopile Detector

**Features:** A thin film-based single element thermopile with the largest active area in our line up at 6.0mm diameter in a TO-8 package

**Options:** 1) See [Standard Windows and Filters](#) for list of optical filter options. 2) Internal 30kΩ 5% NTC chip thermistor provides ambient package temperature measurement. See [Thermistor Options](#) p/n: DC-4005. See [Thermopile Configuration Table](#) for options.

**Applications:** Very large active area and high output makes it an excellent choice for laser power measurements.

**Benefit:** Large active area and high output that is higher in cost and in a large package size.



Detector circuit overlay



### Technical Specifications

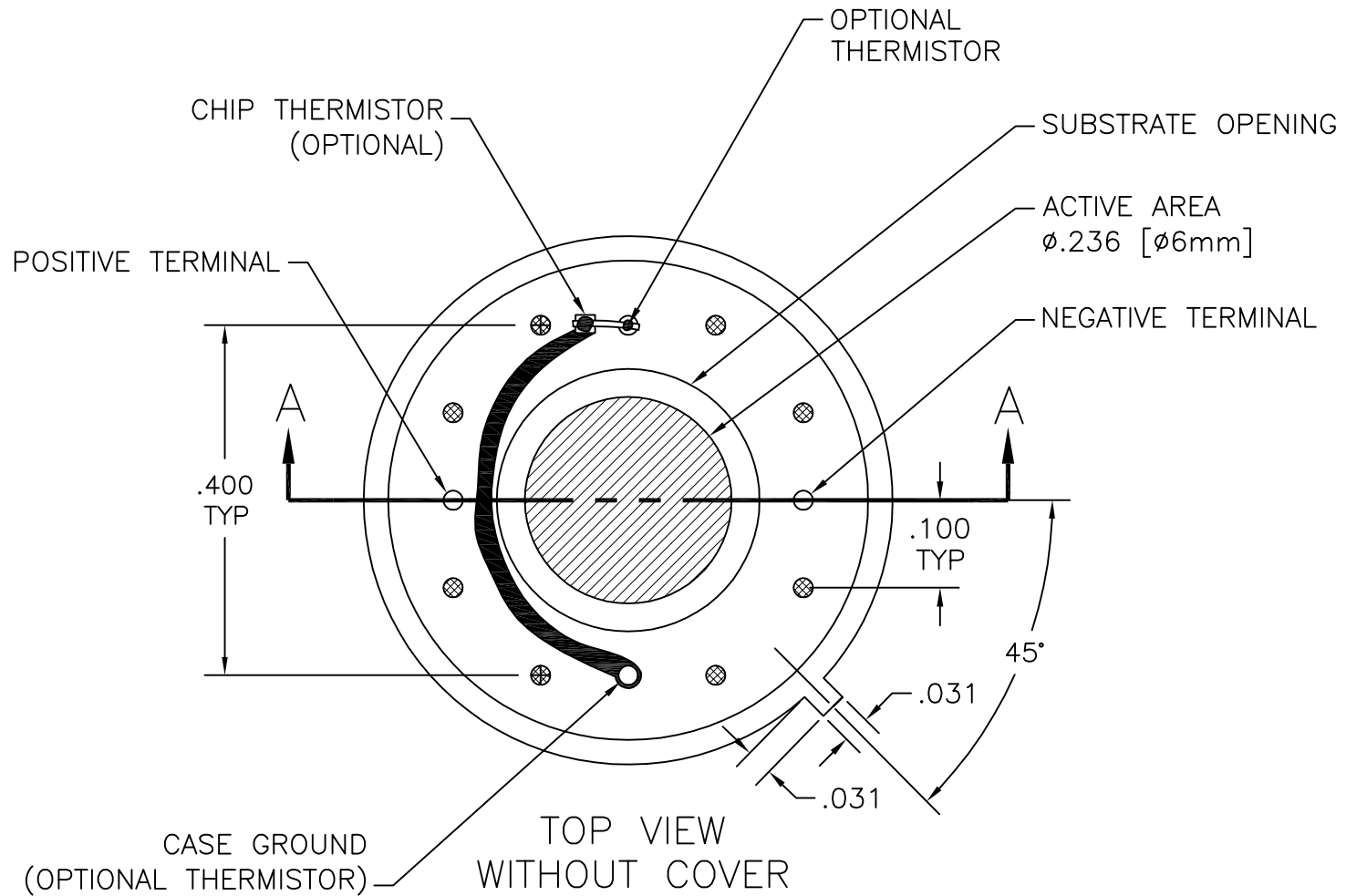
Specifications apply at 23°C with KBr Window and Argon encapsulating gas

6M

Parameter	Min	Typical	Max	Symbol	Units	Comments
Active Area size	Ø6mm Dia			AA	mm	Hot junction size, per element.
Element Area	28.3			A	mm <sup>2</sup>	
Number of Junctions	59					Per element.
Number of Channels	1					Per detector package.
Output Voltage		440		V <sub>s</sub>	μV	DC, H=330μW/cm <sup>2</sup> (3)
Signal-to-Noise Ratio	12,552	18,317	28,662	SNR	√Hz	DC, SNR=V <sub>s</sub> /V <sub>n</sub>
Responsivity	3.2	4.0	4.8	ℜ	V/W	DC, ℜ=V <sub>s</sub> /HA (2)
Resistance	15	25	35	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	15.7	20.2	23.9	V <sub>n</sub>	nV/√Hz	V <sub>n</sub> <sup>2</sup> =4kTR
Noise Equivalent Power	3.25	5.10	7.45	NEP	nW/√Hz	DC, NEP= V <sub>n</sub> HA/V <sub>s</sub> (2)
Detectivity	.7	1.0	1.6	D*	10 <sup>8</sup> cm√Hz/W	DC, D*=V <sub>s</sub> /V <sub>n</sub> H√A (2)
Time Constant		108		τ	ms	Chopped, -3dB point (1)
Field of View	75°/137°			FOV	Degrees	See Assembly Drawings for FOV Description.
Package Type	TO-8					Standard package hole size: Ø.437"
Operating Temperature	-50		100	T <sub>a</sub>	°C	

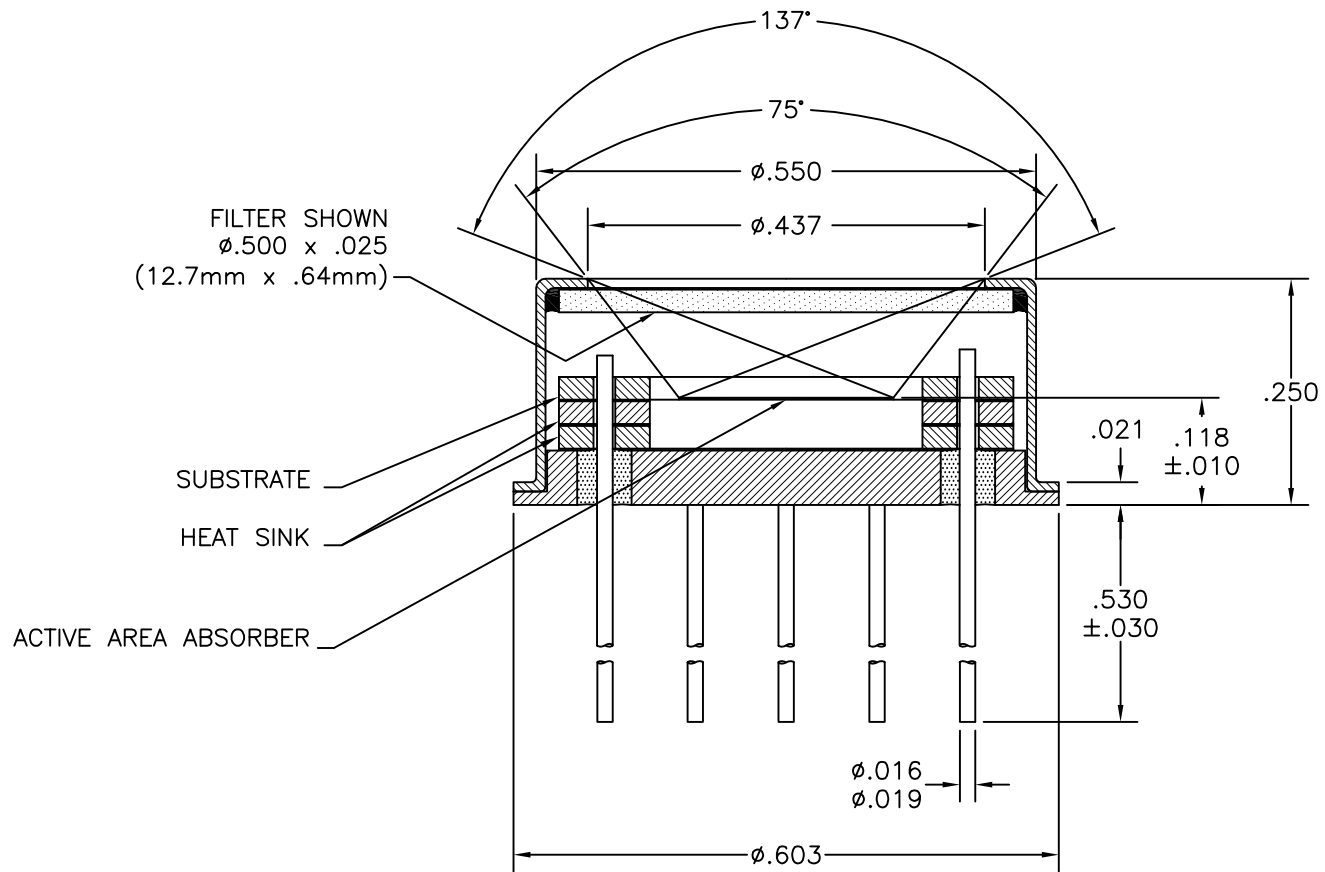
**General Specifications:** Flat spectral response from 100nm to > 100μm. Linear signal output from 10<sup>-6</sup> to 0.1W/cm<sup>2</sup>. Maximum incident radiance 0.1W/cm<sup>2</sup>, damage threshold ≥ .5W/cm<sup>2</sup>

**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.



NOTE: ALL SHADED PINS - NO CONNECTION

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, 6M TO-8		
APPROVALS		DATE	TOP VIEW		
DRAWN:	DLJ	6/15/06	SIZE: A	SCALE: 5" = 1"	DWG. NO. 1217.1
CHECKED:			REV. NC	PAGE: 1 OF 2	
ENGINEERED:			DRC PART NO.		MATERIAL:
APPROVED:					FINISH:



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 TOLERANCES ARE:

FRACTIONS	DECIMALS	ANGLES
$\pm$	.XX $\pm$ .01	$\pm$
	.XXX $\pm$ .005	

APPROVALS	DATE
DRAWN: DLJ	12/16/10
CHECKED:	
ENGINEERED:	
APPROVED:	

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ASSEMBLY, 6M TO-8  
 CROSS SECTION

SIZE:	SCALE:	DWG. NO.	REV.	PAGE:
A	5" = 1"	1217.2	A	2 OF 2
DRC PART NO.		MATERIAL:	FINISH:	