



DETECTOR SPECIFICATIONS DATA SHEET

January 9, 2001

MODEL: 407M58-43

DETECTOR TYPE: POD THERMALLY COMPENSATED

ELEMENT SIZE: 0.97 mm x 2.49 mm

ELEMENT MATERIAL: Lithium Tantalate

OPTICAL BANDWIDTH OF FILTER: HBW - 4.25 μ m to 4.35 μ m

RESPONSIVITY (TYP.): 1,374 V/W

NOISE (TYP.): 2.38 micro Volts (rms)

NEP (TYP.): 1.73×10^{-8} W/ $\sqrt{\text{Hz}}$

D STAR (TYP.): 9.08×10^7 cm $\sqrt{\text{Hz}}$ /W

CHARACTERISTICS AT: 4.25 μ m to 4.35 μ m, 500°K, 1 Hz, 1 Hz BW, $R_I = 25^\circ\text{C}$, $R_s = 100,000\Omega$, $V = 8$ V DC.
Blackbody aperture = 2.22 cm, distance = 10 cm

OPERATING VOLTAGE (MIN. & MAX.): 3 to 15 V DC

OFFSET VOLTAGE (MIN. & MAX.): 0.30 to 1.20 V DC

CURRENT DRAW (MIN. & MAX.): 3.0 to 12.0 μ A

THERMAL BREAKPOINT (TYP.): 0.2 Hz

ELECTRICAL BREAKPOINT (TYP.): 0.1 Hz

$R_I = 6.5 \times 10^{10}\Omega$

RECOMMENDED OPERATING TEMPERATURE: -10 to +50°C

STORAGE TEMPERATURE: -55 to +125°C

Functional

Delta T < 50 C°/minute

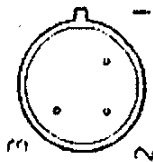
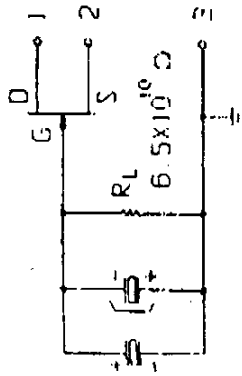
OUTPUT POLARITY: Positive for a positive change

OUTPUT IMPEDANCE: $\leq R_s$

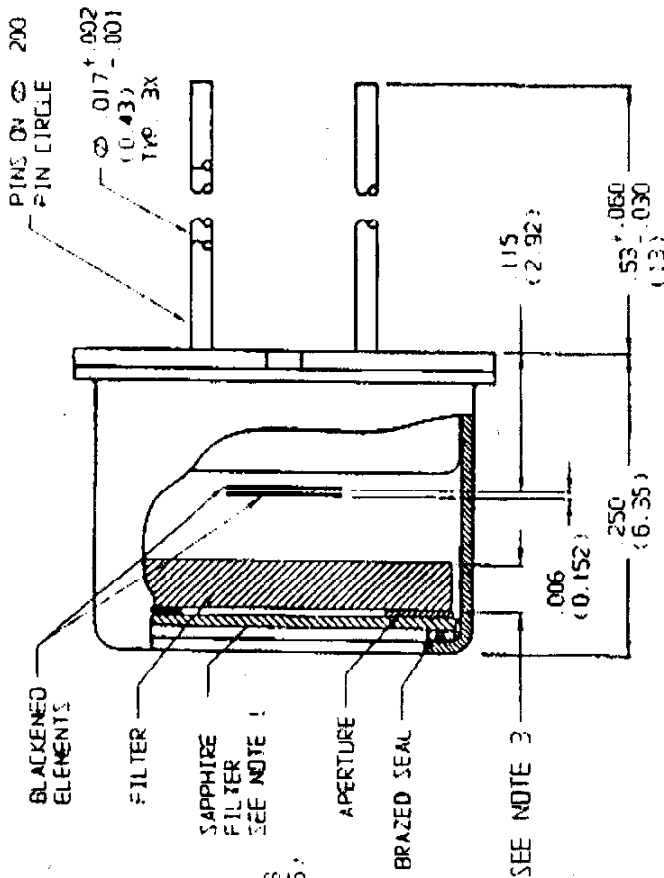
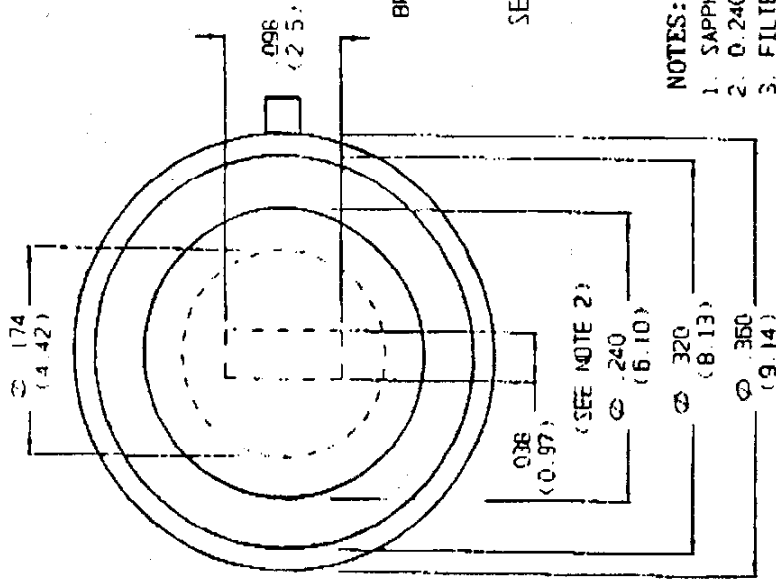
OUTPUT PROTECTION: Do not exceed a maximum drain current of 40 μ A.

THERMAL SHOCK: The rate of temperature change must be kept to a minimum (<50C°/minute) to prevent damage to internal electronics.

(Data is established on a sample basis and is believed to be representative.)



BOTTOM VIEW
(NO SCALE)



NOTES:

1. SAPPHIRE FILTER AND CAN HAVE BRAZED SEAL
2. 0.240 DIA MIN. CLEAR APERTURE
3. FILTER THICKNESS DEPENDENT ON TYPE. THIS MODEL ACCOMMODATES FILTERS .010 MIN TO .077 MAX THICK.
4. OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.
5. IF MODEL IS ORDERED WITHOUT THE FILTER, APERTURE WILL BE ELIMINATED.

PIN	DESIGNATION
1	V +
2	OUTPUT
3	CASE/GROUND

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REV	ECN	DATE	DESCRIPTION	BY	CHK
A	1577	3-27-03	ADD NOTE #5	BLN	68

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FINISH		SIZE	DWG. NO.
DRIVEN BY	RO	A	7800807
CHECKED BY	OP		
APPROVED BY	LC		

UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES (MM)	
TOLERANCES	
DECIMAL	FRACTIONAL
XX = $\pm .010$	$\pm 1/64$
XXX = $\pm .005$	ANGULAR
	$\pm 1^\circ$
BREAK SHARP CORNERS	