

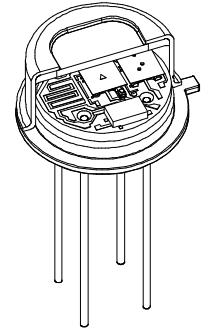
# LME-337-#

2.0 x 2.0 mm<sup>2</sup> fast pyroelectric IR detector  
CMOS preamplifier - ultra low microphonic effect

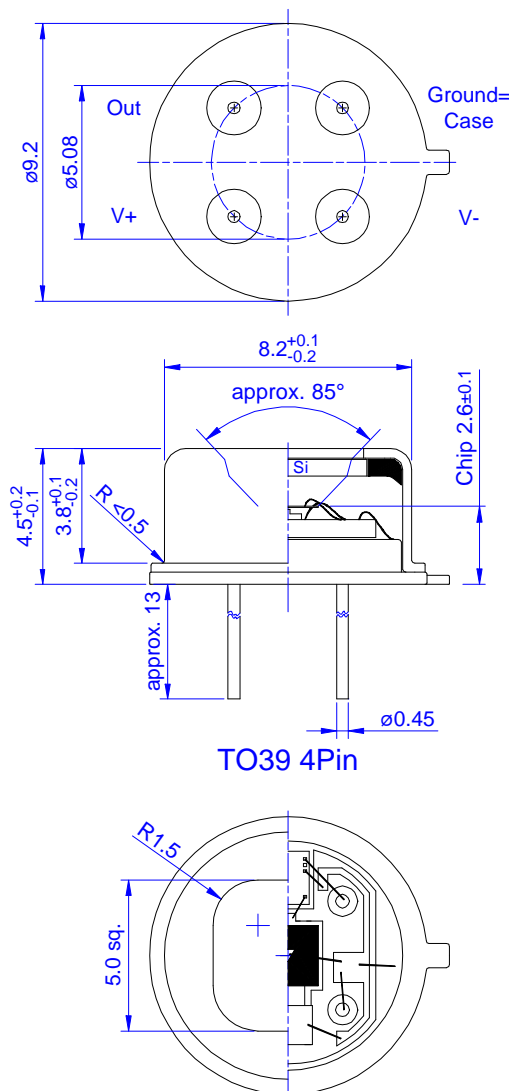
## Description: LME-337-#

[# = extension code]

single element, area 2.0x2.0mm<sup>2</sup>, thermal compensation, ultra low microphonic effect;  
for current mode, with micro power OpAmp; feedback R 100GOhm ±20% // C 40±10pF;  
advanced transimpedance amplifier (TIA) for 1Hz to 100 Hz modulation frequency range; very high gain

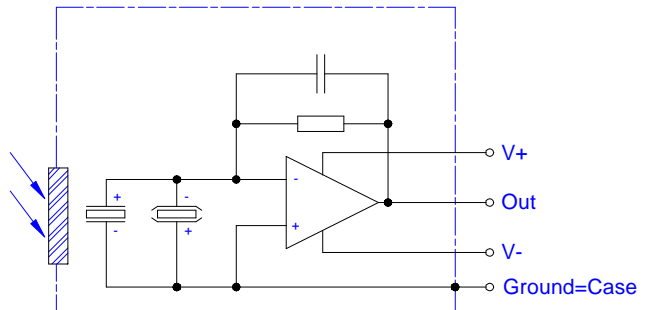


## Housing:

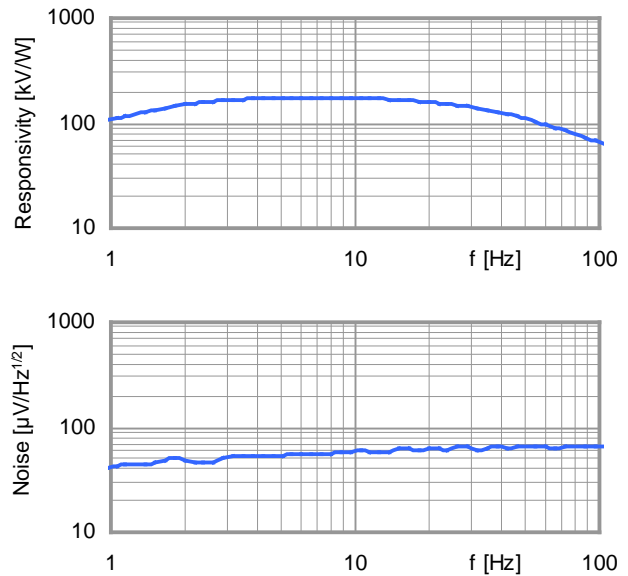


Maximum current between case and the "case" - pin 10 mA!

## Pin assignment:



## Frequency response:



Extended Products

**InfraTec GmbH**  
Infrarotsensorik und Messtechnik  
Gostritzer Str.61-63  
01217 Dresden / Germany  
E-Mail: sensor@InfraTec.de  
http://www.InfraTec.de

distributed by:

**ELECTRO OPTICAL COMPONENTS, Inc.**  
5460 Skylane Blvd.  
Santa Rosa, California 95403

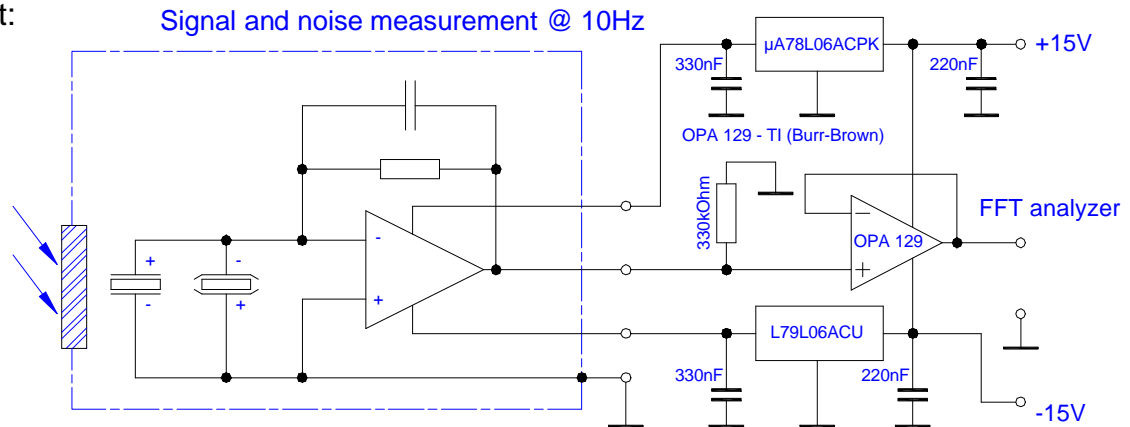


Tel: 707-568-1642  
Fax: 707-568-1652  
E-Mail: info@eoc-inc.com  
http://www.eoc-inc.com

## LME-337-#

2.0 x 2.0 mm<sup>2</sup> fast pyroelectric IR detector  
CMOS preamplifier - ultra low microphonic effect

Test circuit:



Parameters:

Element size / type	nom	2.0x2.0 mm <sup>2</sup> lithium-tantalate with black layer
Aperture	nom	5.0 mm sq.
Thermal time constant	typ	150 ms
Feedback resistor	nom	100 GOhm ±20%
Feedback capacitor	nom	40±10 fF
Polarity	nom	negative signal by positive IR flux change
Voltage Responsivity {500K, 10Hz, 25°C, without window}	min	140,000 V/W
Roll-off [-3dB / -6dB]	typ	40 Hz / 70 Hz
Noise density {10Hz, BW 1Hz, 25°C}	max	75 μV/Hz <sup>1/2</sup>
	@ 40 Hz / 70 Hz	typ 67 μV/Hz <sup>1/2</sup> / 70 μV/Hz <sup>1/2</sup>
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	3.7*10 <sup>8</sup> cmHz <sup>1/2</sup> /W
	@ 40 Hz / 70 Hz	typ 3.5*10 <sup>7</sup> cmHz <sup>1/2</sup> /W / 2.4*10 <sup>7</sup> cmHz <sup>1/2</sup> /W
Acceleration response {10Hz}	typ	500 μV/g; g=9.81m/s <sup>2</sup>
	@ 40 Hz / 70 Hz	typ 1000 μV/g / 1500μV/g; g=9.81m/s <sup>2</sup>
CMOS operational amplifier	nom	OpAmp2 (for characteristics see application note)
Supply voltage V <sup>+</sup> - V <sup>-</sup>	max	16 V
Operating supply voltage V <sup>+</sup> / V <sup>-</sup>		+2.2 ... 8.0 V / -2.2 ... -8.0 V
Recommended supply voltage	nom	V <sup>+</sup> = +5 V; V <sup>-</sup> = -5 V
Supply current {output load 1MOhm}	max	150 μA
Offset voltage {25°C; output load 1MOhm}		-5 mV ... +5 mV
Optimal output load	nom	330 kOhm
Absolute output current	max	± 0.4 mA
Operating / Storage temperature	nom	-25 ... +85°C
Window cap		All InfraTec windows and filters are available (except KBr and CsI). Customized filters upon request.

InfraTec reserves the right to change these specifications at any time without notification!

© InfraTec GmbH, September 12<sup>th</sup> 2005

InfraTec GmbH

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Gostritzer Str.61-63

01217 Dresden / Germany

E-Mail: sensor@InfraTec.de

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