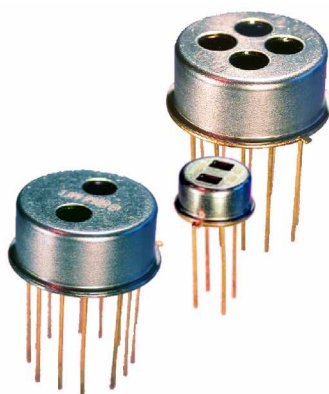


Pyroelectric and Multispectral Detectors

Multi-color Products / PyroMid®



LIM-011

LIM-012

LIM-032

LIM-052

LIM-054

LIM-114

LIM-122

LIM-162

LIM-212

LIM-214

LIM-222

LIM-262

LIM-314

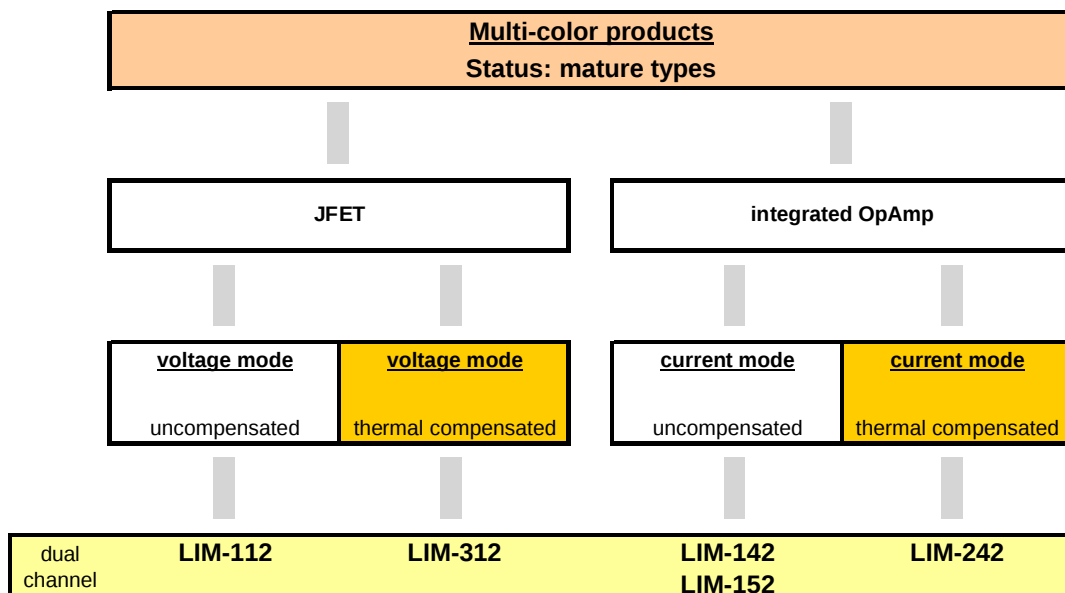
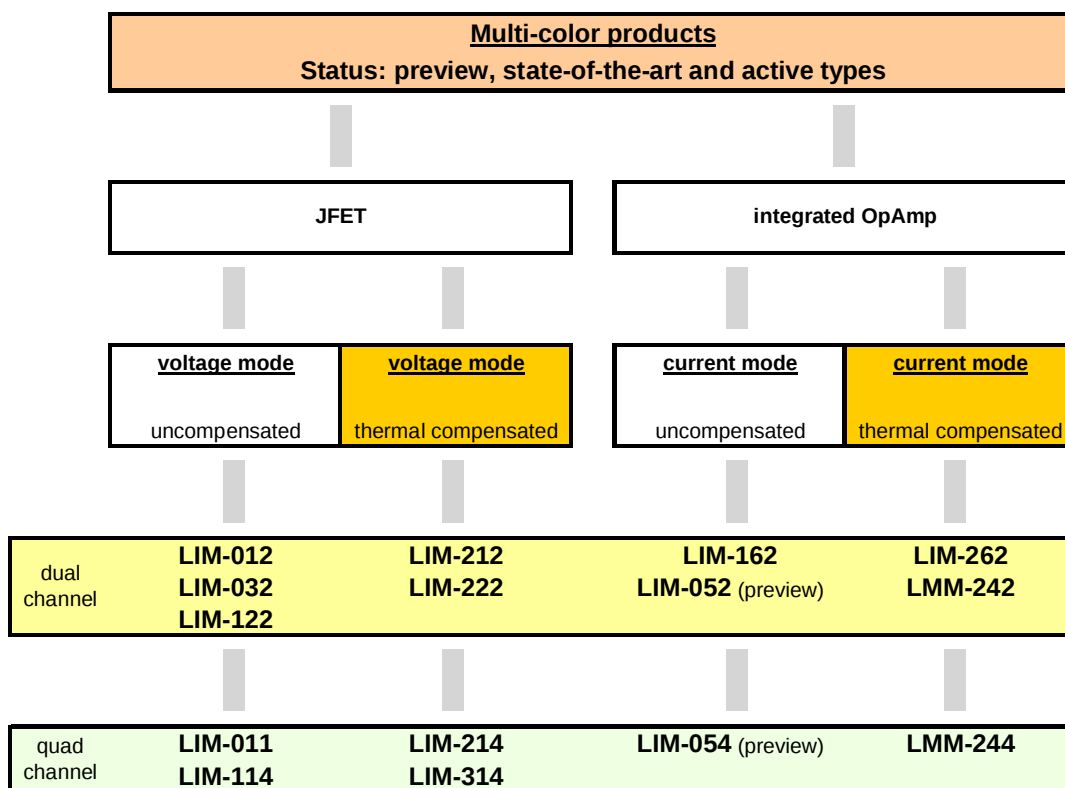
LMM-242

LMM-244

Multi-color Products

Pyroelectric and Multispectral Detectors

Multi-color Products / PyroMid®



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

© InfraTec GmbH, October 19th 2005

LIM-011-#

Quad channel pyroelectric multicolor detector
with integrated beamsplitter (PyroMid®)

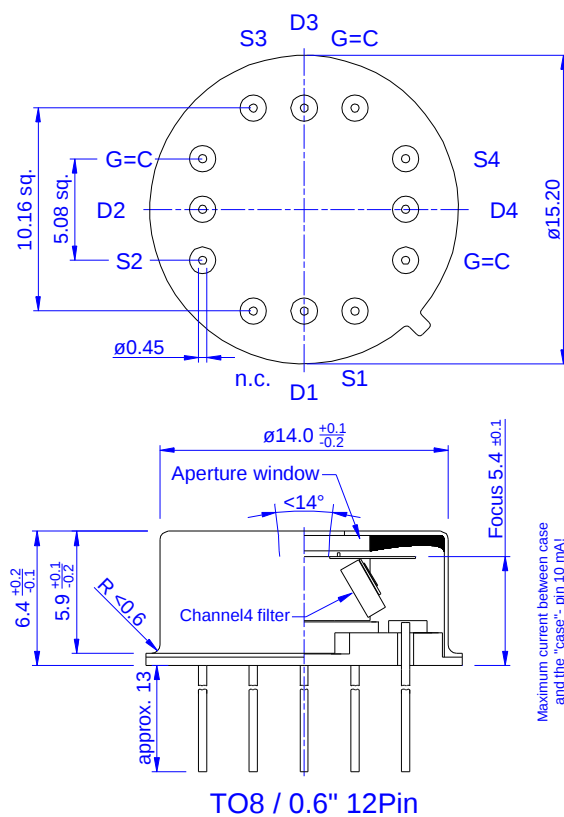
Description: LIM-011-#

[# = extension code]

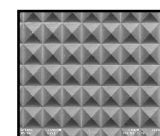
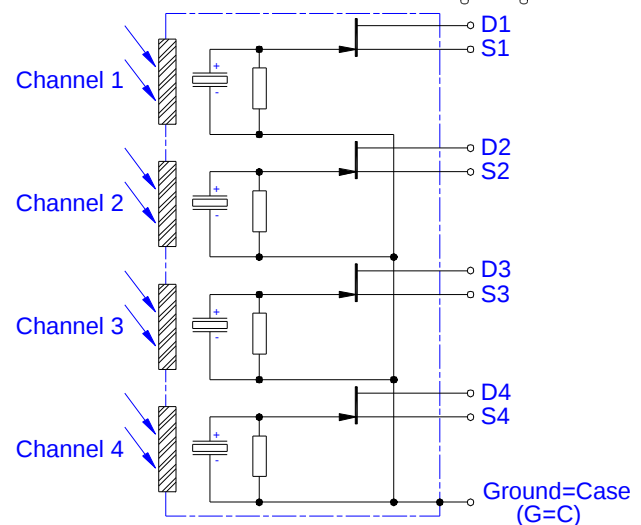
quad color, TO8 housing, with integrated micro pyramid beamsplitter; for voltage mode

PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.

Housing:

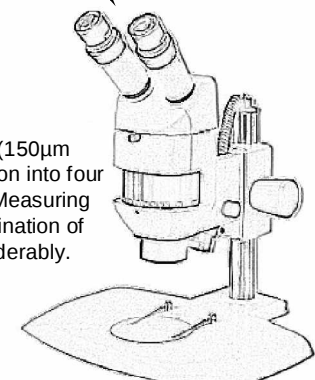


Pin assignment:



SEM photograph of a micro pyramid beamsplitter

More than 200 micro pyramids (150µm pitch) divide the incident radiation into four spectral channels (patented). Measuring errors by an asymmetrical illumination of the aperture are reduced considerably.

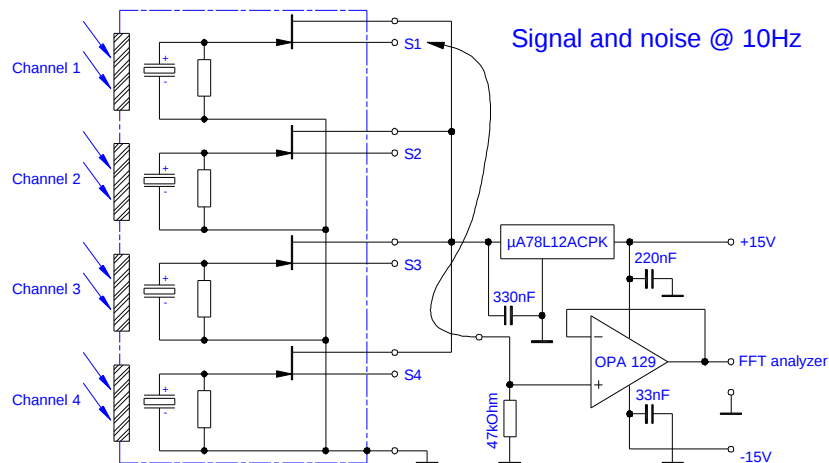


Multi-color Products

LIM-011-#

Quad channel pyroelectric multicolor detector
with integrated beamsplitter (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø2.5 mm
Element size / type	nom	2.2x1.3 mm ² lithium tantalate with black layer
Beamsplitter	nom	array of micro pyramids
Thermal time constant	typ	250 ms
Electrical time constant	typ	5 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	70 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	200 nV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	1.0*10 ⁸ cmHz ^{1/2} /W
Offset voltage {I _{Dopt.} = 10-100μA}	nom	0.4 ... 1.5 V
U _{DS}	max	18 V
Operating / Storage temperature	nom	-25 ... +85°C
Aperture window		CaF ₂ 0.4mm thick, customized window upon request.
Channel filters		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

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

© InfraTec GmbH, October 18th 2005

LIM-012-#

Dual channel pyroelectric multicolor detector
with integrated beamsplitter (PyroMid®)

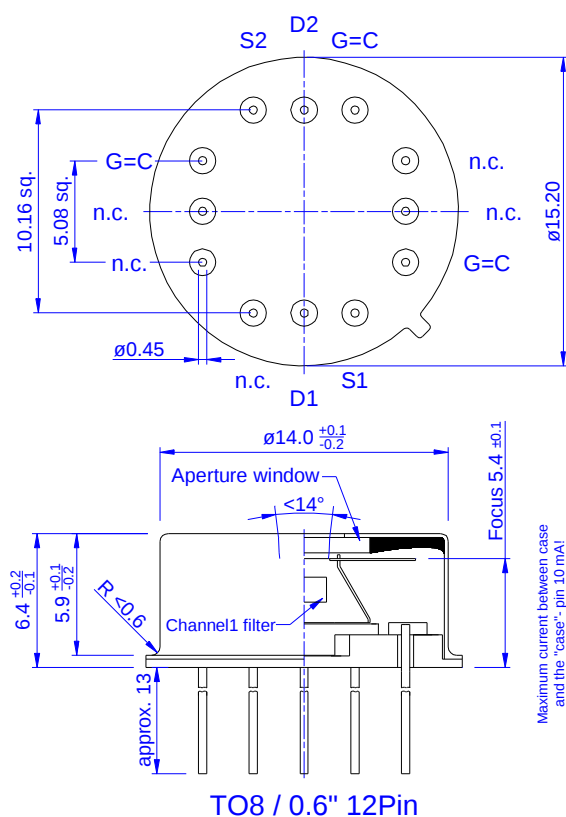
Description: LIM-012-#

[# = extension code]

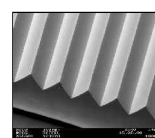
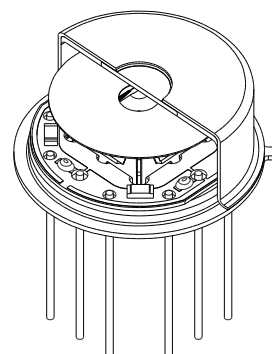
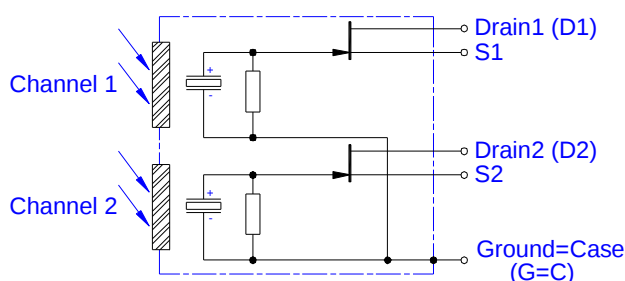
dual color, TO8 housing, with integrated micro groove beamsplitter; for voltage mode

PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.

Housing:

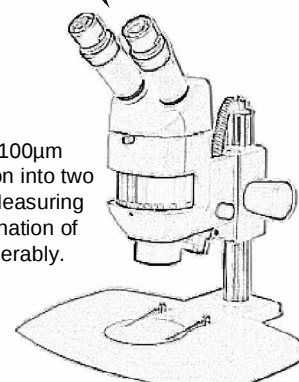


Pin assignment:



SEM photograph of a micro groove beamsplitter

More than 25 micro V-grooves (100µm pitch) divide the incident radiation into two spectral channels (patented). Measuring errors by an asymmetrical illumination of the aperture are reduced considerably.



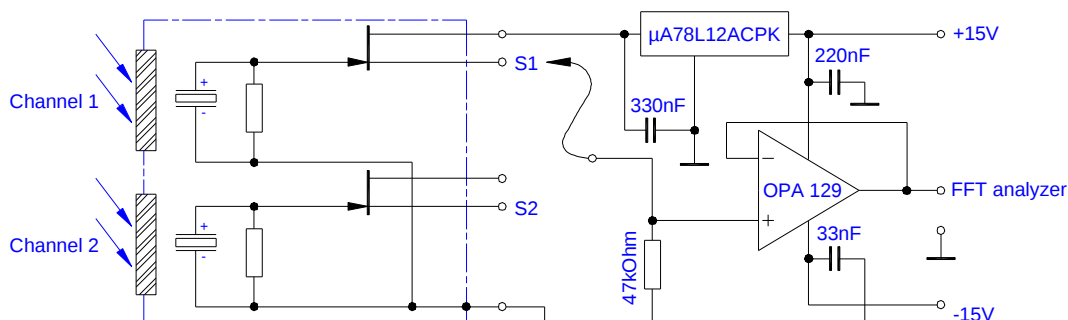
Multi-color Products

LIM-012-#

Dual channel pyroelectric multicolor detector
with integrated beamsplitter (PyroMid®)

Test circuit:

Signal and noise @ 10Hz



Parameters:

Aperture size	nom	ø2.5 mm
Element size / type	nom	2.2x1.3 mm ² lithium tantalate with black layer
Beamsplitter	nom	array of micro grooves
Thermal time constant	typ	250 ms
Electrical time constant	typ	5 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	140 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	200 nV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	1.6*10 ⁸ cmHz ^{1/2} /W
Offset voltage {I _{Dopt.} =10-100μA}	nom	0.4 ... 1.5 V
U _{DS}	max	18 V
Operating / Storage temperature	nom	-25 ... +85°C
Aperture window		CaF ₂ 0.4mm thick, customized window upon request.
Channel filters		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

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

© InfraTec GmbH, October 18th 2005

LIM-032-#

Dual channel pyroelectric multicolor detector
with integrated beamsplitter (PyroMid®)

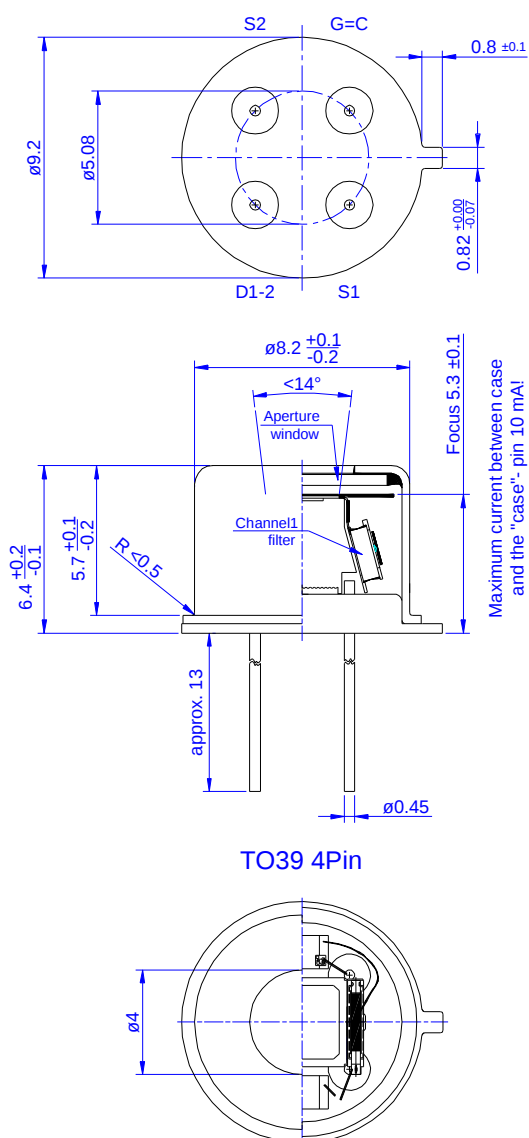
Description: LIM-032-#

[# = extension code]

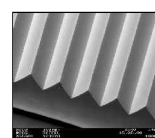
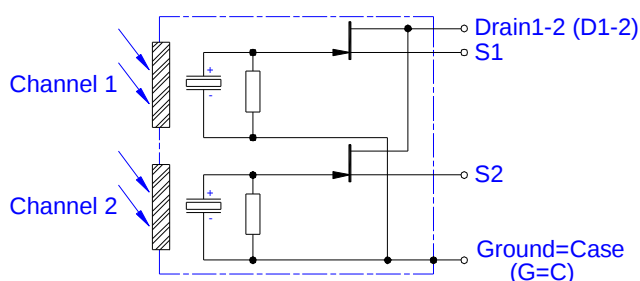
dual color, TO39 housing, with integrated micro groove beamsplitter; for voltage mode

PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.

Housing:

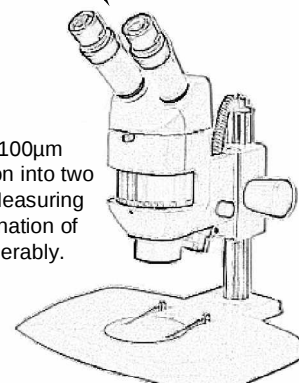


Pin assignment:



SEM photograph of a micro groove beamsplitter

More than 25 micro V-grooves (100µm pitch) divide the incident radiation into two spectral channels (patented). Measuring errors by an asymmetrical illumination of the aperture are reduced considerably.

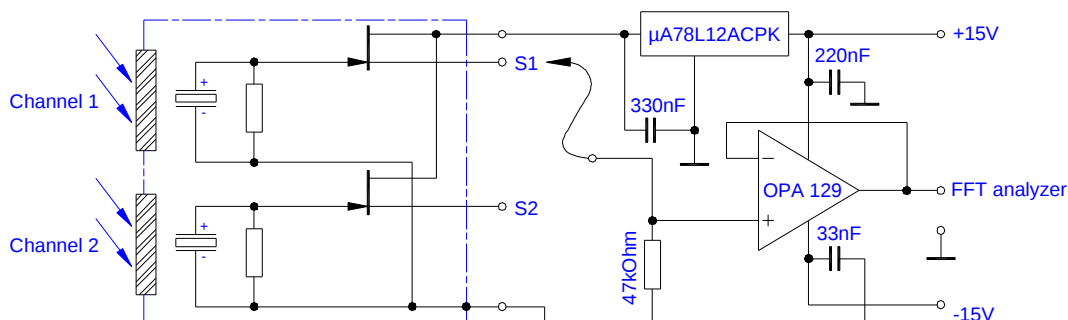


LIM-032-#

Dual channel pyroelectric multicolor detector
with integrated beamsplitter (PyroMid®)

Test circuit:

Signal and noise @ 10Hz



Parameters:

Aperture size	nom	2.8 mm sq.
Element size / type	nom	2.2x1.3 mm ² lithium tantalate with black layer
Beamsplitter	nom	array of micro grooves
Thermal time constant	typ	250 ms
Electrical time constant	typ	5 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	150 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	200 nV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	2.1*10 ⁸ cmHz ^{1/2} /W
Offset voltage {I _{Dopt.} =10-100µA}	nom	0.4 ... 1.5 V
U _{DS}	max	18 V
Operating / Storage temperature	nom	-25 ... +85°C
Aperture window		CaF ₂ 0.4mm thick, customized window upon request.
Channel filters		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

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

© InfraTec GmbH, October 18th 2005

LIM-052-#

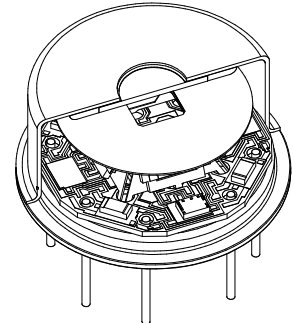
Dual channel pyroelectric multicolor detector
with integrated beamsplitter and CMOS preamplifier (PyroMid®)

Description: LIM-052-#

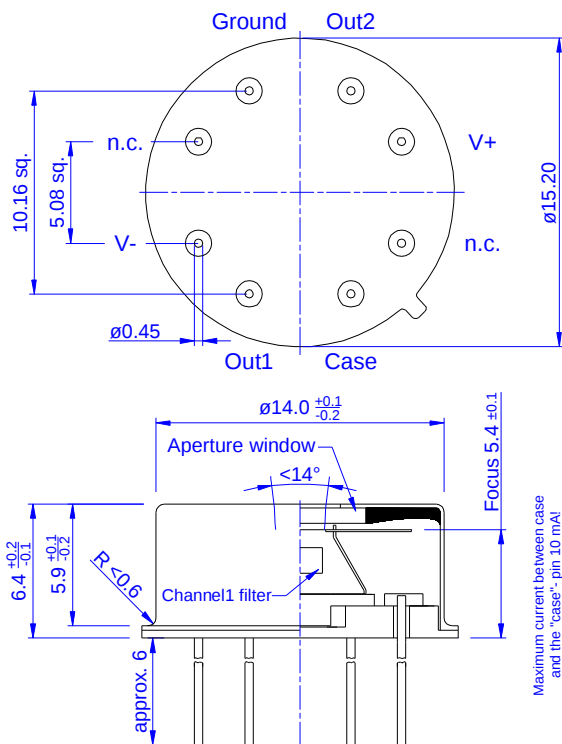
[# = extension code]

dual color, potential-free TO8 housing, with integrated micro groove beamsplitter;
current mode with micro power OpAmp; feedback R 24GOhm $\pm 20\%$ // C 0.20 ± 0.1 pF;
high gain

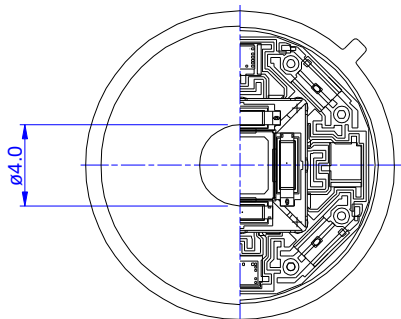
PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.



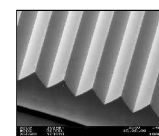
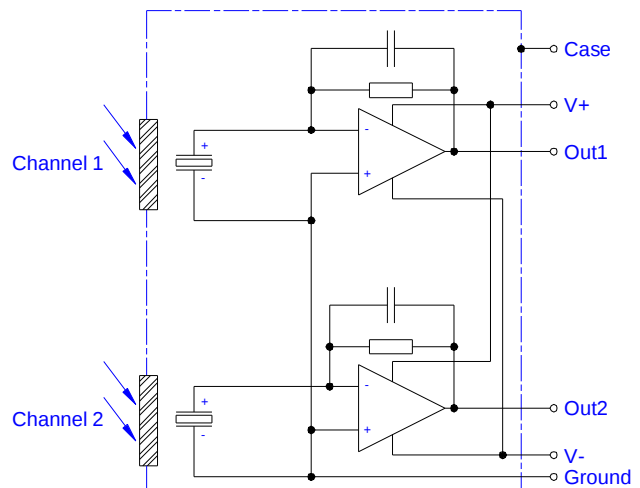
Housing:



TO8 / 0.6" 8Pin

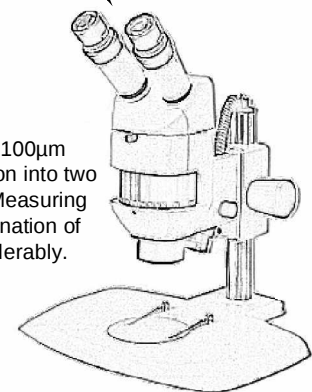


Pin assignment:



SEM photograph of a micro groove beamsplitter

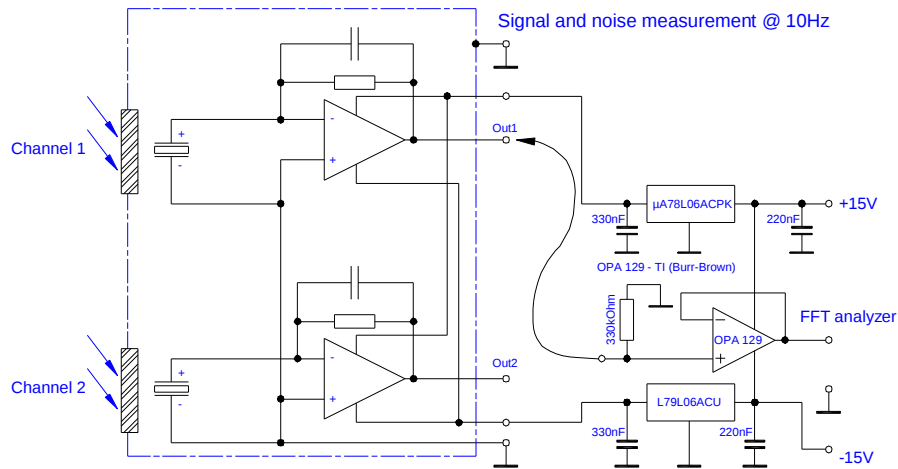
More than 25 micro V-grooves (100 μ m pitch) divide the incident radiation into two spectral channels (patented). Measuring errors by an asymmetrical illumination of the aperture are reduced considerably.



LIM-052-#

Dual channel pyroelectric multicolor detector
with integrated beamsplitter and CMOS preamplifier (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	2.8 mm sq.
Element size / type	nom	2.2x1.3 mm ² lithium tantalate with black layer
Beamsplitter	nom	array of micro grooves
Thermal time constant	typ	250 ms
Feedback resistor	nom	24 GOhm ±20%
Feedback capacitor	nom	0.2±0.1 pF
Polarity	nom	negative signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	6,000 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	24 $\mu\text{V}/\text{Hz}^{1/2}$
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	$7.0 \cdot 10^7 \text{ cmHz}^{1/2}/\text{W}$
CMOS operational amplifier	nom	OpAmp2 (for characteristics see application note)
Supply voltage V^+ - V^-	max	16 V
Operating supply voltage V^+ / V^-		+2.2 ... 8.0 V / -2.2 ... -8.0 V
Recommended supply voltage	nom	$V^+ = +5 \text{ V}; V^- = -5 \text{ V}$
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
Potential of detector case	nom	selectable potential between -8 ... +8V to Ground {EMC requires low-impedance coupling}
Operating / Storage temperature	nom	-25 ... +85°C
Aperture window		CaF ₂ 0.4mm thick, customized window upon request.
Channel filters		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

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

© InfraTec GmbH, October 18th 2005

LIM-054-#

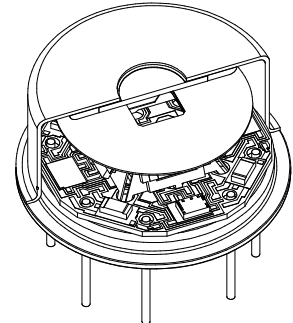
Quad channel pyroelectric multicolor detector
with integrated beamsplitter and CMOS preamplifier (PyroMid®)

Description: LIM-054-#

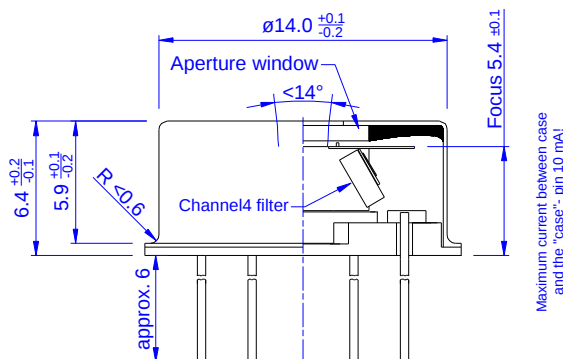
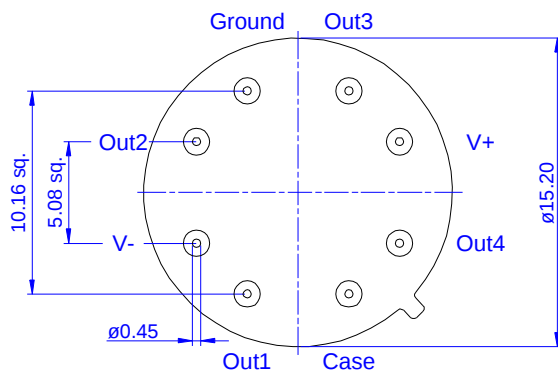
[# = extension code]

quad color, potential-free TO8 housing, with integrated micro pyramid beamsplitter;
current mode with micro power OpAmp; feedback R 24GOhm $\pm 20\%$ // C 0.20 ± 0.1 pF;
high gain

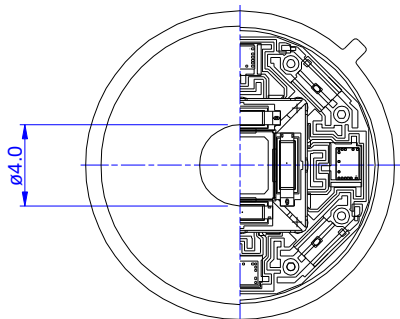
PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.



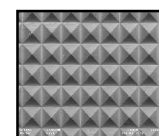
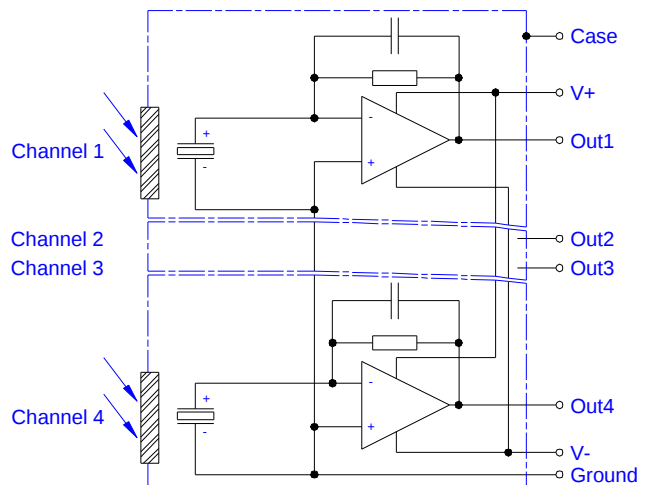
Housing:



TO8 / 0.6" 8Pin

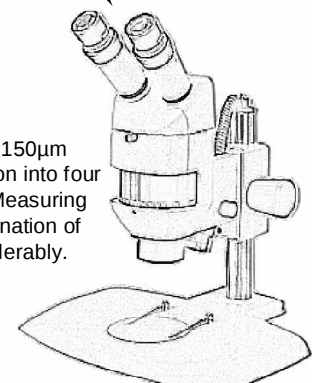


Pin assignment:



SEM photograph of a micro pyramid beamsplitter

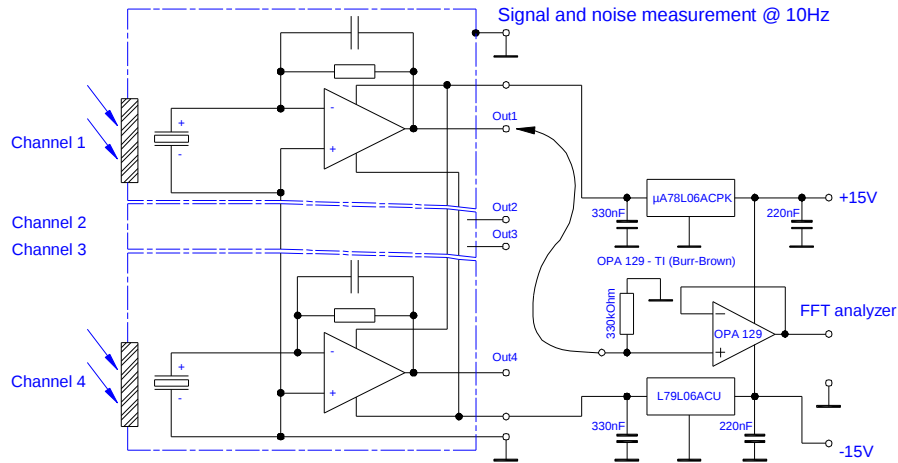
More than 200 micro pyramids (150 μ m pitch) divide the incident radiation into four spectral channels (patented). Measuring errors by an asymmetrical illumination of the aperture are reduced considerably.



LIM-054-#

Quad channel pyroelectric multicolor detector
with integrated beamsplitter and CMOS preamplifier (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	2.8 mm sq.
Element size / type	nom	2.2x1.3 mm ² lithium tantalate with black layer
Beamsplitter	nom	array of micro pyramids
Thermal time constant	typ	250 ms
Feedback resistor	nom	24 GOhm ±20%
Feedback capacitor	nom	0.2±0.1 pF
Polarity	nom	negative signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	3,000 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	24 $\mu\text{V}/\text{Hz}^{1/2}$
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	$3.5 \cdot 10^7 \text{ cmHz}^{1/2}/\text{W}$
CMOS operational amplifier	nom	OpAmp2 (for characteristics see application note)
Supply voltage V^+ - V^-	max	16 V
Operating supply voltage V^+ / V^-		+2.2 ... 8.0 V / -2.2 ... -8.0 V
Recommended supply voltage	nom	$V^+ = +5 \text{ V}; V^- = -5 \text{ V}$
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
Potential of detector case	nom	selectable potential between -8 ... +8V to Ground {EMC requires low-impedance coupling}
Operating / Storage temperature	nom	-25 ... +85°C
Aperture window		CaF ₂ 0.4mm thick, customized window upon request.
Channel filters		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

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

© InfraTec GmbH, October 18th 2005

LIM-114-#

Quad channel pyroelectric multicolor detector
uncompensated (PyroMid®)

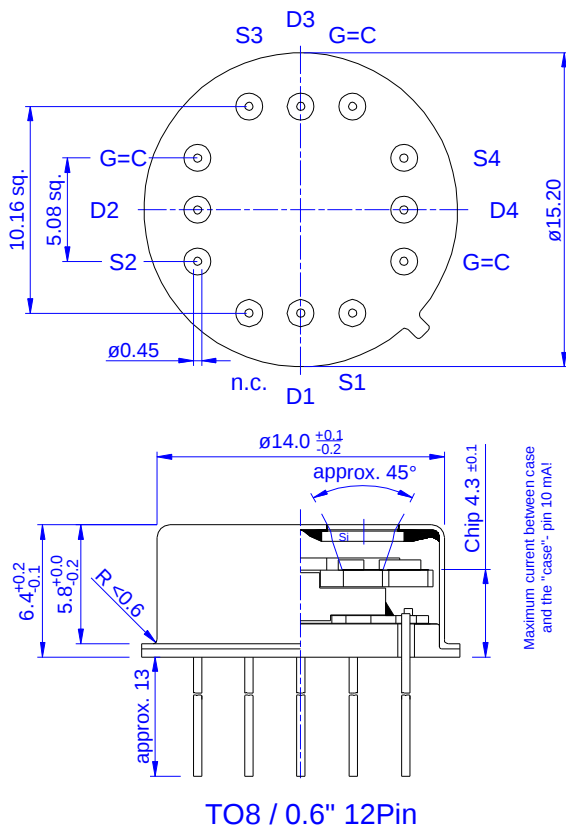
Description: LIM-114-#

[# = extension code]

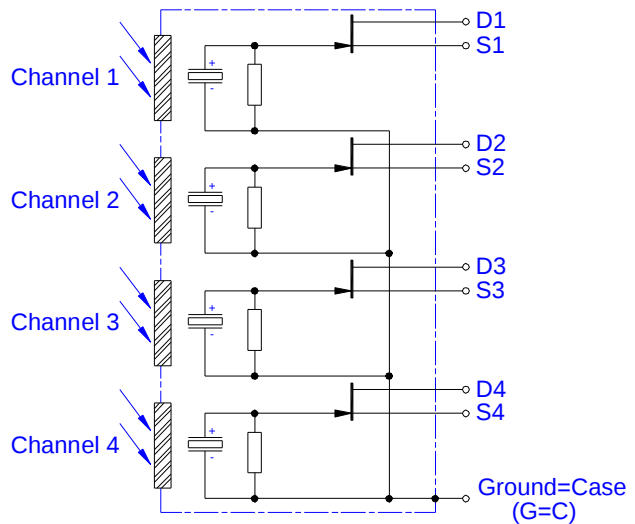
quad color, TO8 housing; for voltage mode

PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.

Housing:



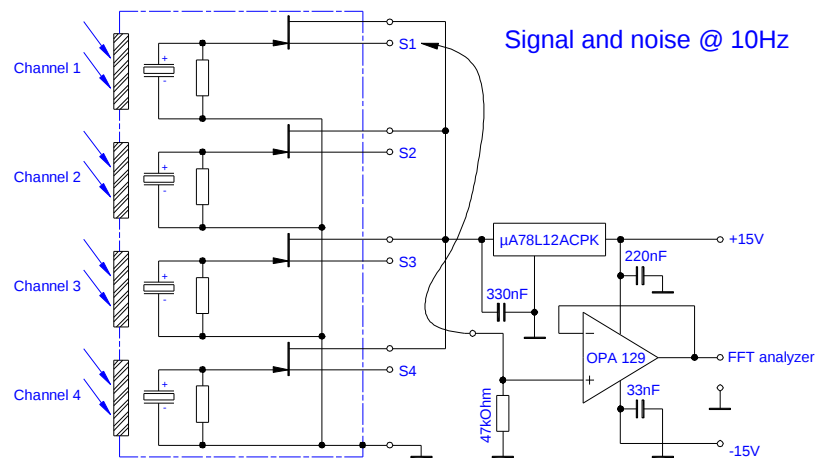
Pin assignment:



LIM-114-#

Quad channel pyroelectric multicolor detector uncompensated (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø9.5 mm, single channel ø3.5 mm
Element size / type	nom	2.0x2.0 mm ² lithium tantalate with black layer
Thermal time constant	typ	100 ms
Electrical time constant	typ	5 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	300 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	150 nV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	4.2*10 ⁸ cmHz ^{1/2} /W
Offset voltage {I _{Dopt.} =10-100µA}	nom	0.4 ... 1.5 V
U _{DS}	max	18 V
Operating / Storage temperature	nom	-25 ... +85°C
Window cap		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

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

© InfraTec GmbH, September 12th 2005

LIM-122-#

Dual channel pyroelectric multicolor detector
uncompensated (PyroMid®)

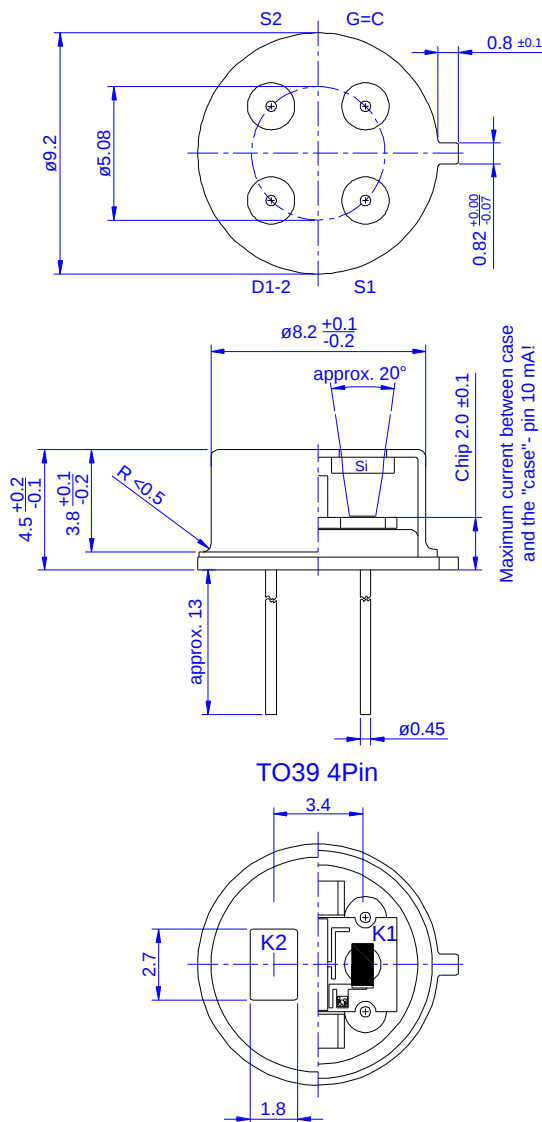
Description: LIM-122-#

[# = extension code]

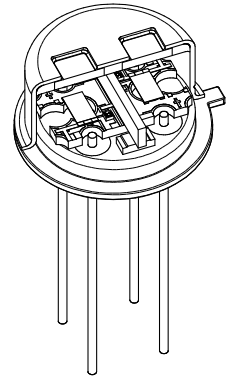
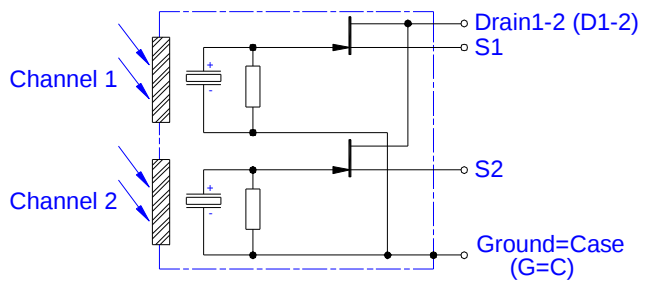
dual color, TO39 housing; for voltage mode

PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.

Housing:



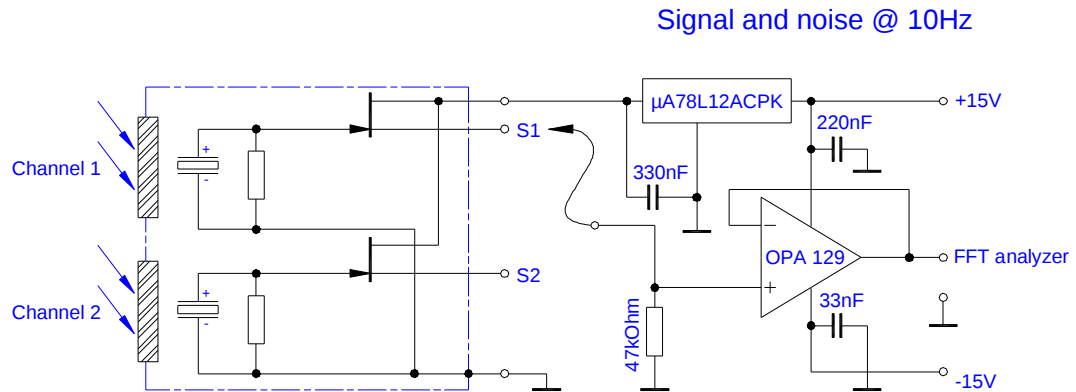
Pin assignment:



LIM-122-#

Dual channel pyroelectric multicolor detector
uncompensated (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø6.0 mm, single channel 2.7x1.8 mm ²
Element size / type	nom	1.0x2.0 mm ² lithium tantalate with black layer
Thermal time constant	typ	100 ms
Electrical time constant	typ	3 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	560 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	280 nV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	2.8*10 ⁸ cmHz ^{1/2} /W
Offset voltage {I _{Dopt.} =10-100µA}	nom	0.4 ... 1.5 V
U _{DS}	max	18 V
Operating / Storage temperature	nom	-25 ... +85°C
Window cap		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

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

© InfraTec GmbH, September 12th 2005

LIM-162-#

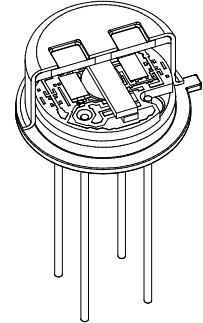
Dual channel pyroelectric multicolor detector
uncompensated, CMOS preamplifier (PyroMid®)

Description: LIM-162-#

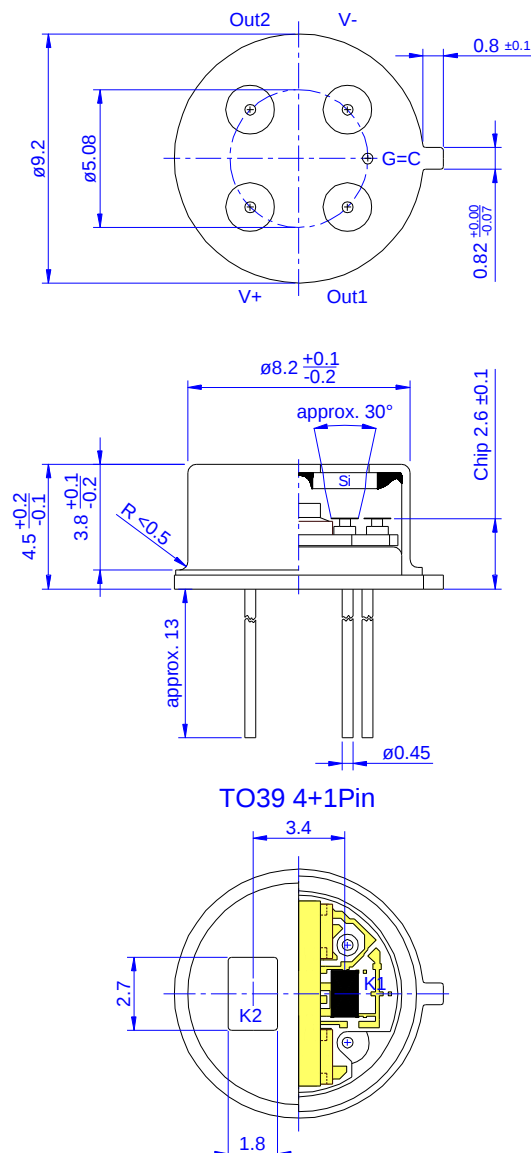
[# = extension code]

dual color, TO39 housing;
current mode with micro power OpAmp; feedback R 24GOhm $\pm 10\%$ // C 0.20 ± 0.1 pF;
high gain

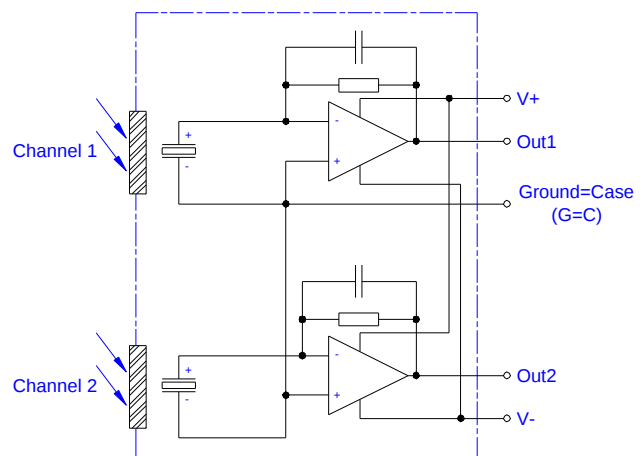
PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.



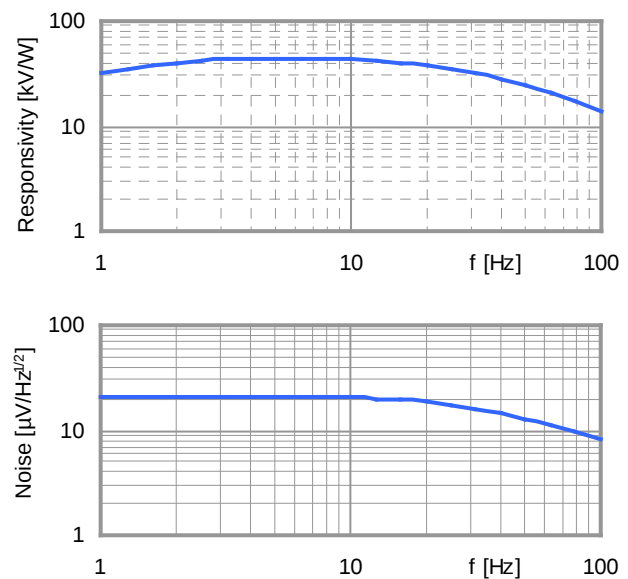
Housing:



Pin assignment:



Frequency response:

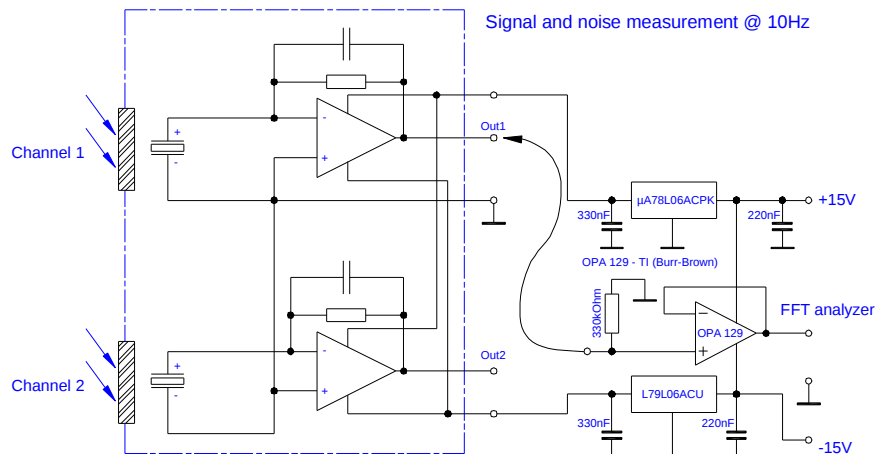


Multi-color Products

LIM-162-#

Dual channel pyroelectric multicolor detector
uncompensated, CMOS preamplifier (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø6.0 mm, single channel 2.7x1.8 mm ²
Element size / type	nom	1.0x1.8 mm ² lithium tantalate with black layer
Thermal time constant	typ	150 ms
Feedback resistor	nom	24 GOhm ±10%
Feedback capacitor	nom	0.2±0.1 pF
Polarity	nom	negative signal by positive IR flux change
Voltage Responsivity {500K, 10Hz, 25°C, without window}	min	32,000 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	24 µV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	1.8*10 ⁸ cmHz ^{1/2} /W
CMOS operational amplifier	nom	OpAmp2 (for characteristics see application note)
Supply voltage V ⁺ - V ⁻	max	16 V
Operating supply voltage V ⁺ / V ⁻		+2.2 ... 8.0 V / -2.2 ... -8.0 V
Recommended supply voltage	nom	V ⁺ = +5 V; V ⁻ = -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, October 18th 2005

LIM-212-#

Dual channel pyroelectric multicolor detector
thermal compensated (PyroMid®)

Description: LIM-212-#

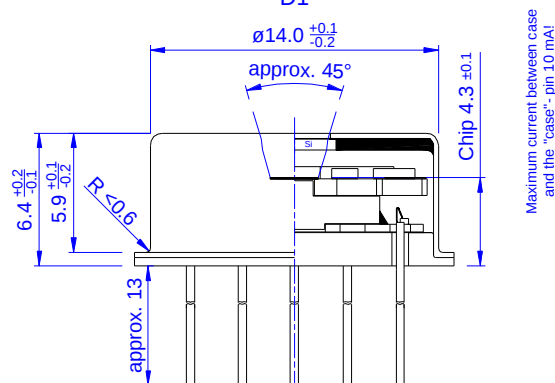
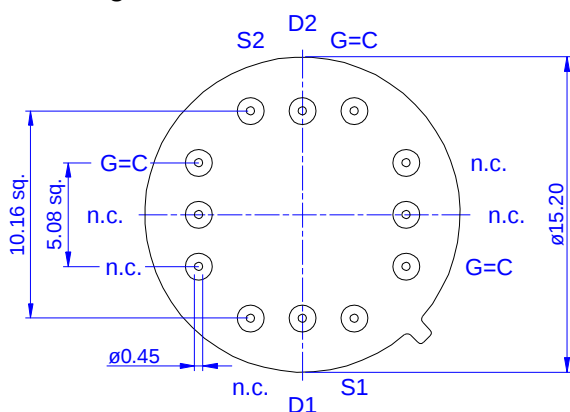
[# = extension code]

dual color, TO8 housing, thermal compensated; for voltage mode

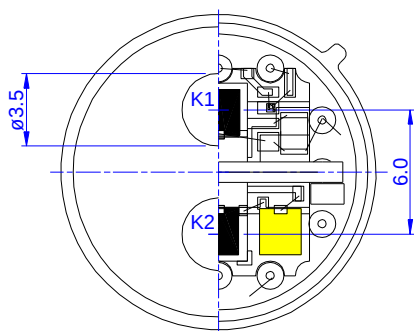
PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.



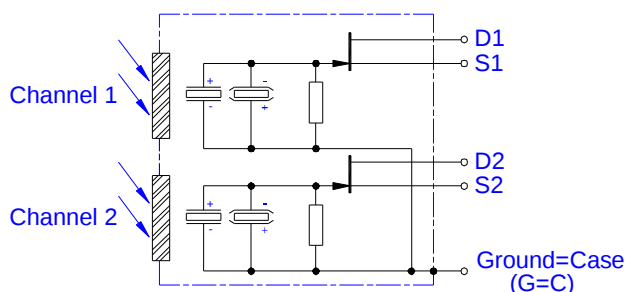
Housing:



TO8 / 0.6" 12Pin



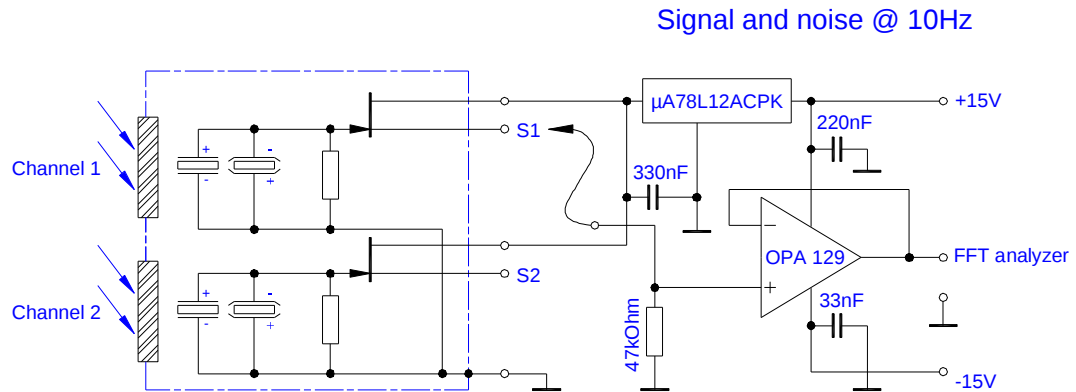
Pin assignment:



LIM-212-#

Dual channel pyroelectric multicolor detector
thermal compensated (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø9.5 mm, single channel ø3.5 mm
Element size / type	nom	2.0x2.0 mm ² lithium tantalate with black layer
Thermal time constant	typ	100 ms
Electrical time constant	typ	4 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	150 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	120 nV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	2.5*10 ⁸ cmHz ^{1/2} /W
Offset voltage {I _{Dopt.} =10-100μA}	nom	0.4 ... 1.5 V
U _{DS}	max	18 V
Operating / Storage temperature	nom	-25 ... +85°C
Window cap		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

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

© InfraTec GmbH, September 12th 2005

LIM-214-#

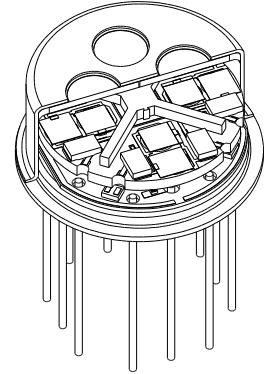
Quad channel pyroelectric multicolor detector
thermal compensated (PyroMid®)

Description: LIM-214-#

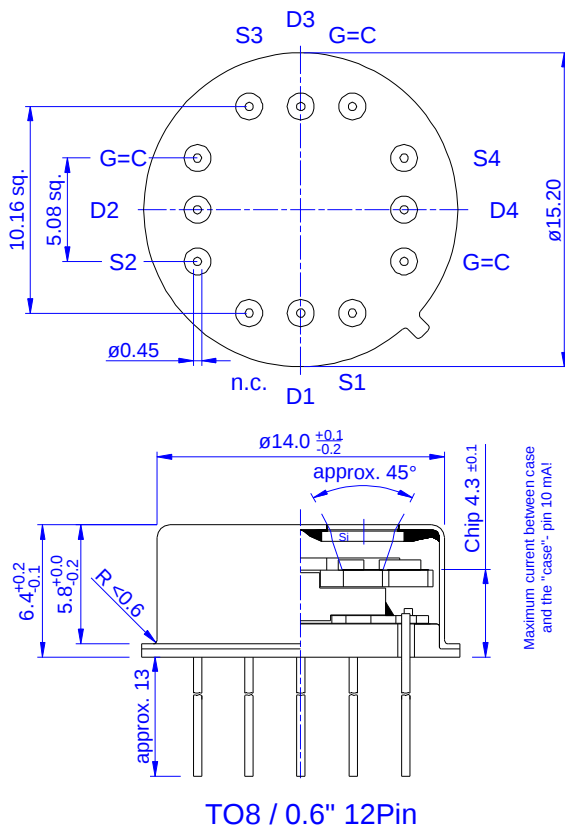
[# = extension code]

quad color, TO8 housing, parallel compensated for high temperature ramp stability; for voltage mode

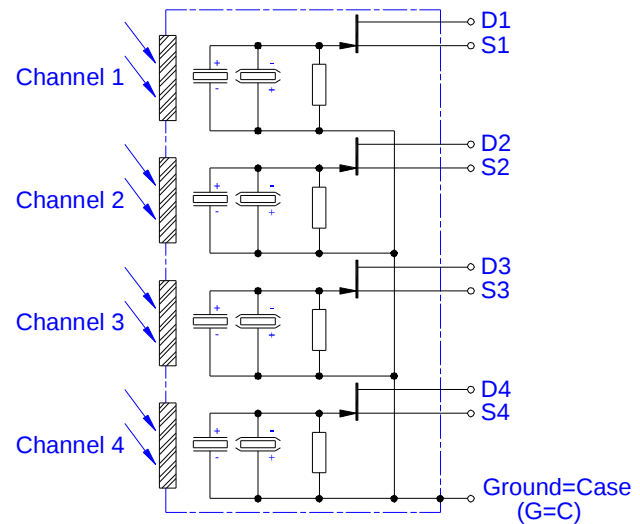
PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.



Housing:



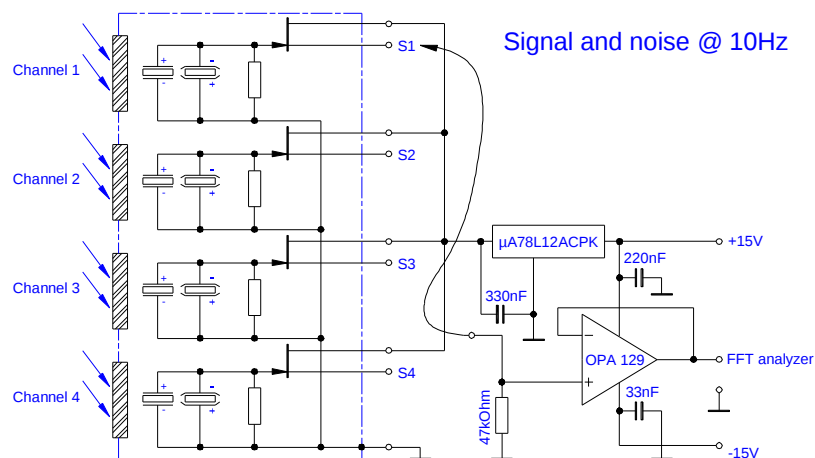
Pin assignment:



LIM-214-#

Quad channel pyroelectric multicolor detector
thermal compensated (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø9.5 mm, single channel ø3.5 mm
Element size / type	nom	2.0x2.0 mm ² lithium tantalate with black layer
Thermal time constant	typ	100 ms
Electrical time constant	typ	4 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	150 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	120 nV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	2.6*10 ⁸ cmHz ^{1/2} /W
Offset voltage {I _{Dopt.} =10-100μA}	nom	0.4 ... 1.5 V
U _{DS}	max	18 V
Operating / Storage temperature	nom	-25 ... +85°C
Window cap		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

InfraTec reserves the right to change these specifications at any time without notification!
© InfraTec GmbH, September 12th 2005

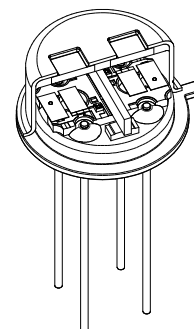
LIM-222-#

Dual channel pyroelectric multicolor detector
thermal compensated (PyroMid®)

Description: LIM-222-#

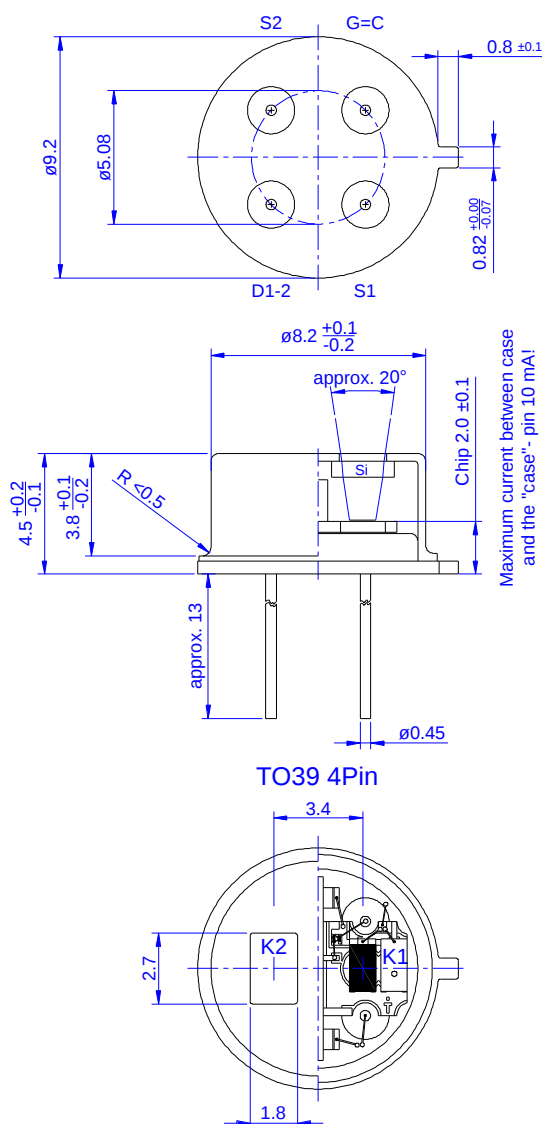
[# = extension code]

dual color, TO39 housing, thermal compensated; for voltage mode

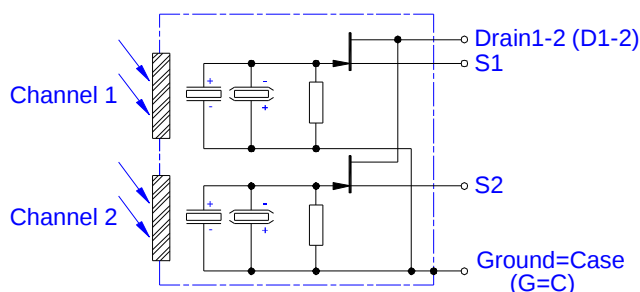


PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.

Housing:



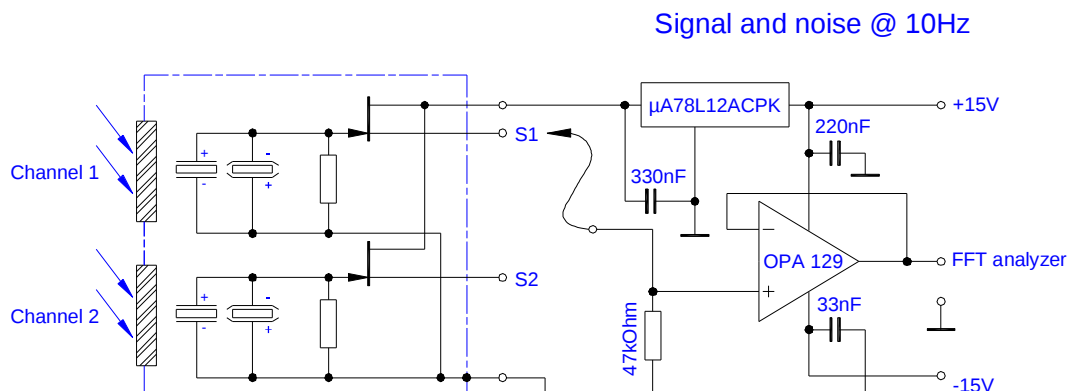
Pin assignment:



LIM-222-#

Dual channel pyroelectric multicolor detector
thermal compensated (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø6.0 mm, single channel 2.7x1.8 mm ²
Element size / type	nom	1.0x2.0 mm ² lithium tantalate with black layer
Thermal time constant	typ	100 ms
Electrical time constant	typ	6 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	280 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	150 nV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	2.6*10 ⁸ cmHz ^{1/2} /W
Offset voltage {I _{Dopt.} =10-100μA}	nom	0.4 ... 1.5 V
U _{DS}	max	18 V
Operating / Storage temperature	nom	-25 ... +85°C
Window cap		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

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

© InfraTec GmbH, September 12th 2005

LIM-262-#

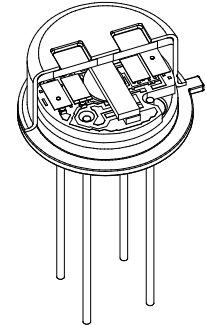
Dual channel pyroelectric multicolor detector
thermal compensated, CMOS preamplifier (PyroMid®)

Description: LIM-262-#

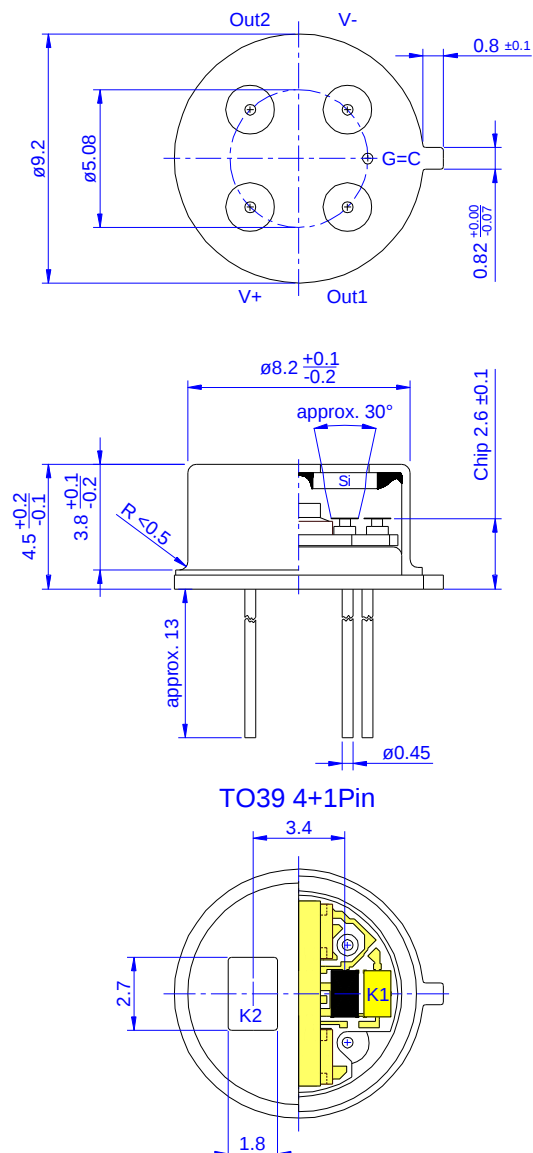
[# = extension code]

dual color, TO39 housing, thermal compensation;
current mode with micro power OpAmp; feedback R 100GOhm $\pm 20\%$ // C 0.20 ± 0.1 pF;
very high gain

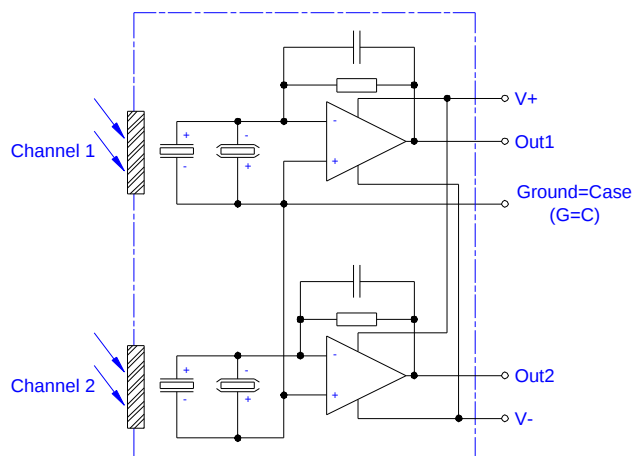
PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.



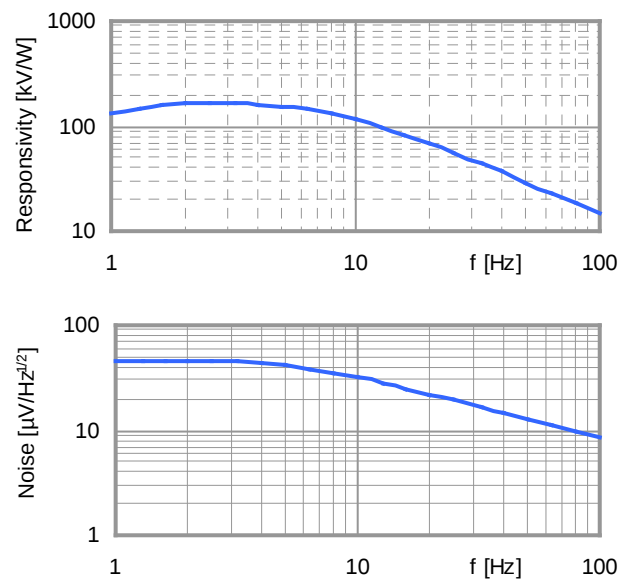
Housing:



Pin assignment:



Frequency response:

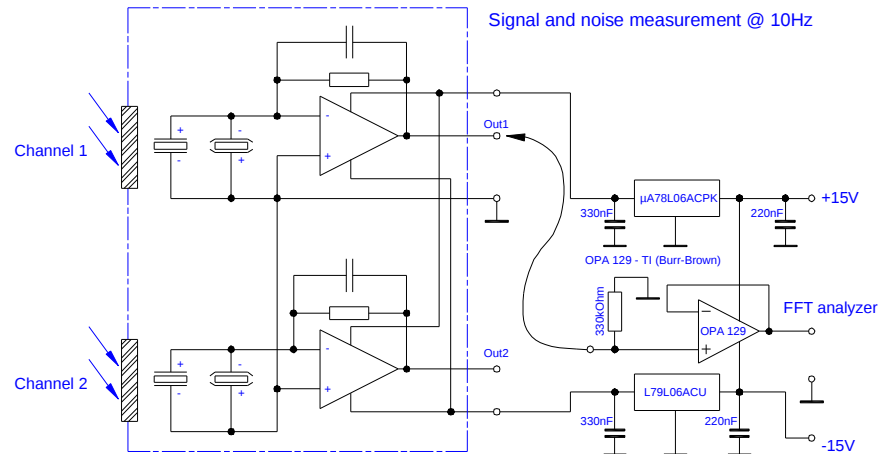


Multi-color Products

LIM-262-#

Dual channel pyroelectric multicolor detector
thermal compensated, CMOS preamplifier (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø6.0 mm, single channel 2.7x1.8 mm ²
Element size / type	nom	1.0x1.8 mm ² lithium tantalate with black layer
Thermal time constant	typ	150 ms
Feedback resistor	nom	100 GOhm ±20%
Feedback capacitor	nom	0.2±0.1 pF
Polarity	nom	negative signal by positive IR flux change
Voltage Responsivity {500K, 10Hz, 25°C, without window}	min	64,000 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	35 μV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	2.4*10 ⁸ cmHz ^{1/2} /W
CMOS operational amplifier	nom	OpAmp2 (for characteristics see application note)
Supply voltage V ⁺ - V ⁻	max	16 V
Operating supply voltage V ⁺ / V ⁻		+2.2 ... 8.0 V / -2.2 ... -8.0 V
Recommended supply voltage	nom	V ⁺ = +5 V; V ⁻ = -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 12th 2005

LIM-314-#

Quad channel pyroelectric multicolor detector
thermal compensated (PyroMid®)

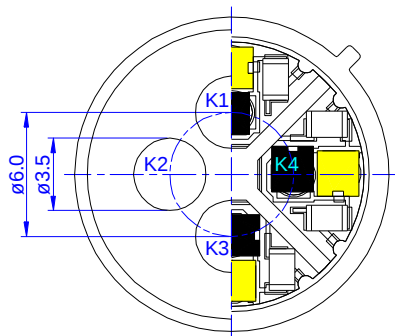
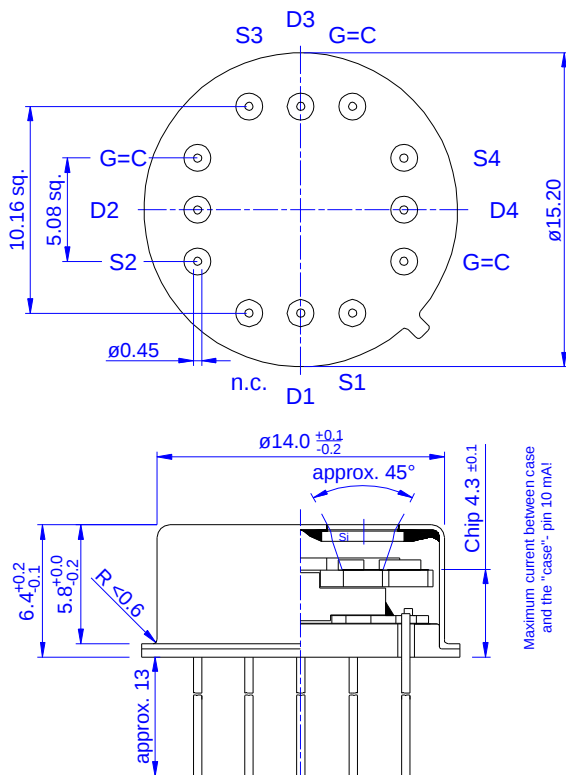
Description: LIM-314-#

[# = extension code]

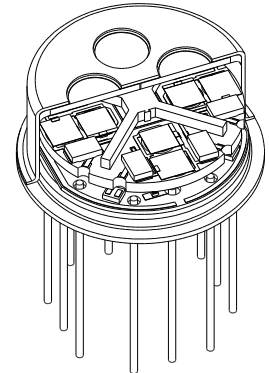
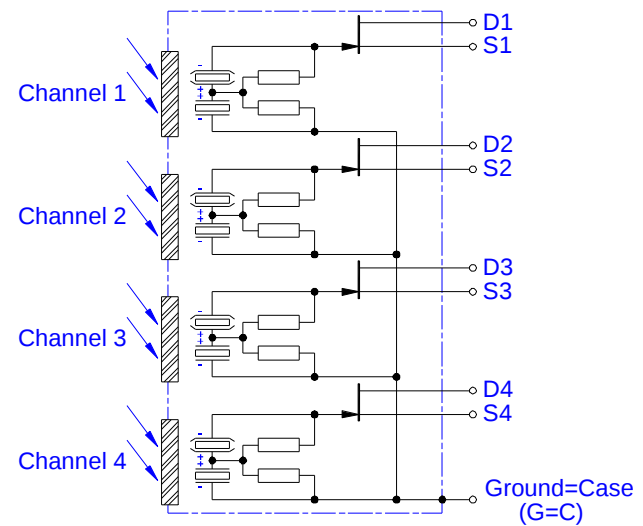
quad color, TO8 housing, serial compensated for high signal; for voltage mode

PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.

Housing:



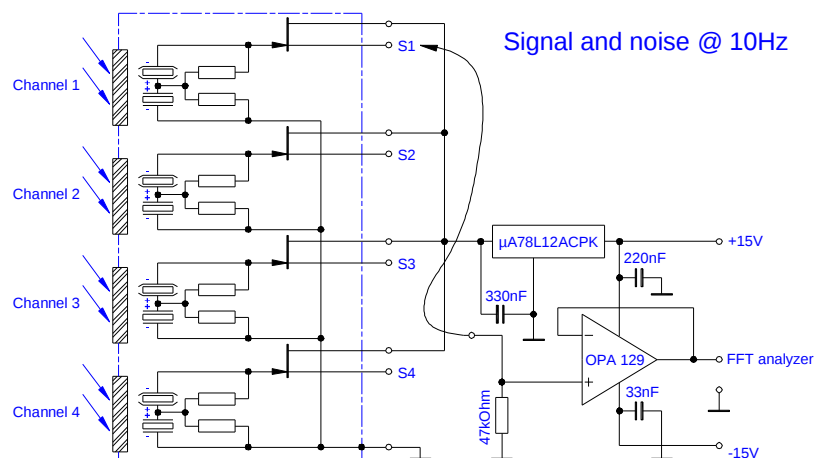
Pin assignment:



LIM-314-#

Quad channel pyroelectric multicolor detector
thermal compensated (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø9.5 mm, single channel ø3.5 mm
Element size / type	nom	2.0x2.0 mm ² lithium tantalate with black layer
Thermal time constant	typ	100 ms
Electrical time constant	typ	2 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity {500K, 10Hz, 25°C, without window}	min	300 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	280 nV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	2.2*10 ⁸ cmHz ^{1/2} /W
Offset voltage {I _{Dopt.} =10-100μA}	nom	0.4 ... 1.5 V
U _{DS}	max	18 V
Operating / Storage temperature	nom	-25 ... +85°C
Window cap		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.

InfraTec reserves the right to change these specifications at any time without notification!
© InfraTec GmbH, September 12th 2005

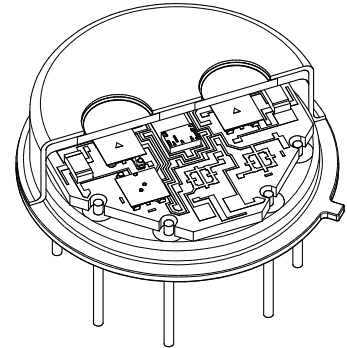
LMM-242-#

Dual channel pyroelectric multicolor detector
thermal compensated, CMOS preamplifier (PyroMid®)

Description: LMM-242-#

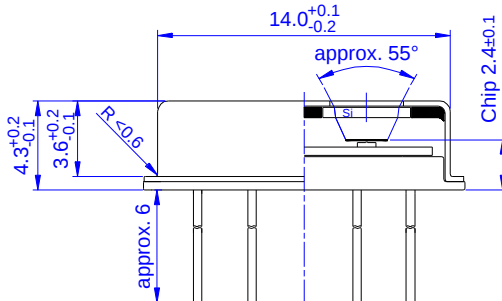
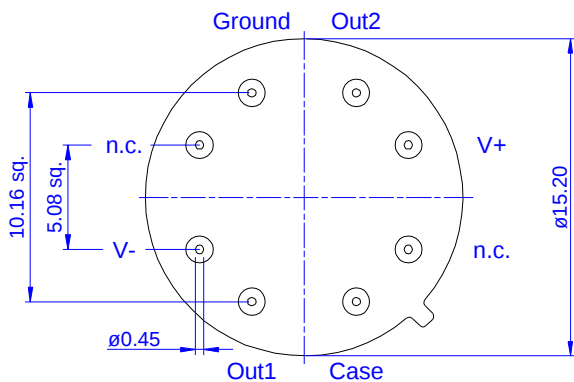
[# = extension code]

dual color, potential-free TO8 housing, thermal compensation, ultra low microphonic effect;
current mode with micro power OpAmp; feedback R 100GOhm $\pm 20\%$ // C 0.20 ± 0.1 pF;
very high gain

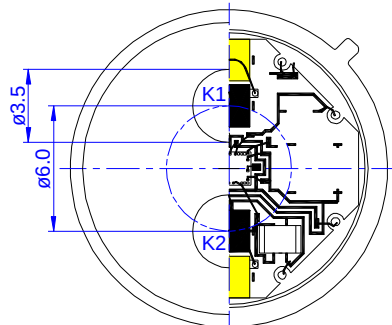


PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.

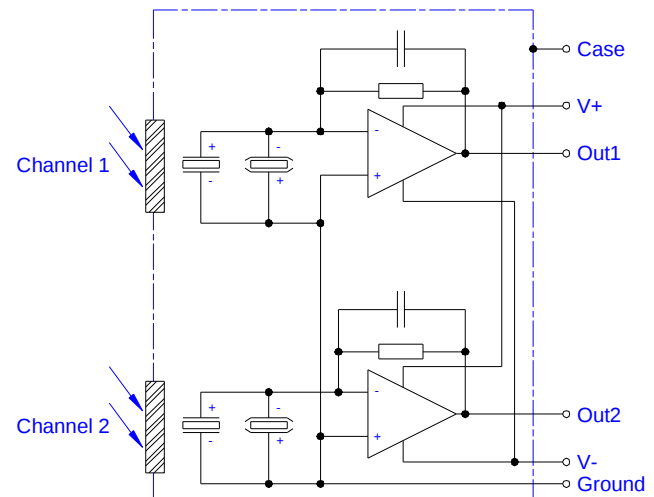
Housing:



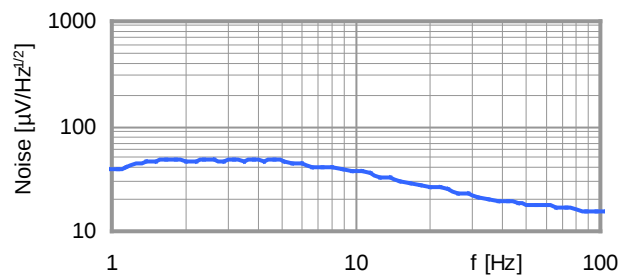
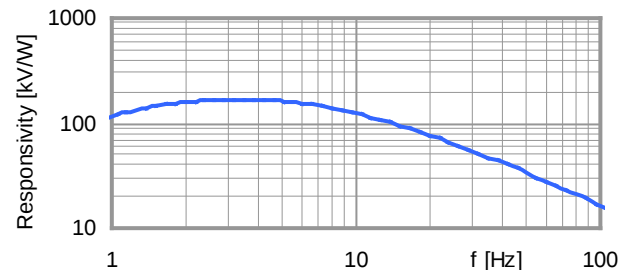
TO8 / 0.6" 8Pin



Pin assignment:



Frequency response:

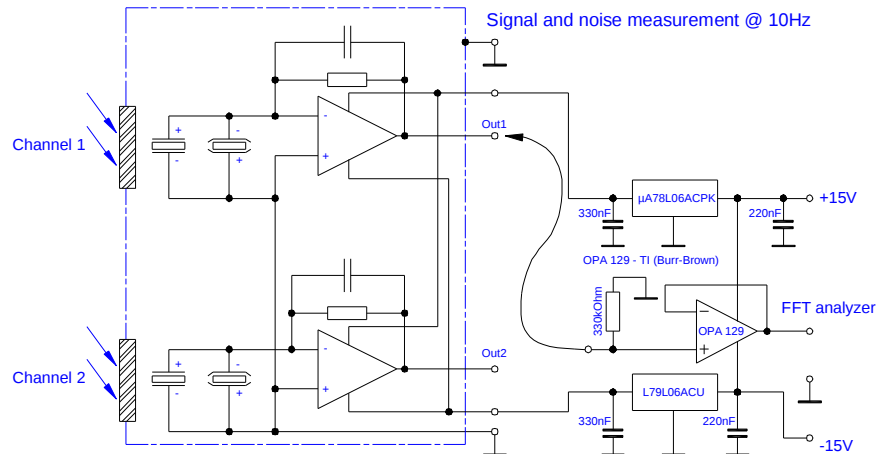


Multi-color Products

LMM-242-#

Dual channel pyroelectric multicolor detector
thermal compensated, CMOS preamplifier (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø9.5 mm, single channel ø3.5 mm
Element size / type	nom	2.0x2.0 mm² lithium-tantalate with black layer
Thermal time constant	typ	150 ms
Feedback resistor	nom	100 GOhm ±20%
Feedback capacitor	nom	0.2±0.1 pF
Polarity	nom	negative signal by positive IR flux change
Voltage Responsivity {500K, 10Hz, 25°C, without window}	min	90,000 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	45 µV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	4.2*10 ⁸ cmHz ^{1/2} /W
Acceleration response {5 ... 200Hz}	typ	300 µV/g; g=9.81m/s²
CMOS operational amplifier	nom	OpAmp2 (for characteristics see application note)
Supply voltage V ⁺ - V ⁻	max	16 V
Operating supply voltage V ⁺ / V ⁻		+2.2 ... 8.0 V / -2.2 ... -8.0 V
Recommended supply voltage	nom	V ⁺ = +5 V; V ⁻ = -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
Potential of detector case	nom	selectable potential between -8 ... +8V to Ground {EMC requires low-impedance coupling}
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 12th 2005

LMM-244-#

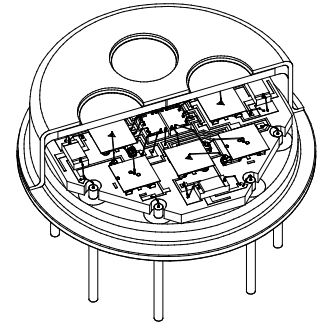
Quad channel pyroelectric multicolor detector
thermal compensated, CMOS preamplifier (PyroMid®)

Description: LMM-244-#

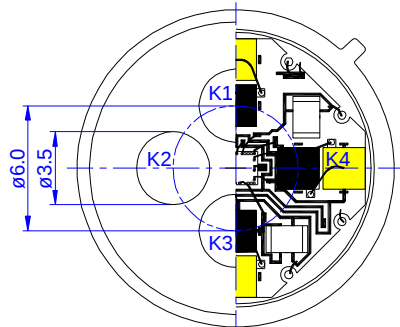
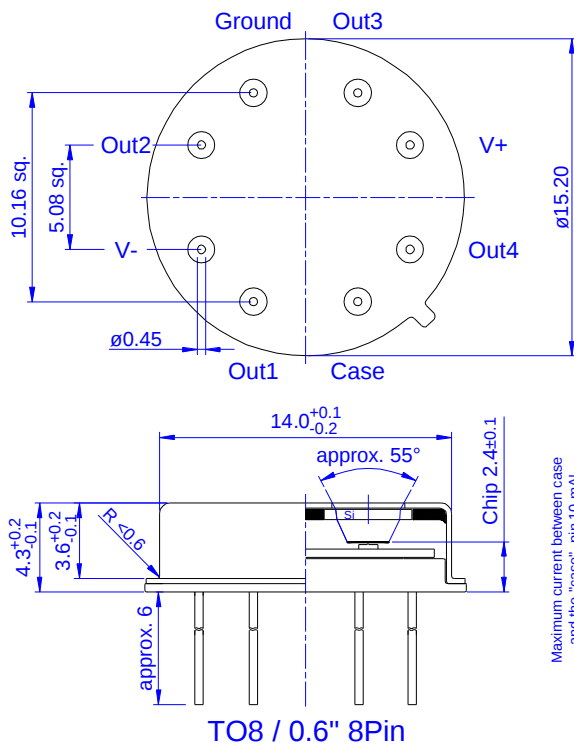
[# = extension code]

quad color, potential-free TO8 housing, thermal compensation, ultra low microphonic effect;
current mode with micro power OpAmp; feedback R 100GOhm $\pm 20\%$ // C 0.20 ± 0.1 pF;
very high gain

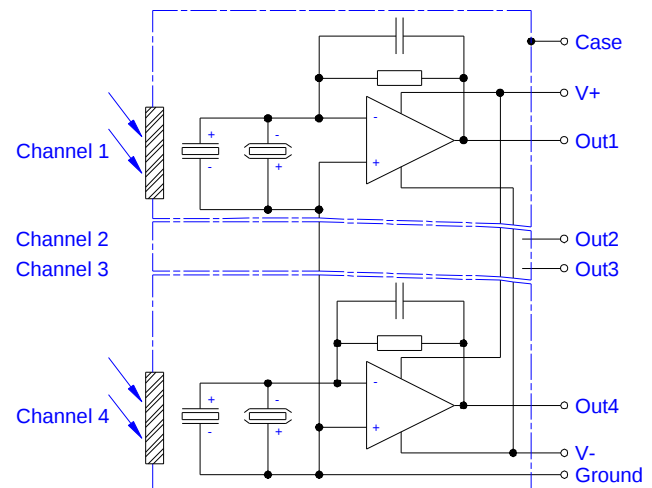
PyroMid® detectors are State-of-the-art, cost effective, multicolor detectors for virtually any infrared application.



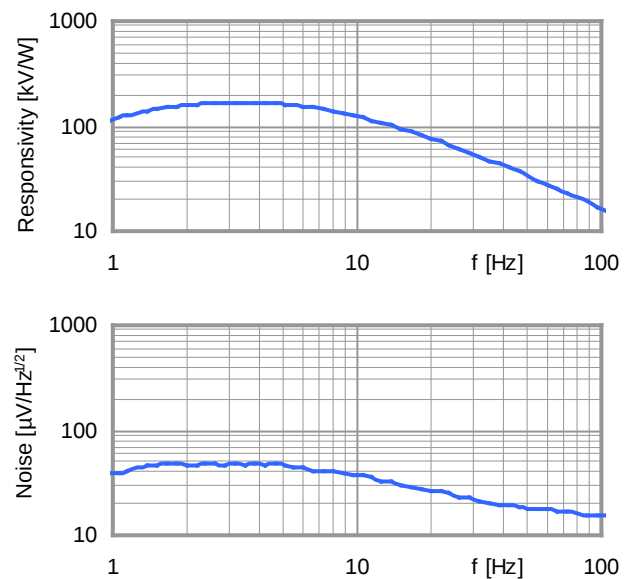
Housing:



Pin assignment:



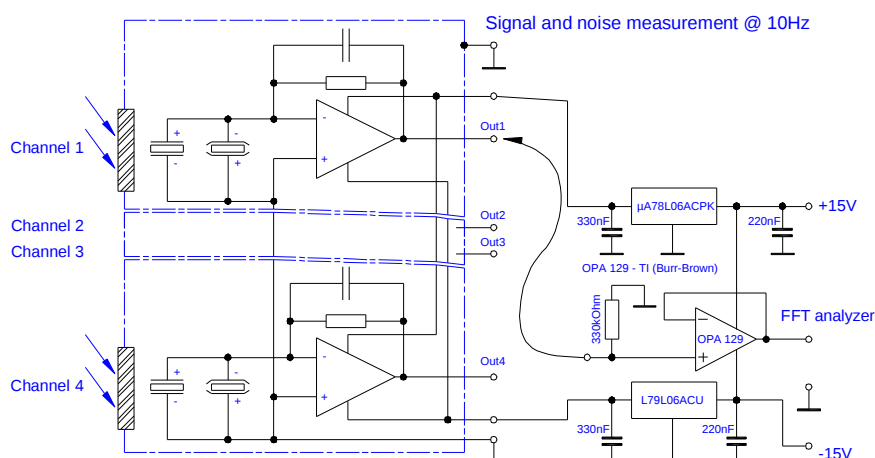
Frequency response:



LMM-244-#

Quad channel pyroelectric multicolor detector
thermal compensated, CMOS preamplifier (PyroMid®)

Test circuit:



Parameters:

Aperture size	nom	ø9.5 mm, single channel ø3.5 mm
Element size / type	nom	2.0x2.0 mm² lithium-tantalate with black layer
Thermal time constant	typ	150 ms
Feedback resistor	nom	100 GOhm ±20%
Feedback capacitor	nom	0.2±0.1 pF
Polarity	nom	negative signal by positive IR flux change
Voltage Responsivity {500K, 10Hz, 25°C, without window}	min	90,000 V/W
Noise density {10Hz, BW 1Hz, 25°C}	max	45 µV/Hz ^{1/2}
Detectivity {500K, 10Hz, 1Hz, 25°C, without window}	min	4.2*10 ⁸ cmHz ^{1/2} /W
Acceleration response {5 ... 200Hz}	typ	300 µV/g; g=9.81m/s²
CMOS operational amplifier	nom	OpAmp2 (for characteristics see application note)
Supply voltage V ⁺ - V ⁻	max	16 V
Operating supply voltage V ⁺ / V ⁻		+2.2 ... 8.0 V / -2.2 ... -8.0 V
Recommended supply voltage	nom	V ⁺ = +5 V; V ⁻ = -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
Potential of detector case	nom	selectable potential between -8 ... +8V to Ground {EMC requires low-impedance coupling}
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 12th 2005

Customer Information

Detector Identification

We are pleased to see for many years continued demand for our products. With that InfraTec is constantly looking at ways to improve production processes to increase efficiency and throughput whilst maintaining, or even increasing, our high quality standards.

One such improvement is the way in which we identify the detector with the part code and serial number engraved on the cap. This activity will now occur later in the production cycle, after the window or filter has been mounted in the cap. Thus, the engraving cannot be placed on the top of the cap next to the window or filter, but instead down the side of the cap, and both the part code and serial number will be close to each other.

This change will be implemented starting from September 2007. Please note that for TO18 housings the engraving has always been down the side of the cap due to insufficient space on the top. However, TO39 and TO8 packages will now benefit from this change, which can be seen in the illustration below.



TO39 - current engraving



TO39 - new engraving



TO8 - current engraving



TO8 - new engraving

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

© InfraTec GmbH, July 19th 2007
