

### Features and Benefits

- Dual-channel with integrated ASIC that supplies analog voltages
- Surface mountable ceramic leadless chip carrier, square width 5.0mm
- Operating range 2.7V to 5.5V , -20°C to 120°C
- Integrated linear temperature reference with a sensitivity of typical 15.5mV/°C
- Wide range of available filter types for different applications

### General / Electrical Specification

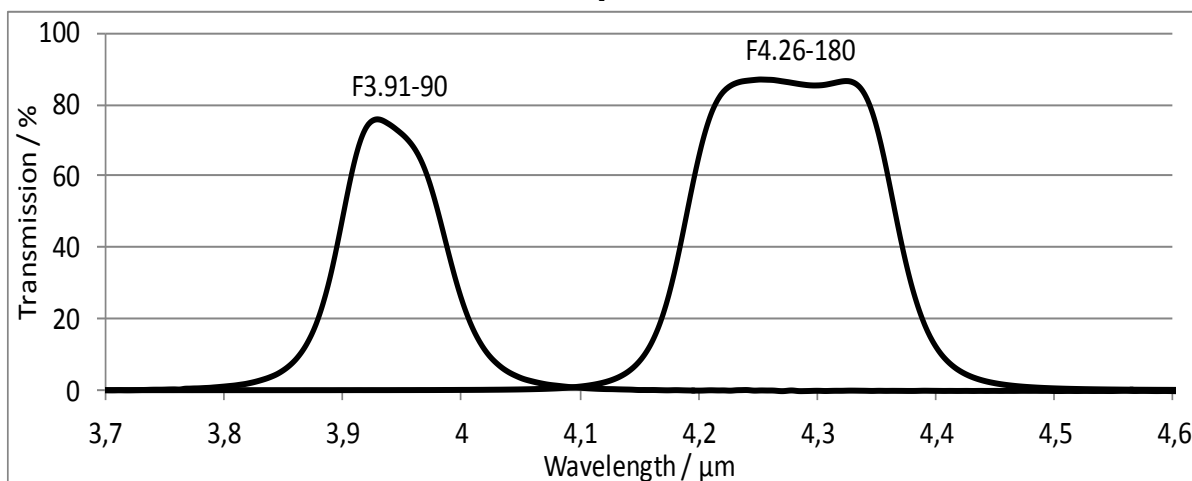
<i>Parameter</i>	<i>Typical Value</i>	<i>Unit</i>	<i>Condition</i>
Supply voltage VDD	(2.7).. 3 .. 5..(5.5)	V	+Vs
Supply voltage VSS/GND	0	V	-Vs , Ground
Supply current	2	mA	Without load
Open loop gain	90	dB	
Low pass frequency	240	Hz	ASIC
PSRR	>40	dB	
Output voltage range	0.15 .. (VDD-0.15)	V	
Start up time after POR	Max. 0.5	sec	Electrical start up
Noise voltage input related	45	nV/√Hz	Output TPO;
Absorbing area	1.2 x 1.2	mm <sup>2</sup>	Thermopile Chips
Voltage Sensitivity	38	V/W	Thermopile Chips
Voltage response	55	Vmm <sup>2</sup> / W	Thermopile Chips
Time constant	8	ms	
Sensor gain	4300 or 2150	V/V	TPO by factory on both channels
Output voltage at zero input	1.2 ±0.6 (±0.4)	V	TPO at gain 4300 (2150)
Temp. ref. voltage at 25°C	1.4 ±0.6	V	Output TRO
Sensitivity temp. reference	15.5±0.5	mV/°C	Linear ; Output TRO
Field of view	120	degree	each channel
Operating temperature	-20.. 120	°C	

### Filter Characteristics

Filter F1: F3.91-90					
Parameter	Limits			Units	Conditions
	Min	Typ.	Max		
Center wavelength	3.87	3.91	3.95	μm	CWL
Half power bandwidth	70	90	110	nm	HPB
HPB/CWL		2.3		%	
Peak transmittance	76			%	
Blocking		$T_{\text{average}} < 0.1\%$		%	from UV to band pass
		$T_{\text{peak}} < 1\%$		%	from UV to band pass
		$T_{\text{peak}} < 1\%$		%	from band pass to 8μm

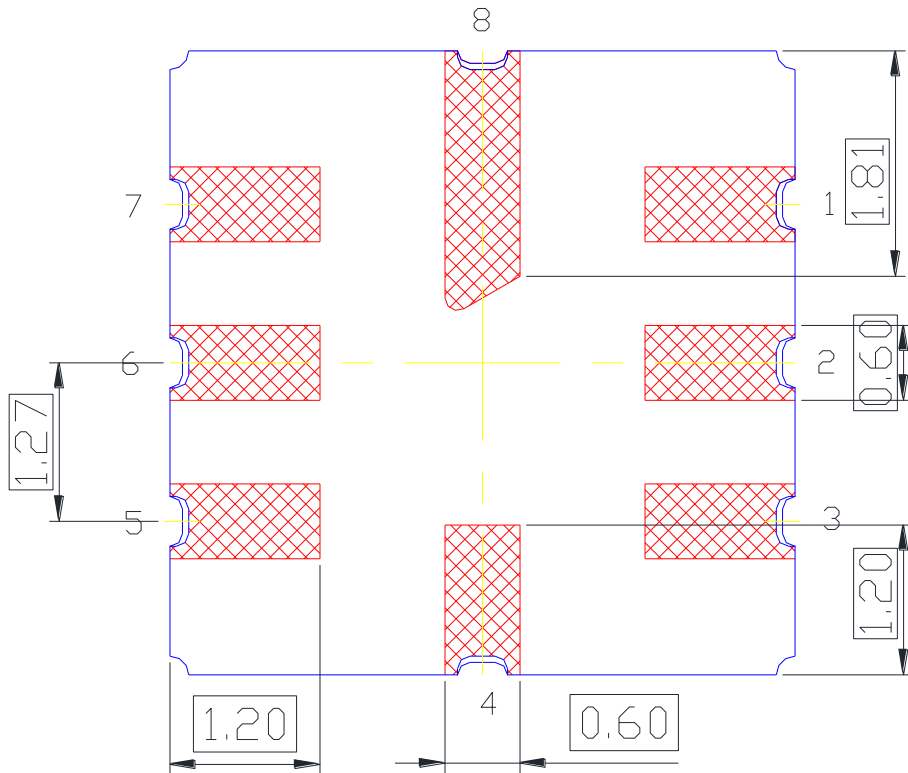
Filter F2: F4.26-180					
Parameter	Limits			Units	Conditions
	Min	Typ.	Max		
Center wavelength	4.21	4.26	4.31	μm	CWL
Half power bandwidth	160	180	200	nm	HPB
HPB/CWL		4.2		%	
Peak transmittance	73			%	
Blocking		$T_{\text{average}} < 0.1\%$		%	from UV to band pass
		$T_{\text{peak}} < 1\%$		%	from UV to band pass
		$T_{\text{peak}} < 1\%$		%	from band pass to 8μm

### Filter Sample Curve

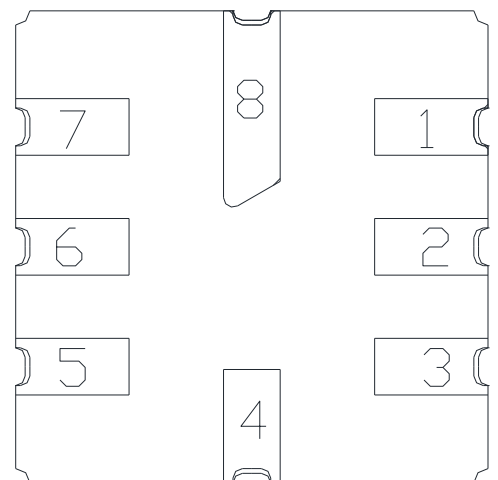




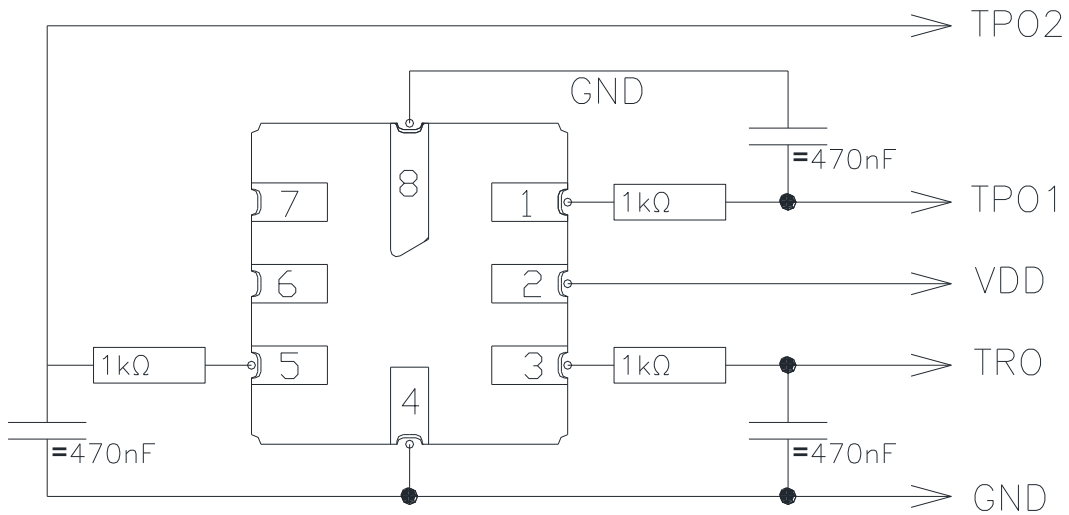
### Dimensions / Pin Assignment



Pin No.	Sym bol	Description
1	TPO1	Output thermopile channel F1 gain 4300 or 2150 by factory
2	VDD	Supply voltage
4 / 8	VSS/ GND	Ground (0V)
3	TRO	Linear temperature reference voltage
5	TPO2	Output thermopile channel F2 gain 4300 or 2150 by factory



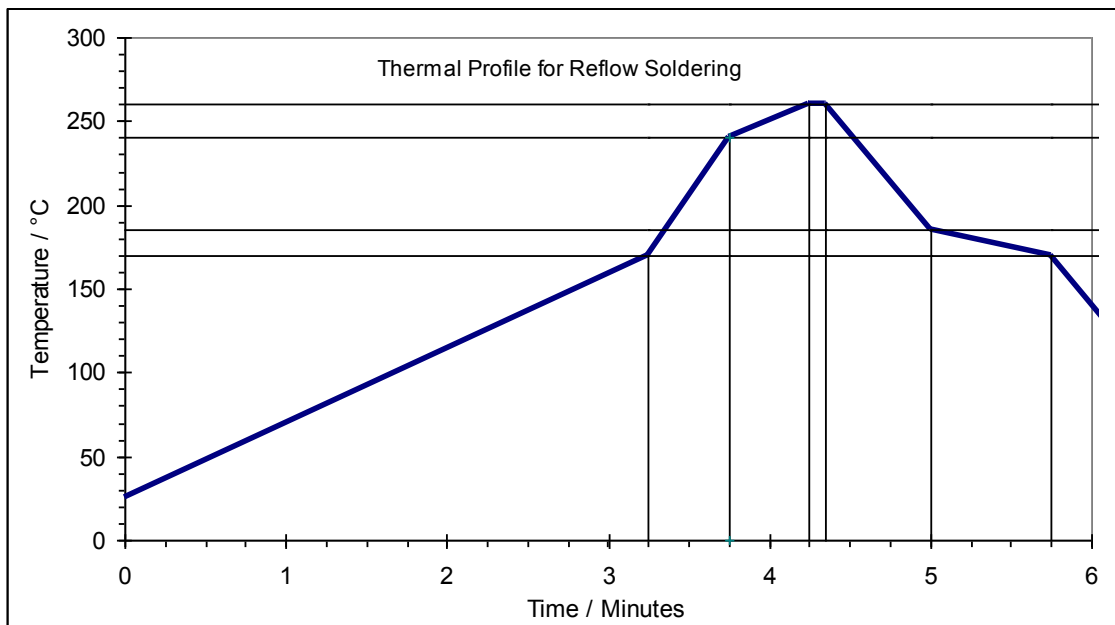
### Application Circuitry



Due to use of chopper-stabilized amplifiers residual ripples of chopping frequency can interfere on the outputs in the range of 20kHz.

Software filtering or for resistive loads of  $\geq 1M\Omega$  simple RC low pass filtering can be used to suppress the ripple. Sample circuitry is shown on above picture.

### Reflow Furnace Profile



Suitable for lead free soldering.

The shown thermal profile should not be exceeded or component damage may result.