ZTP-101L (Part No : 212001)

The thermopile sensor is used for non-contact surface temperature measuring. It is a voltage generating device and shows a stable response to DC radiation. The ZTP-101 model is consisted of thermo-elements, IR filter, device for temperature compensation(Thermistor) and hermetically sealed TO-5 package. The standard IR Filter is suitable to the spectral range above 5 um wave length. This thermopile sensor can provide the customer with optimal solution for each application.

Technical Data

PARAMETER	UNIT	VALUE	CONDITION
Chip Size	mm ²	3.0 x 3.0	
Diaphragm Size	mm ²	1.5 x 1.5	
Number of Couples		36	
Active Area	mm2	0.51 x 0.51	
Internal Resistance	kΩ	200±30%	@25°C
Resistance T.C	%/°C	< 0.10	
Responsivity	V/W	110±30%	500K, 1Hz
Responsivity T.C	%/°C	-0.11	Typical
Noise Voltage	nV rms	62	R.M.S, Typical
NEP	nW/√Hz	0.6	500K, 1Hz, Typical
Detectivity	cm√Hz/W	9.00E+07	500K, 1Hz, Typical
Time Constant	ms	22	500K, 1Hz, Typical
Operating Temperature	°C	-20 ~ 100	
Storage Temperature	°C	-40 ~ 120	
Thermistor Resistance	kΩ	10±3%	@25°C
Beta value	К	3970±1%	
Package Type		TO-5	





Fig.1 Dimension of Sensor



ZTP-101T (Part No : 213001)

The thermopile sensor is used for non-contact surface temperature measuring. It is a voltage generating device and shows a stable response to DC radiation. The ZTP-101 model is consisted of thermo-elements, IR filter, device for temperature compensation(Thermistor) and hermetically sealed TO-5 package. The standard IR Filter is suitable to the spectral range above 5 um wave length. This thermopile sensor can provide the customer with optimal solution for each application.

Technical Data

PARAMETER	UNIT	VALUE	CONDITION
Chip Size	mm ²	3.0 x 3.0	
Diaphragm Size	mm ²	1.5 x 1.5	
Number of Couples		36	
Active Area	mm2	0.51 x 0.51	
Internal Resistance	kΩ	200±30%	@25°C
Resistance T.C	%/°C	< 0.10	
Responsivity	V/W	110±30%	500K, 1Hz
Responsivity T.C	%/°C	-0.11	Typical
Noise Voltage	nV rms	62	R.M.S, Typical
NEP	nW/√Hz	0.6	500K, 1Hz, Typical
Detectivity	cm√Hz/W	9.00E+07	500K, 1Hz, Typical
Time Constant	ms	22	500K, 1Hz, Typical
Operating Temperature	°C	-20 ~ 100	
Storage Temperature	°C	-40 ~ 120	
Thermistor Resistance	kΩ	30±3%	@25°C
Beta value	К	3811±1%	
Package Type		TO-5	





Fig.1 Dimension of Sensor



ZTP-315 (Part No : 214001)

The thermopile sensor is used for non-contact surface temperature measuring. It is a voltage generating device and shows a stable response to DC radiation. The ZTP-315 model is consisted of thermo-elements, IR filter, device for temperature compensation(Thermistor) and hermetically sealed TO-5 package. This device adopted large chip and wide diaphragm in order to enhance sensitivity. The standard IR filter is suitable to the spectral range above 5 um wave length. This thermopile sensor can provide the customer with optimal solution for each application.

Technical Data

PARAMETER	UNIT	VALUE	CONDITION
Chip Size	mm ²	3.6 x 3.6	
Diaphragm Size	mm ²	2.6 x 2.6	
Number of Couples		68	
Active Area	mm2	1.3 x 1.3	
Internal Resistance	kΩ	50±30%	@25°C
Resistance T.C	%/°C	< 0.12	
Responsivity	V/W	32±30%	500K, 1Hz
Responsivity T.C	%/°C	-0.11	Typical
Noise Voltage	nV rms	30	R.M.S, Typical
NEP	nW/√Hz	0.94	500K, 1Hz, Typical
Detectivity	cm√Hz/W	1.38E+08	500K, 1Hz, Typical
Time Constant	ms	24	500K, 1Hz, Typical
Operating Temperature	°C	-20 ~ 100	
Storage Temperature	°C	-40 ~ 120	
Thermistor Resistance	kΩ	30±1%	@25℃
Beta value	К	3811±1%	
Package Type		TO-5	***************************************



Fig.1 Dimension of Sensor



ZTP-135 (Part No : 222001)



The thermopile sensor is used for non-contact surface temperature measuring. It is a voltage generating device and shows a stable response to DC radiation. The ZTP-135 model is consisted of the thermo-elements, the IR filter, the device for temperature compensation(Thermistor) and hermetically sealed TO-5 package. This device adopted small chip and wide diaphragm in order to enhance sensitivity. The standard IR filter is suitable to the spectral range above 5 um wave length. This thermopile sensor can provide the customer with optimal solution for each application.

Technical Data

PARAMETER	UNIT	VALUE	CONDITION
Chip Size	mm ²	1.8 x 1.8	
Diaphragm Size	mm ²	1.4 x 1.4	
Number of Couples		60	
Active Area	mm2	0.7 x 0.7	
Internal Resistance	kΩ	60±30%	@25℃
Resistance T.C	%/°C	< 0.12	
Responsivity	V/W	60±30%	500K, 1Hz
Responsivity T.C	%/°C	-0.1	Typical
Noise Voltage	nV rms	32	R.M.S, Typical
NEP	nW/√Hz	0.53	500K, 1Hz, Typical
Detectivity	cm√Hz/W	1.30E+08	500K, 1Hz, Typical
Time Constant	ms	25	500K, 1Hz, Typical
Operating Temperature	°C	-20 ~ 100	
Storage Temperature	°C	-40 ~ 120	
Thermistor Resistance	kΩ	10±3%	@25℃
Beta value	К	3970±1%	
Package Type		TO-5	





Fig.1 Dimension of Sensor



ZTP-135SR (Part No : 218001)

The thermopile sensor is used for non-contact surface temperature measuring. It is a voltage generating device and shows a stable response to DC radiation. The ZTP-135S model is consisted of thermo-elements, flat IR filter, device for temperature compensation(Thermistor) and hermetically sealed TO-46 package. This device adopted small chip and wide diaphragm in order to enhance sensitivity. The standard IR filter is suitable to the spectral range above 5 um wave length. This thermopile sensor can provide the customer with optimal solution for each application.

Technical Data

PARAMETER	UNIT	VALUE	CONDITION
Chip Size	mm ²	1.8 x 1.8	
Diaphragm Size	mm ²	1.4 x 1.4	
Number of Couples		60	
Active Area	mm2	0.7 x 0.7	
Internal Resistance	kΩ	60±30%	@25℃
Resistance T.C	%/°C	< 0.12	
Responsivity	V/W	62±30%	500K, 1Hz
Responsivity T.C	%/°C	-0.1	Typical
Noise Voltage	nV rms	32	R.M.S, Typical
NEP	nW/√Hz	0.51	500K, 1Hz, Typical
Detectivity	cm√Hz/W	1.35E+08	500K, 1Hz, Typical
Time Constant	ms	25	500K, 1Hz, Typical
Operating Temperature	°C	-20 ~ 100	
Storage Temperature	°C	-40 ~ 120	
Thermistor Resistance	kΩ	100±3%	@25℃
Beta value	К	3960±1%	
Package Type		TO-46	







ZTP-135H (Part No : 225001)

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The thermopile sensor is used for non-contact surface temperature measuring. It is a voltage generating device and shows a stable response to DC radiation. The ZTP-135 model is consisted of the thermo-elements, the IR filter, the device for temperature compensation(Thermistor) and hermetically sealed TO-5 package. This device adopted small chip and wide diaphragm in order to enhance sensitivity. The standard IR filter is suitable to the spectral range above 5 um wave length. This thermopile sensor can provide the customer with optimal solution for each application.

Technical Data

PARAMETER	UNIT	VALUE	CONDITION
Chip Size	mm ²	1.8 x 1.8	
Diaphragm Size	mm ²	1.4 x 1.4	
Number of Couples		60	
Active Area	mm2	0.7 x 0.7	
Internal Resistance	kΩ	60±30%	@25℃
Resistance T.C	%/°C	< 0.12	
Responsivity	V/W	58±30%	500K, 1Hz
Responsivity T.C	%/°C	-0.1	Typical
Noise Voltage	nV rms	32	R.M.S, Typical
NEP	nW/√Hz	0.55	500K, 1Hz, Typical
Detectivity	cm√Hz/W	1.27E+08	500K, 1Hz, Typical
Time Constant	ms	25	500K, 1Hz, Typical
Operating Temperature	°C	-20 ~ 100	
Storage Temperature	°C	-40 ~ 120	
Thermistor Resistance	kΩ	100±3%	@25℃
Beta value	K	3960±1%	
Package Type		<u>TO-5</u>	



Fig.1 Dimension of Sensor



ZTP-115 (Part No : 221001)

The thermopile sensor is used for non-contact surface temperature measuring. It is a voltage generating device and shows a stable response to DC radiation. The ZTP-115 model is consisted of thermo-elements, IR filter, device for temperature compensation(Thermistor) and hermetically sealed TO-5 package. The standard IR Filter is suitable to the spectral range above 5 um wave length. This thermopile sensor can provide the customer with optimal solution for each application.

Technical Data

PARAMETER	UNIT	VALUE	CONDITION
Chip Size	mm ²	1.8 x 1.8	
Diaphragm Size	mm ²	1.0 x 1.0	
Number of Couples		52	
Active Area	mm2	0.5 x 0.5	
Internal Resistance	kΩ	50±30%	@25°C
Resistance T.C	%/°C	< 0.15	
Responsivity	V/W	60±30%	500K, 1Hz
Responsivity T.C	%/°C	-0.1	Typical
Noise Voltage	nV rms	30	R.M.S, Typical
NEP	nW/√Hz	0.5	500K, 1Hz, Typical
Detectivity	cm√Hz/W	1.00E+08	500K, 1Hz, Typical
Time Constant	ms	20	500K, 1Hz, Typical
Operating Temperature	°C	-20 ~ 100	
Storage Temperature	°C	-40 ~ 120	
Thermistor Resistance	kΩ	10±3%	@25°C
Beta value	K	3970±1%	
Package Type		TO-5	





Fig.1 Dimension of Sensor

Fig.2 Transmission of filter



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ZTP-25A (Part No : 313001)



The thermopile sensor is used for non-contact surface temperature measuring. It is a voltage generating device and shows a stable response to DC radiation. The ZTP-25A model is consisted of 4 thermo-elements, IR filter, device for temperature compensation(Thermistor) and hermetically sealed TO-5 package.

Technical Data

PARAMETER	UNIT	VALUE	CONDITION
Chip Size	mm ²	1.9 x 4.0	
Diaphragm Size	mm ²	1.0 x 2.6	
Number of Couples each element		46	
Active Area	mm2	0.5 x 0.5	
Internal Resistance	kΩ	50±30%	@25℃
Resistance T.C	%/°C	< 0.13	
Responsivity	V/W	55±30%	500K, 1Hz
Responsivity T.C	%/°C	-0.12	Typical
Noise Voltage	nV rms	32	R.M.S, Typical
NEP	nW/√Hz	0.58	500K, 1Hz, Typical
Detectivity	cm√Hz/W	8.60E+07	500K, 1Hz, Typical
Time Constant	ms	25	500K, 1Hz, Typical
Operating Temperature	°C	-20 ~ 100	
Storage Temperature	°C	-40 ~ 120	
Thermistor Resistance	kΩ	10±3%	@25℃
Beta value	K	3970±1%	
Package Type		TO-5	



Fig.1 Dimension of Sensor

Fig.2 FOV of ZTP-25A



ZTP-115M (Part No : 413001)

This model presents the calibrated output signal through the ambient temperature compensation and with the optics(reflector). And also, this has a compatibility with the customer's device without the recalibration of the device that is using. Three wire connection is necessary for operation: Output voltage, single supply voltage and ground. The field of view of ZTP-115M is about ± 5.5 degree for 50% normalized output. The total size of the module PCB is 17 X 33 mm².

This thermopile sensor module can provide the customer with optimal solution for each application.

Technical Data

- Supply Voltage : Single Supply (+5V)
- Supply Current : Typical 2.7 mA
- Response Time : 0.3 ~ 0.6 second
- Range of Measuring Temperature
 - :-40℃ ~ 145℃
- Operating Temperature : -20°C ~ 100°C
- Storage Temperature : 20°C ~ 120°C
- Thermopile Sensor : ZTP-115







Fig.2 Field of View





Fig. 3 Dimension of the Sensor Module



ZTP-25ASM (Part No : 411001)

This model presents the temperature compensated quad outputs by two control signals with optics (Silicon Lens). It can also provide a compatibility with the customer's device Without the recalibration of the device that is using. Five-wire connections are necessary to operate: one for output signal, two signals for controlling the sensing elements, single power supply and ground. The field of view of each element of ZTP-25ASM is about ± 4 degree for 50% normalized output and the peak to peak of each element is about 8 degree. The total size is only 30 X 40 mm². This thermopile sensor module can provide the customer with optimal solution for each application.

Technical Data

- Supply Voltage : Single Supply (+5V)
- Supply Current : Typical 3.9mA
- Response Time : Max 35 ms
- Range of Measuring Temperature
 - :-50℃ ~ 145℃
- Operating Temperature : -20°C ~ 100°C
- Storage Temperature : 20°C ~ 120°C
- Thermopile Sensor : ZTP-25A









Fig.2 Field of View for the Sensor Module

Fig. 3 Dimension of the Sensor Module



