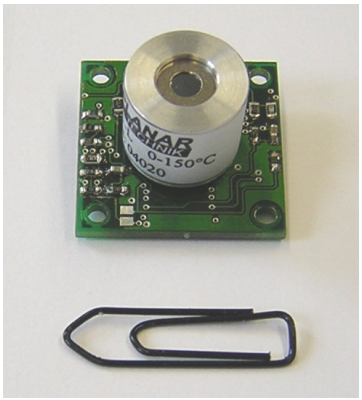
Linear array thermopile system with digital output

TSEM 0108-L



Function principle:
Thermopiles transform incoming heat radiation from an object to an outgoing voltage, which is correlated to the object temperature. This IR sensor is based on an 8 element linear array thermopile chip. The integrated silicon lens generates 8 individual FOV (field of view) to measure the temperature profile along a straight line at 8 separate points. The can integrated multiplexer connects selected pixels to the output channel. The object temperature is calculated digitally by a microcontroller. The calculated temperature are transmitted by an I^2C output interface. The system is calibrated and compensated for ambient temperature effects and can be adapted for different emissivity factors.

Applications

- Home appliances (Microwave oven)
- Medical (Skin temperature)
- Automotive (Air conditioning)
- Security (Presence detection)

Advantages

- Small size
- Easy to integrate
- Low cost unit
- Low vibration sensitivity

Specification

	Conditions	Min	Typ	Max	Unit
Object temperature range[1)]		*0*		*+150*	*°C*
Accuracy			*2*		*% of FS*
Resolution (digital)			*0.5*		*°C*
Data output rate			*10*		*Hz*
FOV			*20*		*°*
Power voltage supply		*4,75*	*5*	*5,25*	*VDC*
Current consumption			*6*		*mA*
Operation temperature range		*0*		*+85*	*°C*
Storage temperature range		*-40*		*+105*	*°C*
Dimensions	*W x D x H*	*25 x 25 x 19*			*mm*

[1)] Subject to change

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