

General Description

The STP10DF59G6 comprising a new type CMOS compatible thermopile sensor chip features good sensitivity, small temperature coefficient of sensitivity as well as high reproducibility and reliability. Embedded 24bit high-precision low-noise ADC unit and DSP high-speed conversion operation unit. The all digital IIC interface supports standard and high-speed modes to facilitate the access of various systems. The device can enter low-power sleep mode through instructions and has wake-up function.

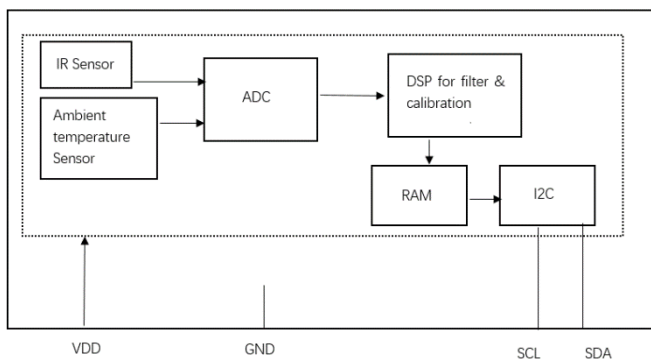
Features and Benefits

- Full Digital Output With IIC Interface
- Standard TO-5 package
- Operating Temperature Range: -40°C to $+125^{\circ}\text{C}$
- Anti-electromagnetic interference
- Less Than $1.5\ \mu\text{A}$ Low Power In Sleep Mode and 3.0 V to 6.0 V Wide Supply Voltage Range
- Integrated digital temperature reference with high-precision

Applications

- Consumer electronic
- Home Appliance

Block Diagram

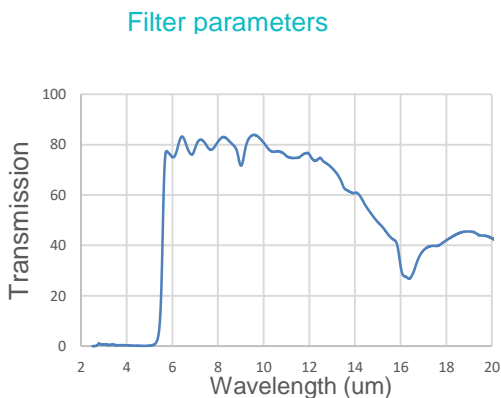
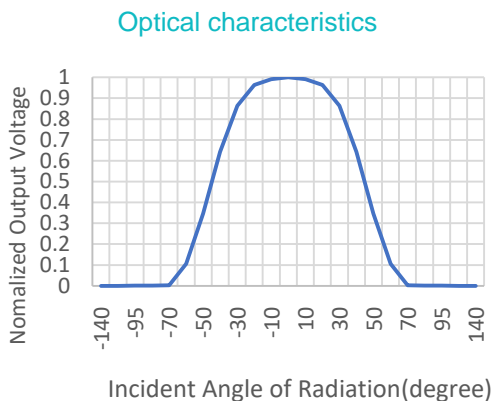


Electrical Characteristics (Temperature is $+25^{\circ}\text{C}$, unless otherwise specified.)

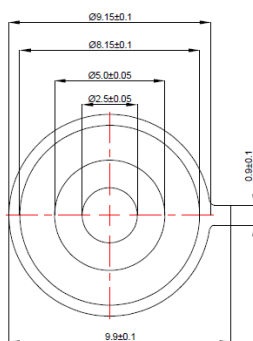
DC characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{DD}	Supply voltage	Normal mode operation	3.0	3.3	6.0	V
V_{DF}	Supply voltage	FUSE program		6		V
V_{SS}	Supply voltage			0		
I_{DD}	Supply current	Normal mode		1.5		mA
I_{sleep}		IDLE mode		1.5		μA
V_{IH}			1.4			V
V_{IL}					0.3	V
Speed	I2C serial clock frequency		20	100	400	KHz

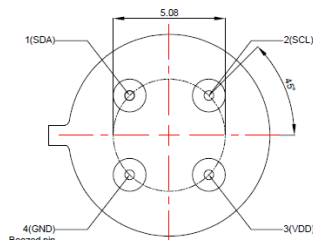
Optical Characteristics



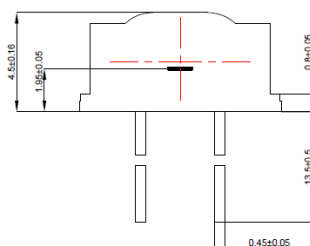
Pin Definitions and Descriptions



Top View



Bottom View



Side View

Symbol	Pin	Pin Type	Conditions
SDA	1	IO	I2C serial data input/output, internally pull up by 500K ohm resister
SCL	2	I	I2C serial clock input, internally pull up by 500K ohm resister
VDD	3	P	Power supply input pin, it should connect a 100nF to 1.0uF ceramic cap at least to ground.
GND	4	P	Connect to GND

Revision History

Revision Number	Date	Notes
Rev1	2022/12/09	Initial Release