YY-MDB

Digital Infrared Temperature Sensor

General Description

The YY-MDB is a digital infrared thermopile sensor that facilitates the non-contact temperature measurement. Housed in a small TO-5 package with digital interface, the sensor integrates thermopile sensor, amplifier, A/D, DSP, MUX and communication protocol.
The YY-MDB is factory calibrated in wide temperature ranges: -40℃~85℃ for the ambient temperature and -20℃~300℃ for the object temperature. The measured temperature value is the average temperature of all objects in the Field of View of the sensor.
The YY-MDB offers a standard accuracy of ±2% around room temperatures. The digital platform supports easy integration. Its low power budget makes it ideal for battery powered applications, including household electrical appliances, environmental monitoring, HVAC, smart home/building control and IOT.

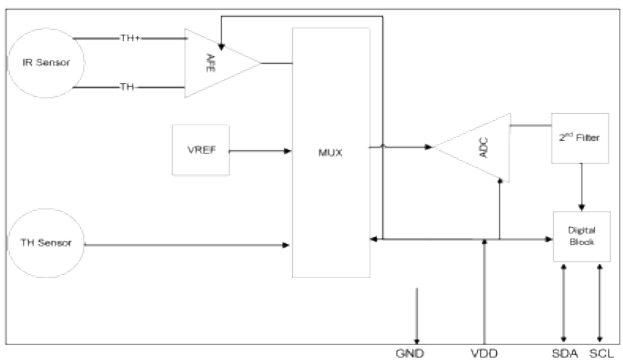
Features and Benefits

- Digital temperature output
- Factory calibrated in wide temperature ranges
- Communication protocol and Easy integration
- Reduced system component
- 2.7V to 5.5V Wide Supply Voltage Range
- Operating Temperature Range: −40°C to +85°C

Applications

- Consumer electronic
- Household electrical appliances
- HVAC
- IOT

Block Diagram(Optional)

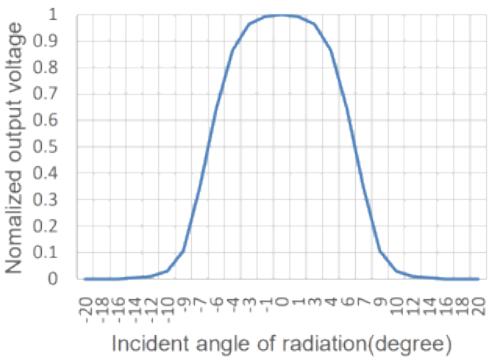


Electrical Characteristics(VS = 5.0V, TA = +25℃, unless otherwise noted.)

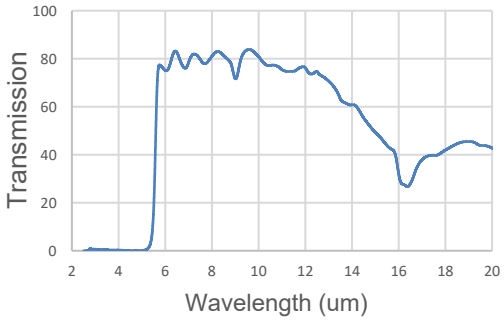
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{DD}	Supply voltage		2.7	3.3	5.0	V
I_{DD}	Supply current	Continuous mode		1		mA
		Sleep Mode		2.8		μA
T_{obj}	Object temperature range		-20	-	300	℃
T_{Res}	Resolution of reading			0.1		℃
FOV	Field of View		12	13	15	Deg
I^2S	Interface speed			50		kHz
SA	Slave address			0x20		
DRR	Data refresh rate			1		Hz
I_{leak}	SCL,SDA Leakage			0.1		μA
	SDA Output logic low	IOL=3 mA			VDD*0.2	V
	SDA Output logic high	IOH=-50 uA	VDD*0.9			V
	SCL,SDA Input logic low				VDD*0.2	V
	SCL,SDA Input logic high		VDD*0.8			V

Optical Characteristics

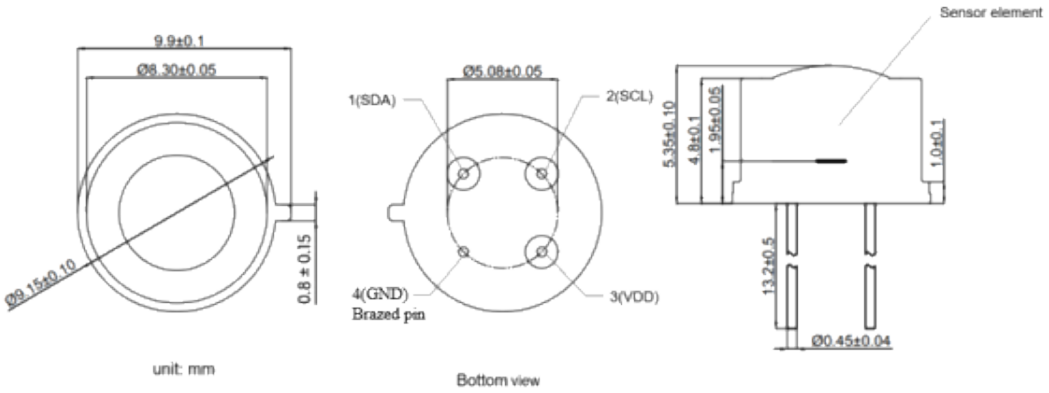
Optical characteristics



Filter parameters



Mechanical Drawings



Pin Definitions and Descriptions

Pin Name	Pin	Pin Type	Functions description
SDA	1	IO	IIC Serial Data Input/Output
SCL	2	IO	IIC Serial Clock Input/Output
VDD	3	P	Connect to VDD
GND	4	P	Connect to GND

Revision History

Revision Number	Release Date	Description
Rev1	2021/4/30	Initial Release
Rev2	2022/3/18	Add filter parameters cutline.