D6T

MEMS Thermal Sensors

High Sensitivity Enables Detection of Stationary Human Presence

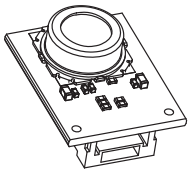
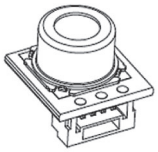
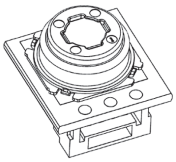
- **OMRON's unique MEMS and ASIC technology achieve a high SNR.**
- **Superior noise immunity with a digital output.**
- **High-precision area temperature detection with low cross-talk field of view characteristics.**

RoHS Compliant

Refer to *Safety Precautions* on page 6.

Ordering Information

Thermal Sensors

Element type	Model	Shape
4×4	**D6T-44L-06**	
1×8	**D6T-8L-09**	
1×1	**D6T-1A-01**	
	D6T-1A-02	

Accessories (Sold separately)

Type	Model
Cable Harness	**D6T-HARNESS-02**

Ratings, Specifications, and Functions

Ratings

Item / Model	D6T-44L-06	D6T-8L-09	D6T-1A-01	D6T-1A-02
Power supply voltage	4.5 to 5.5 VDC			
Storage temperature range	-10 to 60°C	-20 to 80°C	-20 to 80°C	-40 to 80°C
	(with no icing or condensation)			
Operating temperature range	0 to 50°C	0 to 60°C	0 to 60°C	-40 to 80°C
	(with no icing or condensation)			
Storage humidity range	85% max.	95% max.	95% max.	95% max.
	(with no icing or condensation)			
Operating humidity range	20% to 85%	20% to 95%	20% to 95%	20% to 95%
	(with no icing or condensation)			

Characteristics

Item	Model	D6T-44L-06	D6T-8L-09	D6T-1A-01	D6T-1A-02
View angle *1	X direction	44.2°	54.5°	58.0°	26.5°
	Y direction	45.7°	5.5°	58.0°	26.5°
Object temperature output accuracy *2	Accuracy 1	±1.5°C max. Measurement conditions: Vcc = 5.0 V (1) Tx = 25°C, Ta = 25°C (2) Tx = 45°C, Ta = 25°C (3) Tx = 45°C, Ta = 45°C			
	Accuracy 2	±3.0°C max. Measurement conditions: Vcc = 5.0 V (4) Tx = 25°C, Ta = 45°C			
Current consumption		5 mA typical		3.5 mA typical	

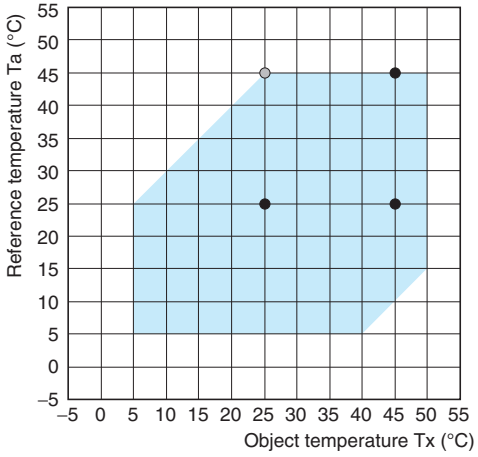
Functions

Item	Model	D6T-44L-06	D6T-8L-09	D6T-1A-01	D6T-1A-02
Object temperature detection range *2		5 to 50°C	5 to 50°C	5 to 50°C	-40 to 80°C
Reference temperature detection range *2		5 to 45°C	5 to 45°C	5 to 45°C	-40 to 80°C
Output specifications		Digital values that correspond to the object temperature (Tx) and reference temperature (Ta) are output from a serial communications port.			
Output form		Binary code (10 times the detected temperature (°C))			
Communications form		I2C compliant			
Temperature resolution (NETD) *3		0.06°C	0.03°C	0.02°C	0.06°C

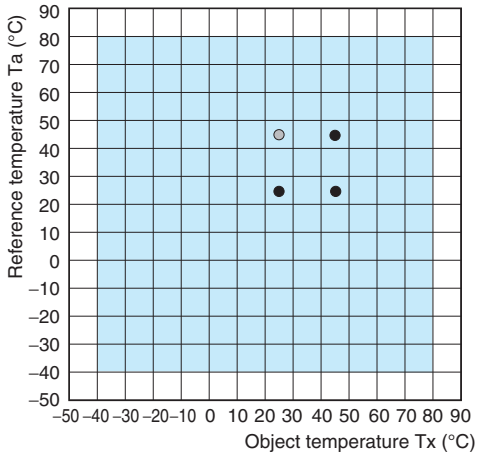
*1. Refer to *Field of View Characteristics*.
*2. Refer to *Object Temperature Detection Range*.
*3. Reference data

Object Temperature Detection Range

D6T-44L-06, D6T-8L-09, D6T-1A-01



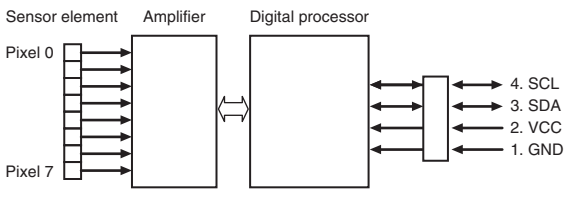
D6T-1A-02



● : Inspection point for accuracy 1
○ : Inspection point for accuracy 2
: Object temperature detection range

Connections

Thermal Sensor Configuration Diagram



Note: The 4×4 type has pixels 0 to 15.
The 1×1 type has pixel 0.

Terminal Arrangement

Terminal	Name	Function	Remarks
1	GND	Ground	
2	VCC	Positive power supply voltage input	
3	SDA	Serial data I/O line	Connect the open-drain SDA terminal to a pull-up resistor.
4	SCL	Serial clock input	Connect the open-drain SCL terminal to a pull-up resistor.