

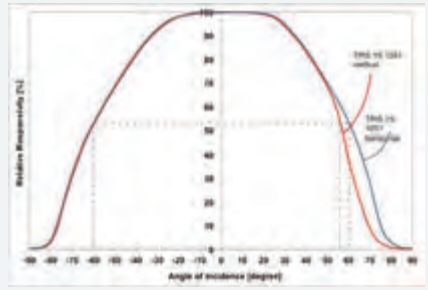
SMD Thermopile Sensor DigiPile™

For Non-Contact Temperature Measurement

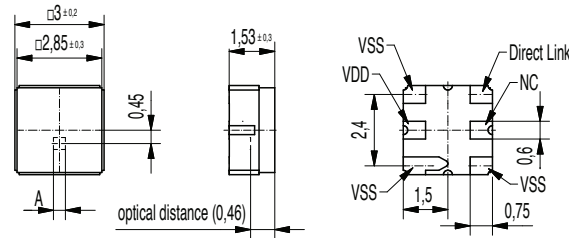
TPiS 1S 1051, TPiS 1S 1252 – Thermopile Sensor with Digital Output



Field of View TPiS 1S 1051

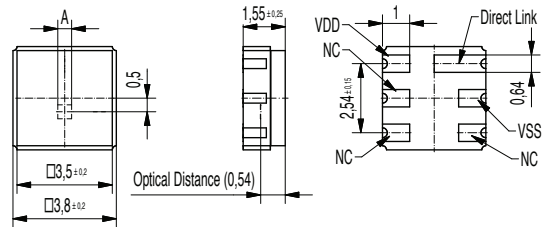
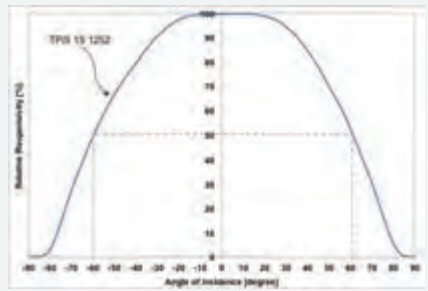


The new family of DigiPile is extended to SMD housings with the two types TPiS 1S 1252, and TPiS 1S 1051. With TPiS 1S 1051 we provide the smallest housing of Thermopile and the smallest thermopile chip. With TPiS 1S 1252 the housing is slightly larger due to a high sensitivity thermopile chip built in. The signal preparation of both types is equivalent to those versions in TO type housings.



TPiS 1S 1051

Field of View TPiS 1S 1252



TPiS 1S 1252

DigiPile™

Parameter	Symbol	TPiS 1S 1252	TPiS 1S 1051	Unit	Remarks / Conditions
Operating Conditions					
Operating Voltage	V _{DD}	2,4...3,6	2,4...3,6	V	
Supply Current	I _{DD}	11...15	11...15	µA	V _{DD} = 3.3 V
Operating Temperature	T _o	-20...70	-20...70	°C	"parameters may vary from specified values with temperature dependence."
Storage Temperature	T _s	-40...100	-40...100	°C	Avoid storage in humid environment.
Sensitive Area	A	0,51 x 0,51	0,4 x 0,4	mm ²	Absorber area
Sensitivity of TP	Dcounts / ΔT	400	210	counts/K	T _{obj} = 40°C, T _{amb} = 25°C
		530	280	counts/K	T _{obj} = 100°C, T _{amb} = 25°C
Noise of TP		8	8	counts	T _{obj} = 40°C, T _{amb} = 25°C
Time Constant	t	45	15	ms	
Ambient Temperature sensor					
Sensitivity of T _{amb}		90	90	counts/K	Linear for T _{amb} from 0°C to 90°C
Count @ T _{amb} = 25°C		7000...9400	7000...9400	counts	Range
Optical Characteristics					
Field of View		120	120 / 116	Degree	
Optical Axis		+/- 10	+/- 10	Degree	At 50% intensity points
Electrical Characteristics					
ADC Resolution T _{obj}		17	17	Bits	Max Count = 2 ¹⁷
ADC Resolution T _{amb}		14	14	Bits	Max Count = 2 ¹⁴
ADC Sensitivity of T _{obj}		0,7...0,9	0,7...0,9	µV/count	
ADC Offset T _{obj}		64000...65000	64000...65000	counts	Range
Input Low Voltage	V _{IL}	0,2 V _{DD}	0,2 V _{DD}	V	
Input High Voltage	V _{IH}	0,8 V _{DD}	0,8 V _{DD}	V	
Pull Down Current		200	200	µA	Direct link pin to V _{DD}
Pull Up / Down Current		130	130	µA	Direct link pin to V _{SS}
LPF Cut-Off Frequency		8	8	Hz	