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Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

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TS318-11C55

Thermopile Sensor

SPECIFICATIONS

Thermopile IR-Sensor For Contactless Temperature Measurement Single Element Small Package for Ear Thermometer High Signal Flat Filter Accurate Reference Sensor

Thermopiles are mainly used for contactless temperature measurement in many applications. Their function is to transfer the heat radiation emitted from the objects into a voltage output.

FEATURES

High Signal NTC Reference Sensor Small TO-18 Package 5.5µm Long Wave Pass Filter

APPLICATIONS

Medical Ear Thermometer

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Typical	Max	Unit	Description
Storage Temperature	Ts	-20	+20	+85	°C	permanent
Storage Temperature	Ts	-20	+20	+100	°C	non permanent

PERFORMANCE SPECS

Parameter	Symbol	Value	Unit	Condition
Operating Ambient Temperature	TAmb	-20 to +85	°C	permanent
Operating Ambient Temperature	T _{Amb}	-20 to +100	°C	non permanent
Package		TO-18		
Absorber Area	А	0.8 × 0.8	mm ²	
Thermopile Resistance	Rtp	70 ± 30	kΩ	$T_{Amb} = +25^{\circ}C$
Temperature Coefficient of Thermopile Resistance	TCRTP	-0.06 ± 0.04	%/K	$T_{Amb} = +25^{\circ}C \text{ to } +75^{\circ}C$
Voltage Response	V _{TP}	8.4 ± 2.1	mV	$T_{Amb} = +25^{\circ}C, T_{Obj} = +100^{\circ}C,$ DC, totally filled field of view
Temperature Coefficient of Voltage Response	TCVTP	-0.45 ± 0.08	%/K	T_{Amb} = +25°C to +75°C
Noise Equivalent Voltage	NEV	34	nV/Hz½	$T_{Amb} = +25^{\circ}C$
Rise Time	τ63	12 ± 5	ms	
Ambient Temperature Sensor		NTC		
Ambient Temperature Sensor Resistance	RNTC	100 ± 5	kΩ	T _{Amb} = +25°C
Beta Value of NTC	β-Value	3955 ±0.3%	K	$T_{Amb} = 0^{\circ}C \text{ to } +50^{\circ}C$

TYPICAL PERFORMANCE CURVES





OPTICAL CHARACTERISTICS

Parameter	Symbol	Value	Unit	Description
Field of View	FOV	110	deg	at 50% of maximum signal



FILTER CHARACTERISTICS

Parameter	Symbol	Value	Unit	Description
Transmission Range	LWP	≥ 5.5	μm	Long Wave Pass
Transmission	T7.5 13.5μm	≥ 77.0	%	at 7.5 13.5μm
Transmission	Tavg ≤4.0µm	<0.1	%	Average ≤4.0µm
Blocking Average	TAVG 4.0 5.0 μm	<0.5	%	Average 4.0 5.0 μm
Transmission Blocking Absolute	T _{ABS} ≤4.0µm	<1.0	%	Absolute ≤4.0µm



Figure 3: Filter transmission curve

ELECTRICAL CONNECTIONS





MECHANICAL DIMENSIONS



Figure 5: Mechanical dimensions of thermopile

ORDERING INFORMATION

Part Descripton	TS318-11C55
Part No.	G-TPCO-032

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