Absolute Maximum Ratings

The absolute maximum ratings are stress ratings only. Stresses greater than those listed below can cause permanent damage to the device. Functional operation of the FS1012 at absolute maximum ratings is not implied. Exposure to absolute maximum rating conditions may affect device reliability.

Table 2. Absolute Maximum Ratings

Symbol	Parameter	Conditions	Minimum	Maximum	Units
V_H	Heater Voltage Supply			5.6	V
T_{STOR}	Storage Temperature		-50	130	°C

Operating Conditions

Table 3. Recommended Operating Conditions

Symbol	Parameter	Minimum	Typical	Maximum	Units
T_{AMB}	Ambient Operating Temperature[a]	0		85	°C
I_{HTR_CC}	Heater Driving Current – Constant Current[a]		10	20	mA
V_{HTR_CV}	Heater Driving Voltage – Constant Voltage[a]		3	5.6	V

[a] Sensor specifications are tested at the wafer die level.

Electrical Characteristics

Table 4. Electrical Characteristics

Note: See important notes at the end of the table.

Symbol	Parameter	Conditions	Minimum	Typical	Maximum	Units
R_H	Heater Resistor[a]		230	290	400	Ω
$\propto_{\_HTR}$	Heater Temperature Coefficient of Resistance[a]			300		ppm/°C
V_{TP_OUT}	Thermopile Output[a]	3V driving voltage, in air, 20°C, no flow	30	35	60	mV
R_{TP}	Thermopile Resistance[a]	20°C	100	210	300	KΩ
$V_{TP\_OUTDIFF}$	Thermopile Differential Output[a]	3V driving voltage, in air, 20°C, no flow	-1	0	1	mV
t_{RESP}	Response Time				2	ms

Symbol	Parameter	Conditions	Minimum	Typical	Maximum	Units
Standard Gas Flow Range [b], [c]						
	Gas Flow	FS1012-1020-NG	0		2 (2000)	SLPM (SCCM)
		FS1012-1100-NG	0		10 (10000)	SLPM (SCCM)
Standard Liquid Flow Range [b], [c]						
	Liquid Flow	FS1012-1001-LQ	0		0.5 (500)	SLPM (SCCM)
		FS1012-1002-LQ	0		1.0 (1000)	SLPM (SCCM)

[a] Sensor specifications are tested at the wafer die level.

[b] SLPM: Standard liter per minute.

[c] SCCM: Standard cubic centimeter per minute.