

MS5840-02BA

Low profile, gel-filled, ultra-compact watertight pressure sensor, with stainless steel cap

PERFORMANCE SPECIFICATIONS (CONTINUED)**PRESSURE OUTPUT CHARACTERISTICS ($V_{DD} = 3\text{ V}$, $T = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)**

Parameter	Conditions		Min.	Typ.	Max	Unit
Operating Pressure Range	P_{range}		300		1200	mbar
Extended Pressure Range	P_{ext}	Linear Range of ADC	10		2000	mbar
Relative Accuracy ^{(1) (4)}	600...1000 mbar, at 20°C		-0.5		+0.5	mbar
	300...1100 mbar, 0...60°C		-2		+2	
	300...1100 mbar, -20...85°C		-4		+4	
Resolution RMS	OSR	8192		0.016	mbar	
		4096		0.021		
		2048		0.028		
		1024		0.039		
		512		0.062		
		256		0.11		
Maximum error with supply voltage ⁽²⁾	$V_{DD} = 1.5\text{ V} \dots 3.6\text{ V}$			±2		mbar
Long-term stability				±2		mbar/yr
Reflow soldering impact	IPC/JEDEC J-STD-020C (Refer to application note AN808)			±4		mbar
Recovering time after reflow ⁽³⁾				7		days

⁽¹⁾ With autozero at one pressure point⁽²⁾ With autozero at 3V point⁽³⁾ Time to recover at least 66% of reflow impact⁽⁴⁾ Wet/dry cycle: sensor must be dried typically once a day**TEMPERATURE OUTPUT CHARACTERISTICS ($V_{DD} = 3\text{ V}$, $T = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)**

Parameter	Conditions		Min.	Typ.	Max	Unit
Relative Accuracy	0...60°C, 600...1100 mbar			±1		°C
	-20...85°C, 300...1100 mbar		-2		+2	°C
Maximum error with supply voltage	$V_{DD} = 1.5\text{ V} \dots 3.6\text{ V}$			±0.3		°C
Resolution RMS	OSR	8192		0.002	°C	
		4096		0.003		
		2048		0.004		
		1024		0.006		
		512		0.009		
		256		0.012		

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DIGITAL INPUTS (SDA, SCL)

Parameter	Symbol	Conditions	Min.	Typ.	Max	Unit
Serial data clock	SCL				400	kHz
Input high voltage	V _{IH}		80% V _{DD}		100% V _{DD}	V
Input low voltage	V _{IL}		0% V _{DD}		20% V _{DD}	V
Input leakage current	I _{leak}	T = 25 °C			0.1	μA

DIGITAL OUTPUTS (SDA)

Parameter	Symbol	Conditions	Min.	Typ.	Max	Unit
Output high voltage	V _{OH}	I _{source} = 1 mA	80% V _{DD}		100% V _{DD}	V
Output low voltage	V _{OL}	I _{sink} = 1 mA	0% V _{DD}		20% V _{DD}	V