

PERFORMANCE SPECIFICATIONS (CONTINUED)

PRESSURE OUTPUT CHARACTERISTICS (V_{DD} = 3 V, T = 25°C UNLESS OTHERWISE NOTED)

| Parameter | Conditions | | Min. | Typ. | Max | Unit |
|--|-------------|--------------------------------------|------|------|------|---------|
| Operating Pressure Range | | P _{range} | 0 | | 30 | bar |
| Absolute Accuracy ⁽¹⁾⁽⁴⁾ , Temperature range: 0 ... 45°C | Version -01 | 0 ... 6 bar | -50 | | +50 | mbar |
| | Version -26 | | -75 | | +75 | mbar |
| Absolute Accuracy ⁽¹⁾⁽⁴⁾ , Temperature range: 0 ... 45°C | | 0 ... 20 bar | -100 | | +100 | mbar |
| | | 0 ... 30 bar | -200 | | +200 | |
| Absolute Accuracy ⁽¹⁾⁽⁴⁾ , Temperature range: -20 ... 85°C | Version -01 | 0 ... 6 bar | -100 | | +100 | mbar |
| | Version -26 | | -150 | | +150 | mbar |
| Absolute Accuracy ⁽¹⁾⁽⁴⁾ , Temperature range: -20 ... 85°C | | 0 ... 20 bar | -200 | | +200 | mbar |
| | | 0 ... 30 bar | -400 | | +400 | |
| Maximum error with supply voltage ⁽²⁾ | Version -01 | V _{DD} = 1.5 V ... 3.6 V | | ±30 | | mbar |
| | Version -26 | | ±75 | | mbar | |
| Long-term stability | | | | ±30 | | mbar/yr |
| Reflow soldering impact IPC/JEDEC J-STD-020C | Version -01 | | | ±8 | | mbar |
| | Version -26 | | | ±30 | | mbar |
| Recovering time after reflow ⁽³⁾ | | | | 7 | | days |
| Resolution RMS | OSR | 8192 | | 0.20 | | mbar |
| | | 4096 | | 0.28 | | |
| | | 2048 | | 0.38 | | |
| | | 1024 | | 0.54 | | |
| | | 512 | | 0.84 | | |
| | | 256 | | 1.57 | | |

- (1) With autozero at one pressure point
- (2) With autozero at 3V point
- (3) Time to recover at least 66% of the reflow impact.
- (4) Wet/dry cycle: sensor must be dried typically once a day

TEMPERATURE OUTPUT CHARACTERISTICS (V_{DD} = 3 V, T = 25°C UNLESS OTHERWISE NOTED)

| Parameter | Conditions | | Min. | Typ. | Max | Unit |
|-----------------------------------|-----------------------------------|------|------|--------|-----|------|
| Absolute Accuracy | -20°C ... +85°C | | -4 | | +4 | °C |
| Maximum error with supply voltage | V _{DD} = 1.5 V ... 3.6 V | | | ± 0.6 | | °C |
| Resolution RMS | OSR | 8192 | | 0.0022 | | °C |
| | | 4096 | | 0.0026 | | |
| | | 2048 | | 0.0033 | | |
| | | 1024 | | 0.0041 | | |
| | | 512 | | 0.0055 | | |
| | | 256 | | 0.0086 | | |

MS5837-30BA

Ultra-small, gel-filled pressure sensor with stainless steel cap

PERFORMANCE SPECIFICATIONS (CONTINUED)

DIGITAL INPUTS (SCL, SDA)

| 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 | $I_{leak25^{\circ}C}$ | at 25°C | | | 0.1 | μA |

DIGITAL OUTPUTS (SDA)

| Parameter | Symbol | Conditions | Min. | Typ. | Max | Unit |
|---------------------|----------|-------------------------------|--------------|------|---------------|------|
| Output high voltage | V_{OH} | $I_{source} = 0.6 \text{ mA}$ | 80% V_{DD} | | 100% V_{DD} | V |
| Output low voltage | V_{OL} | $I_{sink} = 0.6 \text{ mA}$ | 0% V_{DD} | | 20% V_{DD} | V |