

ST-5-AS SMT SmartTweezers Technical Specifications



AC test mode Test frequency: 1 kHz, 10 kHz, 120Hz,100 Hz
Test frequency accuracy: 50 PPM (0.005%)
Test signal level: 0.25/0.5/1.0 +/- 5% VRMS Sine wave
Source impedance: 62.5Ω/1kΩ/16kΩ +/- 1%

Parameter	Measurement Range	Basic Measurement Accuracy*
Resistance*	5 Ω to 999 kΩ	< 0.2%
	0.1 to 9.9 MΩ	< 1.0%
Capacitance*	10 pF to 100 μF	< 0.5%
	0.5 pF to 999 μF	< 1.0%
Q	0.001 to 100	
Inductance*	10 μH to 99 mH	< 0.5%
	0.5 μH to 999 mH	< 1.0%
D	0.001 to 10	

* at optimum test frequencies, ranges, without calibration offset. ** required DC voltage offset calibration

Auto mode Read-out: Dominant parameter
Equivalent circuit diagram: Serial/Parallel for C/R Serial for L/R
Manual Mode Read-out: Dominant or secondary parameter
Equivalent circuit diagram: Parallel or serial
Measurement update rate: up to 4 measurements per second
Battery Type: 3.7V LiPO rechargeable 150mAH
Typical charge time: 2.5 hours, current <100mA
Calibration: Recommended interval 1 year. NIST traceable calibration

Physical Specifications

Size: 14.0 x 2.5 x 3.0 cm (3.94 x 0.9 x 1.5 in)
Weight: 53 grams (0.11 lb)

Environmental Conditions

Operating temperature: 0°C to 50°C
Storage temperature: -40°C to 70°C
Relative Humidity: 0 % to 90 % (0 °C to 35 °C)
Altitude Operating: 0 – 2000 meters
EMC: According to CE regulation 89/336, Emission according FCC15 Class B.

Appendix D: ACCURACY SPECIFICATION

Parameter	Measurement Range	Basic Measurement Accuracy*
Resistance	1Ω to 999 kΩ	< 0.2%
	0.1 to 9.9 MΩ	< 0.5%
Capacitance	10 pF to 100 μF	< 0.5%
	0.5 pF to 999 μF	< 1.0%
Inductance	10 μH to 99 mH	< 0.5%
	0.5 μH to 999 mH	< 1.0%

* at optimum test frequency, ranges, without calibration offset

Typical offset:

Resistance ≤ 25 mΩ

Capacitance 0.65 pF

Inductance 0.1 uH

Offset value should be subtracted from measurement result for small value components (R < 10Ω, C < 100 pF, L < 10 μH).

Parameter	Measurement Range	Test frequency
Resistance	< 9.9 MΩ	1 kHz
Capacitance	< 9999 pF	10 kHz
	10000 pF to 1 μF	1 kHz
	> 1 uF	100 Hz
Inductance	0.5 μH to 99 μH	10 kHz
	100 μH 99 mH	1 kHz
	> 100 mH	100 Hz

Maximum measurement ranges

Resistance R: 0.05 Ω to 9.9 MΩ

Capacitance C: 0.5 pF to 4999 μF

Inductance L: 0.5 uH to 999 mH

Quality factor Q: 0.001 to 1000 *

Dissipation factor D: 0.001 to 1000 *

Maximum resolution

Impedance/Resistance Z or RAC: 10 mΩ

Capacitance C: 0.1 pF

Inductance L: 0.1 μH

Quality factor Q: 0.001

Dissipation factor D: 0.001

* indication of the parameter not implemented in some versions

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