



Bird®

Pulse Sensors

7023 Series

Bird's® New Precision Pulse Power Sensor for precision semiconductor laboratory applications. The 7023 Series Power Sensors were designed to bring superb accuracy and ease of use together for the engineer in the laboratory and semiconductor fab. environments. At the calibrated frequency and power level, these sensors are capable of 1% accuracy measurements of the gated power within a pulsed waveform. With calibration traceable to the National Institute of Standards and Technology, you can be confident of the measurements these sensors provide.

PROBLEMS ▶ SOLUTIONS

Poor production yields.

- ▶ 1% accuracy at specified frequencies and power levels

Lack of confidence in measurements.

- ▶ Calibration traceable to NIST

Complex tools requiring calibration each time.

- ▶ Unit does not need to be field calibrated before use.
- ▶ Calibrate only once every six months.

Harmonic content interfering with measurements.

Wide range of applications requiring various input and output connectors.

- ▶ Dozens of connector options available.

APPLICATIONS

Bird's new 7023 Series Pulse Power Sensors represent a family of sensors for use in semiconductor processing and other precision process applications. Intended for use with the Bird Virtual Power Meter, these products provide a significant improvement in long term unit to unit accuracy.

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SENSOR SPECIFICATIONS

Model	Forward Range	Power Range	Gated Average Power	Repetition Rate	Burst Width
7023-1-524101-XX	400 kHz +/- 4 kHz	50 W to 20 kW Continuous Average Power	20 kW Max	100 kHz to 11.25 kHz	9 μs to 9 ms
7023-2-554101-XX	3 to 3.4 MHz	90 W to 20 kW Continuous Average Power	20 kW Max	1 kHz to 50 kHz	2 μs to 900 μs
7023-1-594301-XX	13.56 +/- 100 kHz	50 W to 10 kW Continuous Average Power	15 kW Max	1 kHz to 50 kHz	2 μs to 900 μs
7023-2-634601-XX	100 MHz +/- 100 kHz	45 W to 5.5 kW Continuous Average Power	7 kW Max	1 kHz to 90 kHz	2 μs to 900 μs

GENERAL SPECIFICATIONS

Measurement Speed	0.14 Seconds + 1500 x Pulse Width
Measurement Type	Thru-Line Power
Impedance, Nominal	50 Ohms
Average Power Accuracy	1% at calibrated frequency and power level 2% at all other points
VSWR Range	1.0:1 to 2.0:1
Gated Average Power Accuracy	1% at calibrated frequency and power level 2% at all other points
Duty Cycle	10 to 90%
Insertion Loss, Max	<0.05 dB
Insertion VSWR, Max	1.05
RF Connectors	QC (Overall power will be limited by connector selection)
Directivity, Min.	28 dB
Factory Calibration	NIST Traceable
Recommended Calibration Cycle	6 Months
Field Calibration	No Field Calibration Required to meet specs
Interface	USB 2.0
Power Supply	Via USB Cable

MECHANICAL SPECIFICATIONS

Operating Temperature	+15 to +35 °C (+59 to +95 °F)
Storage Temperature	-20 to +70 °C (-4 to +158 °F)
Humidity, Max	95% maximum (non-condensing)
Altitude, Max	15,000 ft. (4,500 m)
Dimensions, Nominal	6.0" L x 1.9" H x 3.7" W (155 L x 50 H x 95 W mm) Not Including QC Connectors
Weight, Max	Less than 3 lbs
Mechanical Shock: and Vibration	Designed to meet MIL-PRF-28800F class 3
EMC	EMC Directive (2004/108/EC) European Standard: EN 61326—Electrical Equipment for measurement, control and laboratory use; EMC Requirements Test Spec (for radiated immunity): EN 61000-4-3—Testing and measurement techniques - 10V/meter
CE Mark	Required
RoHS	Required
Compatible Devices	Virtual Power Meter
Standard Accessories	USB Cable



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