# Bird® Pulse Sensors

## *7027 Series*


The **RF** Experts

Bird's® New Precision Pulse Power Sensor for precision semiconductor applications. The 7027 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 frequencies, 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.

## KEY FEATURES

- Time Domain Display
- Gated power measurements with up to four sets of gates available
- Capable of ±1% power measurement accuracy over full dynamic range at calibrated frequencies
- NIST traceable calibration
- Measure pulse state widths down to 1us
- Measure pulse rep. rates from 10Hz up to 50kHz
- Harmonic filtering
- External sync input
- RF Interlock
- Automate with SCPI command set

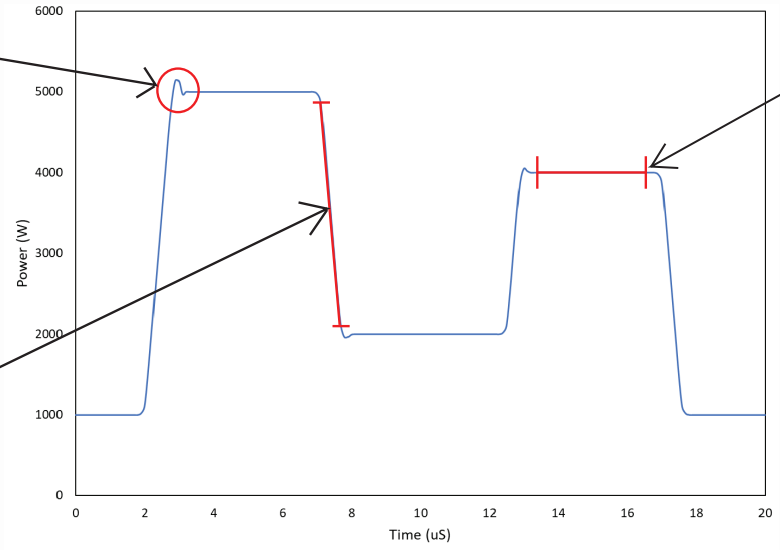
## APPLICATIONS

- RF generator calibration and verification
  Our high-accuracy sensors help to give you confidence in the output of your RF generator
- Process development
  Use the VPM3 to log and analyze the RF power data from experimental recipes
- In-situ processes monitoring
  Keep an eye on your processes at runtime and detect anomalies
- Time domain analysis of RF pulse waveforms
  Get a closer look at your high power RF pulses

## ANALYZE COMPLEX RF PULSE WAVEFORMS

Identify irregularities in your pulses

Measure rise and fall times of your pulse states




Gated Power measurements allow you to measure the stable region of your pulses

Utilize up to four sets of gates to analyze complex pulses

# Pulse Sensors

## *7027 Series*

## SENSOR SPECIFICATIONS

| Models | Frequency Range | Power Range | Pulse Rep. Rate | Min. State Width |
|---|---|---|---|---|
| 7027-1-524001-XXYY | 400kHz ± 10% | 25W to 25KW | 10Hz to 11.25kHz | 44us |
| 7027-1-664601-XXYY | 1 MHz ± 10% | 5.5W to 5.5kW | 10Hz to 10kHz | 17us |
| 7027-1-544601-XXYY | 2 MHz ± 10% | 5.5W to 5.5kW | 10Hz to 50kHz | 11us |
| 7027-1-594301-XXYY | 13.56MHz ± 5% | 10W to 10kW | 10Hz to 50kHz | 1us |

*Other frequencies and power levels available upon request*

**Sensor Options** Input (XX) & output (YY) connector options:

01 – QC N(f) 02 – QC N(m) 12 – QC HN(f) 13 – QC HN(m) 14 – QC 7/16(f) 15 – QC 7/16(m)

*Other connector options available upon request*

## GENERAL SPECIFICATIONS

| | |
|---|---|
| **Measurement Type** | Thru-Line Power |
| **Impedance, Nominal** | 50 Ohms |
| **Power Measurement Accuracy** | 1% at calibrated frequencies<br>2% at all other frequencies within sensor bandwidth |
| **VSWR Range** | 1.0:1 to 2.0:1 |
| **Insertion Loss, Max** | <0.05 dB |
| **Insertion VSWR, Max** | 1.05 |
| **RF Connectors** | QC (See table above for options. Over-all power will be limited by connector selection) |
| **Directivity, Min.** | 28 dB |
| **Factory Calibration** | NIST Traceable |
| **Recommended Calibration Cycle** | 6 Months |
| **Interface** | USB 2.0 |
| **Power Supply** | Via USB Cable |
| **External Sync Input** | TTL High, 2-5V<br>TTL Low, 0-0.85V |

## 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<br>(155 L x 50 H x 95 W mm)<br>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)<br>European Standard: EN 61326—Electrical Equipment for measurement, control and laboratory use; EMC Requirements<br>Test Spec (for radiated immunity):<br>EN 61000-4-3—Testing and measurement techniques - 10V/meter |
| **CE Mark** | Required |
| **RoHS** | Required |
| **Compatible Devices** | VPM3 |
| **Standard Accessories** | USB Cable |