

HIGH-SENSITIVITY DETECTOR SERIES**1 GHz to 26.5 GHz High-Sensitivity Coaxial Detectors**

Zero Biased Schottky technology | SMA male RF input | Positive or negative detected-voltage output

**Product Overview**

The ZHD Series high-sensitivity coaxial detectors use Zero-Biased Schottky diodes to provide sensitive, broadband envelope detection in a compact connectorized package. The series supports either positive or negative detected-voltage output and is intended for power monitoring, video detection, amplitude-control loops, swept transmission/reflection measurements, radar, communications and electronic-warfare systems.

Key Features

- Broadband coverage from 1 GHz to 26.5 GHz
- Open-circuit voltage sensitivity: 1,500 mV/mW minimum
- Tangential signal sensitivity (TSS): ≤ -52 dBm
- Flatness: ± 1.0 dB typical; ± 1.25 dB maximum
- 100 mW CW maximum RF input power
- Compact passivated-stainless-steel package: $\varnothing 9.0 \times 34.5$ mm

Typical Applications

- AM-noise measurement
- Ultra-wideband pulse measurement
- RF source level control
- Radar and electronic warfare
- Test and measurement
- Aerospace and navigation
- Military and commercial communications
- System integration

Technical Specifications

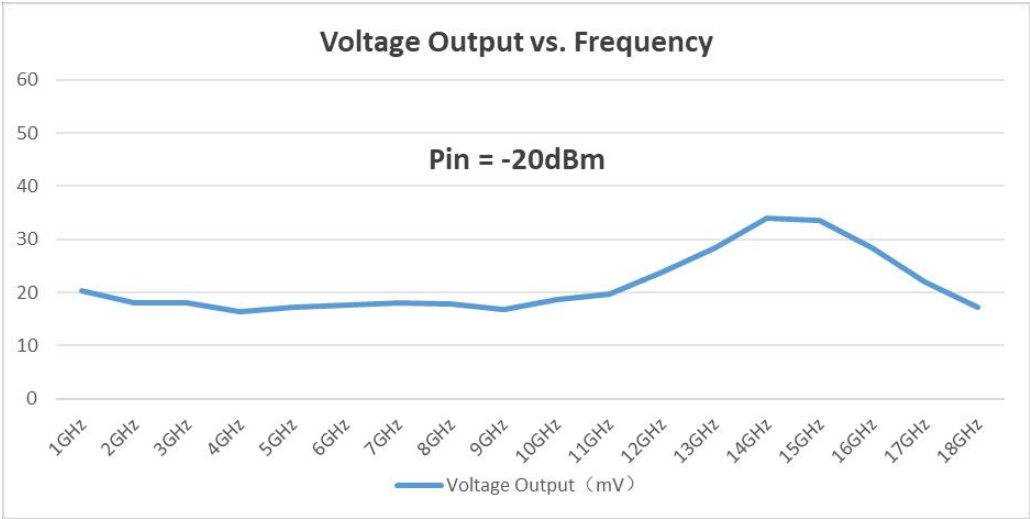
ZHD08 Series | ZHD18 Series | ZHD26 Series

Parameter	ZHD08	ZHD18	ZHD26
Frequency range	1-8 GHz	1-18 GHz	1-26.5 GHz
Flatness [1]	±1.0 dB typ. ±1.25 dB max.	±1.0 dB typ. ±1.25 dB max.	±1.0 dB typ. ±1.25 dB max.
Nominal impedance	50 Ω	50 Ω	50 Ω
Maximum RF input	+20 dBm (100 mW), CW	+20 dBm (100 mW), CW	+20 dBm (100 mW), CW
Tangential sensitivity (TSS) [2]	≤ -52 dBm (6 nW)	≤ -52 dBm (6 nW)	≤ -52 dBm (6 nW)
Open-circuit voltage sensitivity [1]	≥1,500 mV/mW	≥1,500 mV/mW	≥1,500 mV/mW
Pulse response @ 10 kΩ	Pulse width ≤3 μs Rise time ≤1 μs	Pulse width ≤3 μs Rise time ≤1 μs	Pulse width ≤3 μs Rise time ≤1 μs
Pulse response @ 50 Ω	Pulse width ≤50 ns Rise time ≤10 ns	Pulse width ≤50 ns Rise time ≤10 ns	Pulse width ≤50 ns Rise time ≤10 ns
Input-to-output delay	≤ 30 ns	≤ 30 ns	≤ 30 ns
Output capacitance	10 pF typ.	10 pF typ.	10 pF typ.
Temperature range	Operating: -20°C to +60°C Storage: -40°C to +85°C	Operating: -20°C to +60°C Storage: -40°C to +85°C	Operating: -20°C to +60°C Storage: -40°C to +85°C
RF input	SMA male, DC coupled	SMA male, DC coupled	SMA male, DC coupled
Detected-voltage output	SMA female	SMA female	SMA female
Outline / net weight	Ø9.0 × 34.5 mm / 10 g	Ø9.0 × 34.5 mm / 10 g	Ø9.0 × 34.5 mm / 10 g
Connector body	Passivated stainless steel	Passivated stainless steel	Passivated stainless steel

[1] Measured at RF input levels below -20 dBm with an open-circuit load.

[2] Measured using a video amplifier with 1 MHz bandwidth and 2 dB noise figure.

Typical Voltage Output vs. Frequency

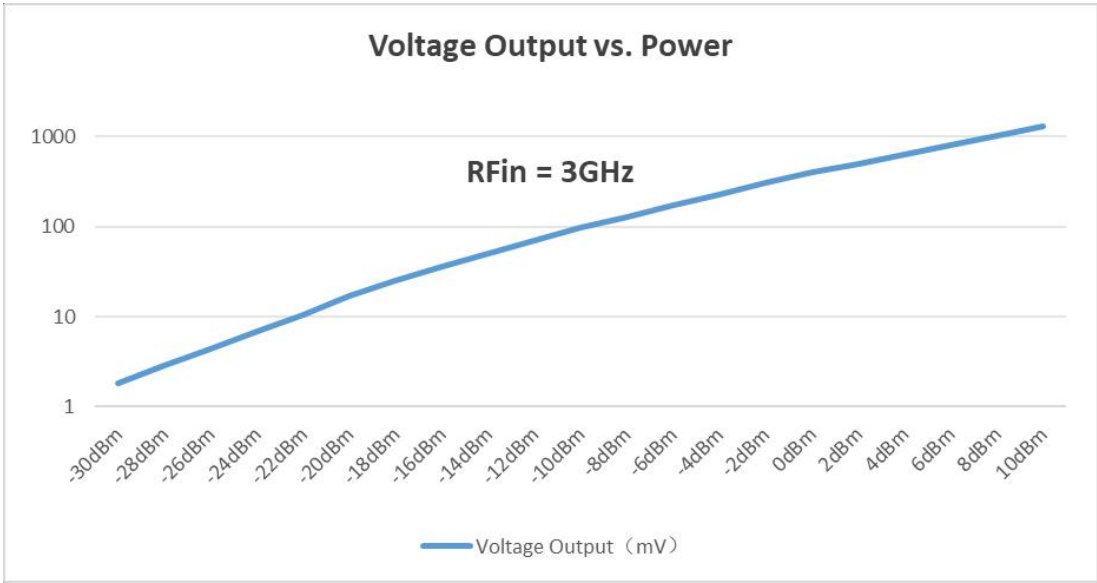


Typical data shown for reference; not guaranteed limits. Pin = -20 dBm.

Performance Curves and Ordering Information

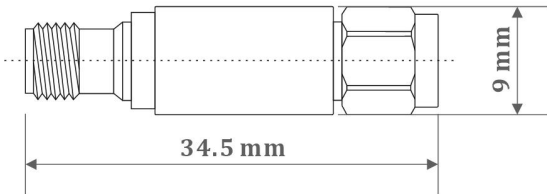
Select frequency range and detected-voltage polarity when ordering

Typical Voltage Output vs. Input Power



Typical data shown for reference; not guaranteed limits. RF input frequency = 3 GHz.

Mechanical Outline



Dimensions are in millimetres. Standard outline: Ø9.0 × 34.5 ±1.0 mm.

Ordering Information

Model	Frequency Range	Output Polarity
ZHD08N	1-8 GHz	Negative
ZHD08P	1-8 GHz	Positive
ZHD18N	1-18 GHz	Negative
ZHD18P	1-18 GHz	Positive
ZHD26N	1-26.5 GHz	Negative
ZHD26P	1-26.5 GHz	Positive

Handling Notes

- Electrostatic-sensitive device: use appropriate ESD precautions during storage, transport and handling.
- The RF input is DC coupled; do not apply a DC voltage to the RF input port.
- Confirm the required positive or negative detected-voltage polarity when ordering.
- Specifications are subject to change without notice. Contact ZTS for tighter limits or custom requirements.