

Coaxial

# Power Detector

ZV47-K44+

50Ω -30 to +15 dBm 500 to 43500 MHz

## The Big Deal

- Ultra-wideband, 500 MHz to 43.5 GHz
- Wide dynamic range of input power, -30 to +15 dBm
- Single positive supply voltage, +5V
- Low supply current: 3mA at +5V typical
- Fast output rise time: 4ns typical



CASE STYLE: AV2578-3

## Product Overview

Mini-Circuits' ZV47-K44+ is an envelope detector that covers a wide RF input bandwidth from 500 MHz to 43.5 GHz. The output is a baseband voltage proportional to the instantaneous amplitude of the RF input signal, with power range from -30 to +15 dBm. It comes in a compact, gold over nickel plated brass alloy case (0.84 x 0.96 x 0.37") with 2.92mm RF connectors.

## Key Features

Feature	Advantages
Ultra-wideband, 500 to 43500 MHz	Covers a wide range of applications including test and measurement, point-to-point microwave links and power control applications
Wide dynamic range of input power, -30 to +15 dBm	Can handle RF input signals with a wide range of amplitude variation.
Single supply voltage, +5V	Simplifies setup of power supply. Low power consumption with 3mA typical supply current draw.

### Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.  
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



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50Ω -30 to +15 dBm 500 to 43500 MHz

## Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

### DC Power:

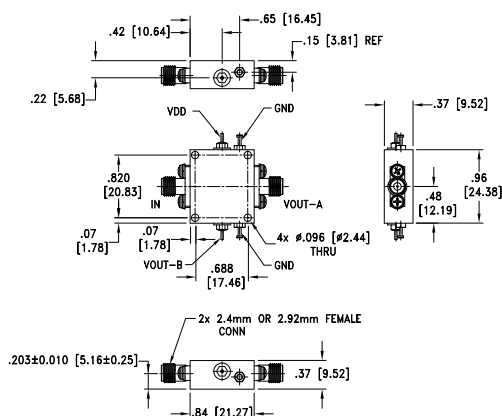
Max. voltage	5.5V
Input Power	+20dBm

Permanent damage may occur if any of these limits are exceeded.

## Coaxial Connections

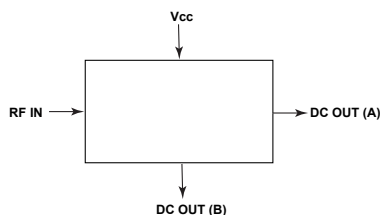
RF IN	1
DC OUT	4,6
Vcc (+5V)	2
GROUND	3,5

## Outline Drawing



**NOTE:** When soldering the DC connections, caution must be used to avoid overheating the DC terminals. See Application Note [AN-40-10](#)

## Simplified Functional Diagram



## Features

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- Wide dynamic range of input power, -30 to +15dBm
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- Fast output rise time: 4ns typical

## Applications

- Point-to-Point Microwave Links
- Instrumentation and Measurement Equipment
- Military Radios
- LTE, WiFi, WiMAX Wireless Networks
- RMS Power Measurement
- Receive and Transmit Gain Control
- RF PA Transmit Power Control



Generic photo used for illustration purposes only

CASE STYLE: AV2578-3

Connectors	Model
2.92mm Fem	ZV47-K44+

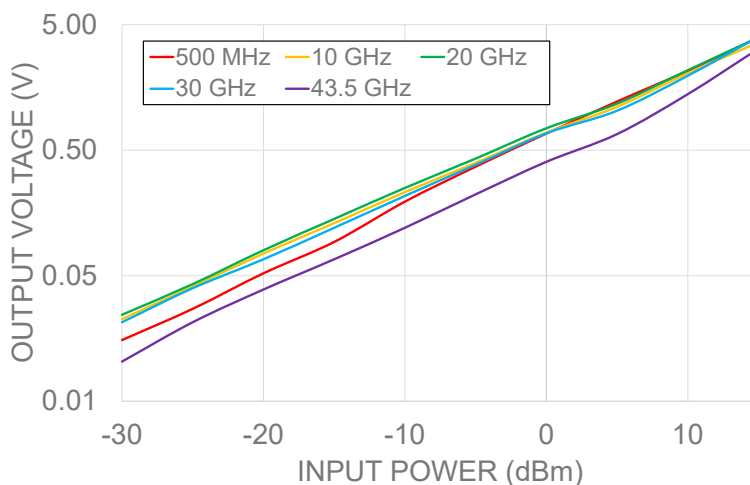
### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

## Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		500		43500	MHz
Dynamic Range at ±1dB Error	500 - 43500	-30 to 15			dBm
Output Voltage Range	500 - 43500	0 - 4.3			V
VSWR	500 - 43500		2.4		(:1)
Pulse Responsive Time	Rise	500 - 43500	4		ns
	Fall	500 - 43500	50		ns
DC Operating Power	Vcc	500 - 43500	4.75	5.0	V
	Current	500 - 43500	3	5.25	mA

## OUTPUT VOLTAGE vs. INPUT POWER @+25C



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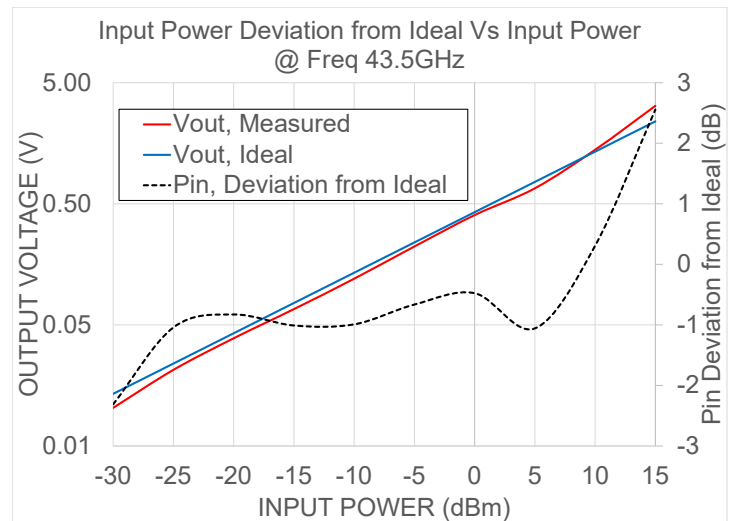
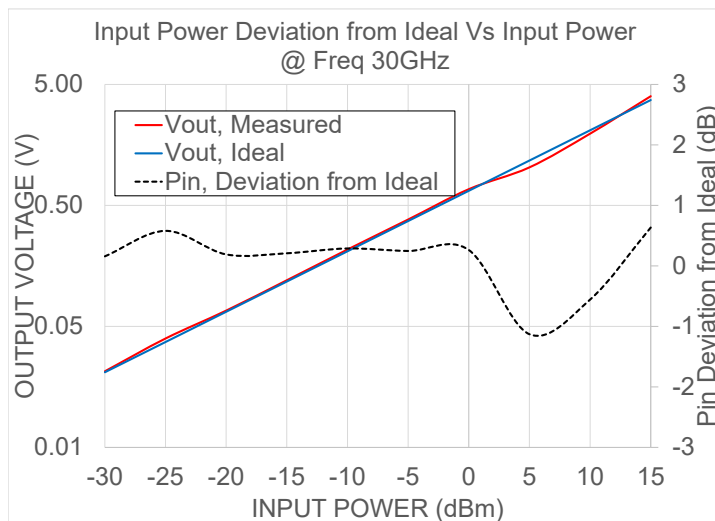
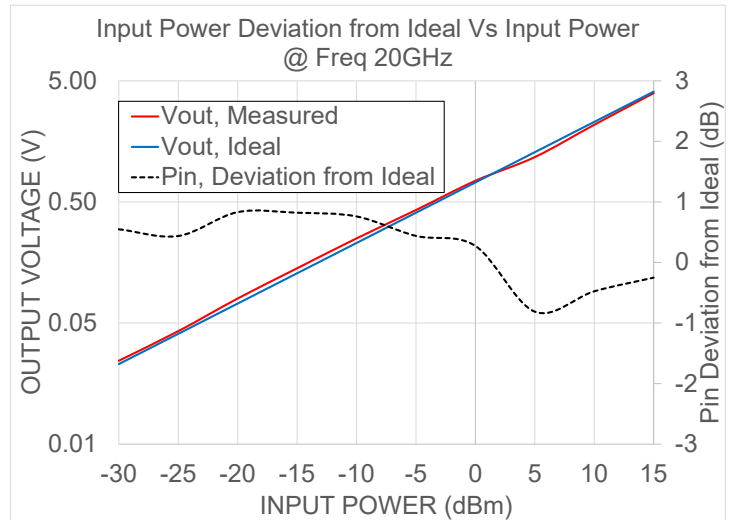
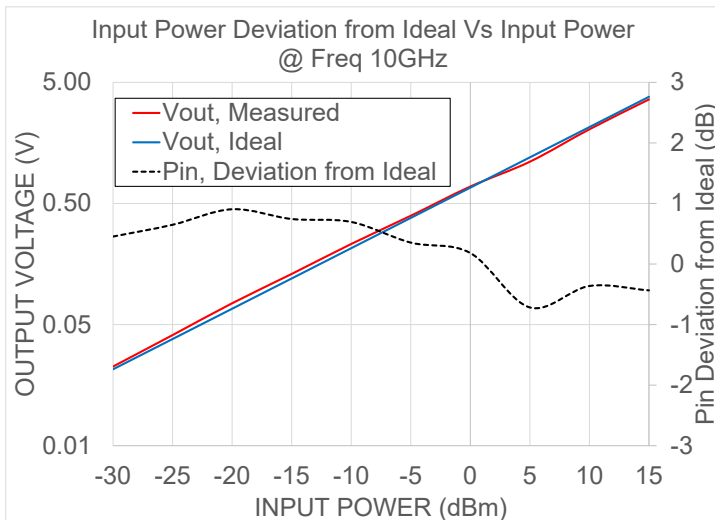
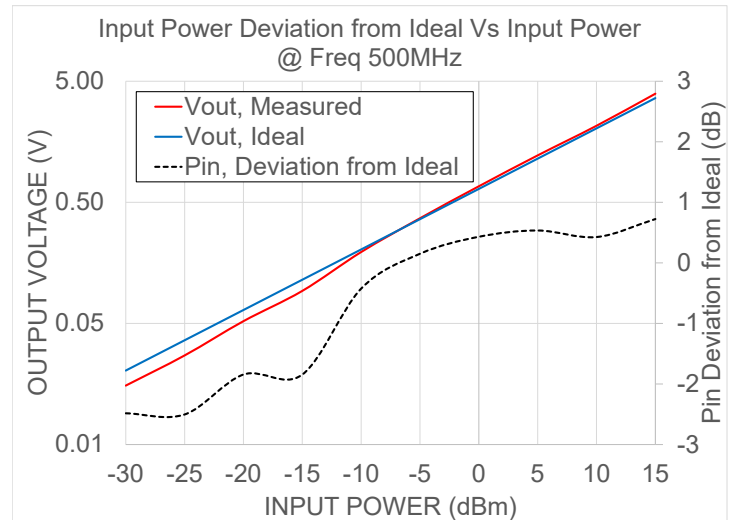
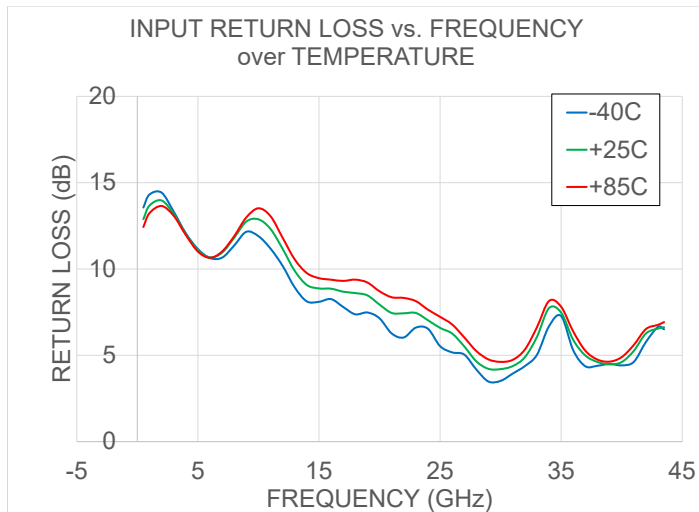
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# Performance Curves

# ZV47-K44+



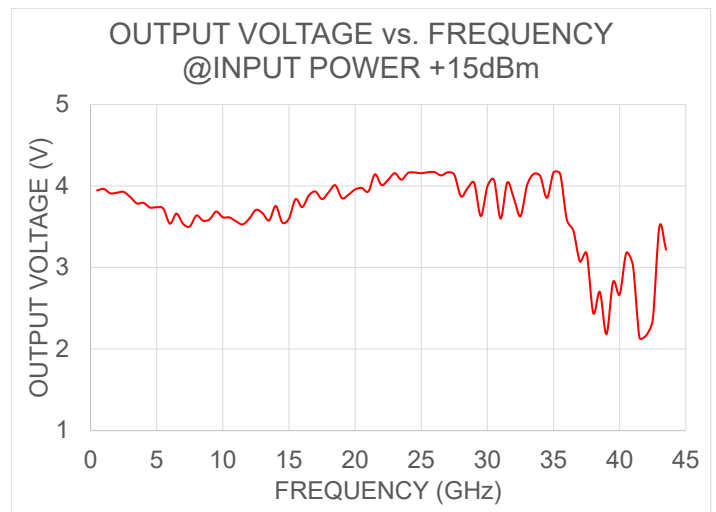
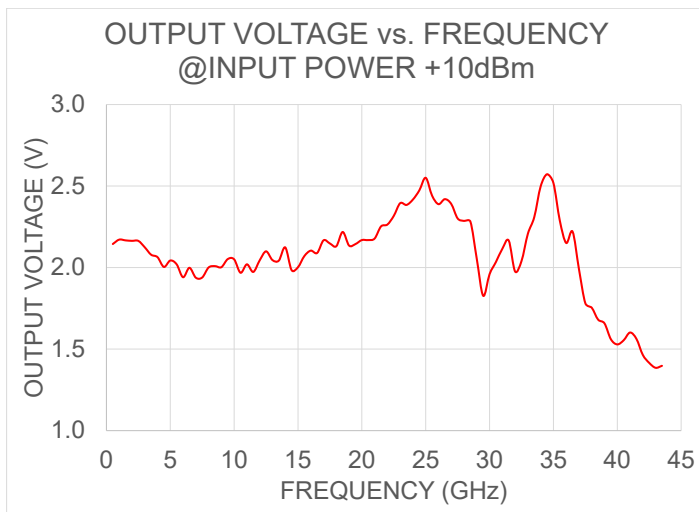
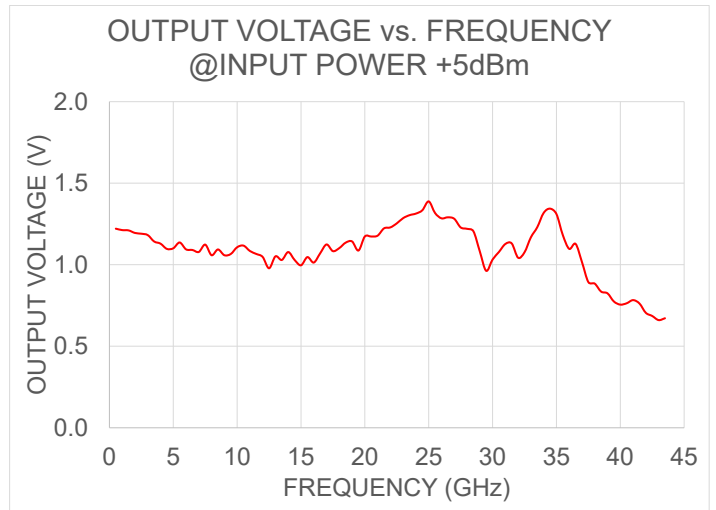
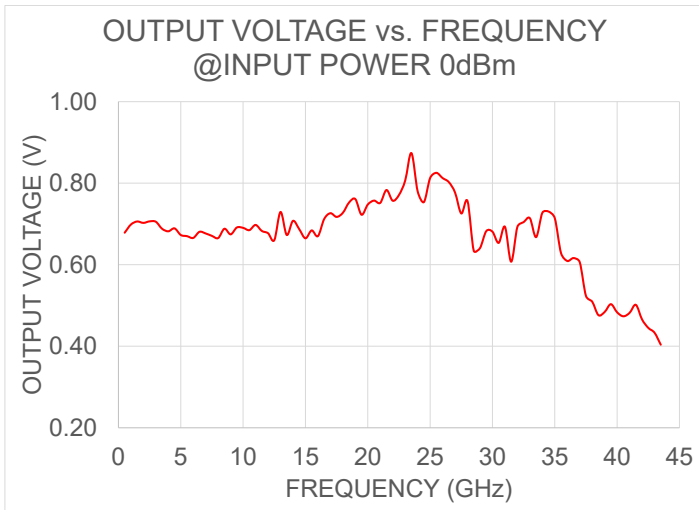
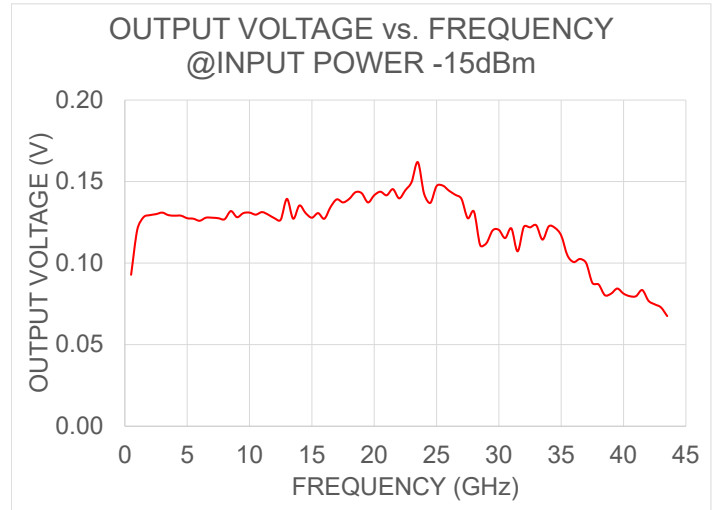
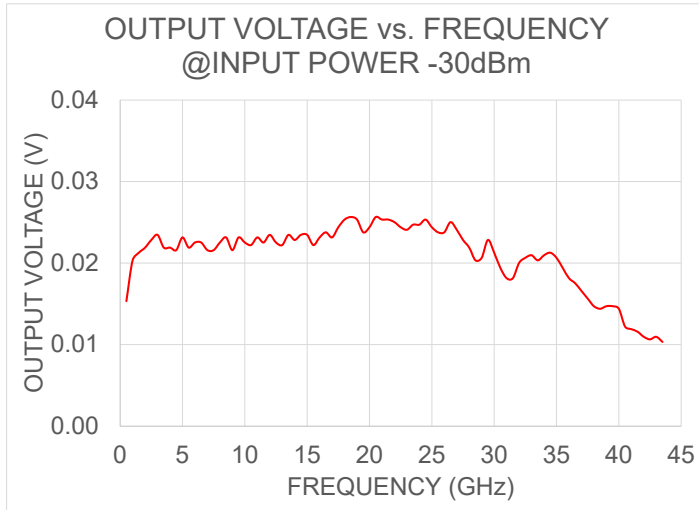
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# Performance Curves

# ZV47-K44+



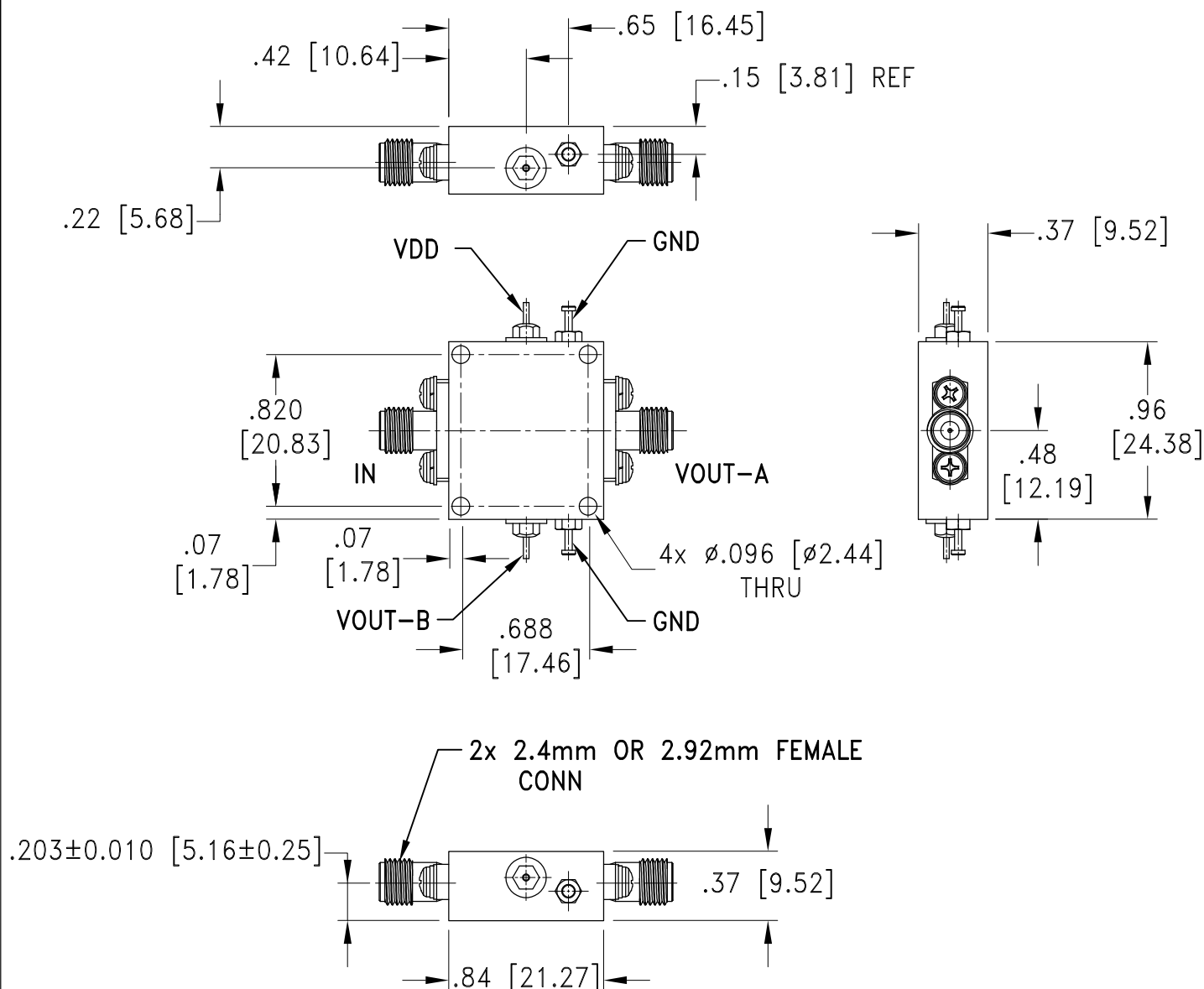
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## Outline Dimensions

AV2578-3



Weight: 48 grams

Dimensions are in inches (mm). Tolerances: 2 Pl.±.02; 3 Pl. ±.010,

### Notes:

1. Case material: Brass alloy
2. Case finish: Gold plating 20 μinches, over Nickel plating 100 μinches.
3. Refer to the individual Model Data Sheet for all Type of Connectors available.



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Mini-Circuits ISO 9001 & ISO 14001 Certified



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85°C	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I