

Super Ultra Wideband Amplifier

ZVA-183+

50Ω 700 MHz to 18 GHz

Features

- super ultra-wideband, 700 MHz to 18 GHz
- high output IP3, +33 dBm typ.
- rugged, compact case (including mounting bracket)
- unconditionally stable
- good matching at input and output
- withstands open/short load at 1dB compression point output power
- very good isolation, 75 dB typ.



| | | |
|------------|------------|---------------|
| Model No. | ZVA-183-S+ | ▲ ZVA-183X-S+ |
| Case Style | AV1280 | |
| Connectors | SMA | |

Applications

- radar
- very wideband test instrumentation
- lab use
- wideband isolation, directivity 50 dB typ.

+RoHS Compliant

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

Electrical Specifications at 25°C

| Parameter | Condition (MHz) | ZVA-183+ ▲ ZVA-183X+ | | | Units |
|------------------------------------|-----------------|-------------------------|------|-------|-------|
| | | Min. | Typ. | Max. | |
| Frequency Range | | 700 | — | 18000 | MHz |
| Gain | 700 - 18000 | 24 | 26 | — | dB |
| Gain Flatness | 700 - 18000 | — | ±1.0 | — | dB |
| Output Power at 1dB compression | 700 - 18000 | 21 | 24 | — | dBm |
| Noise Figure | 700 - 18000 | — | 3.0 | 5.5 | dB |
| Output third order intercept point | 700 - 18000 | — | +33 | — | dBm |
| Input VSWR | 700 - 18000 | — | 1.35 | — | :1 |
| Output VSWR | 700 - 18000 | — | 1.25 | — | :1 |
| DC Supply Voltage | | — | 12* | — | V |
| Supply Current | | — | — | 400 | mA |

* Recommended Operating Voltage.

▲Heat sink not included. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 85°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 4°C/W max.

Maximum Ratings

| Parameter | Ratings |
|-------------------------------|--|
| Operating Temperature | ZVA-183+ -55°C to 65°C ambient |
| | ZVA-183X+ -55°C to 85°C base plate temp. |
| Storage Temperature | -65°C to 150°C |
| DC Voltage | 15V |
| CW Input RF Power (no damage) | +4 dBm |

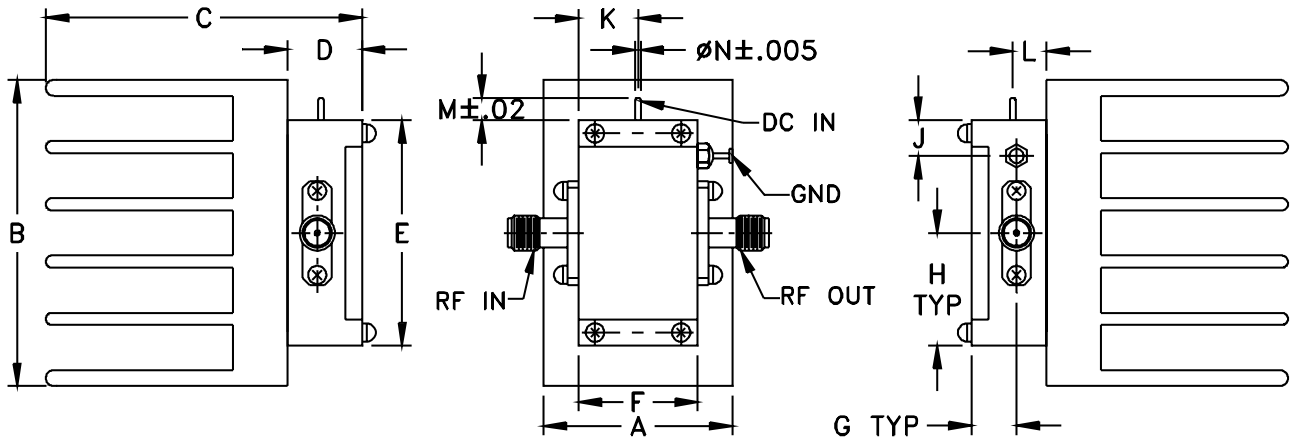
Permanent damage may occur if any of these limits are exceeded.

Notes

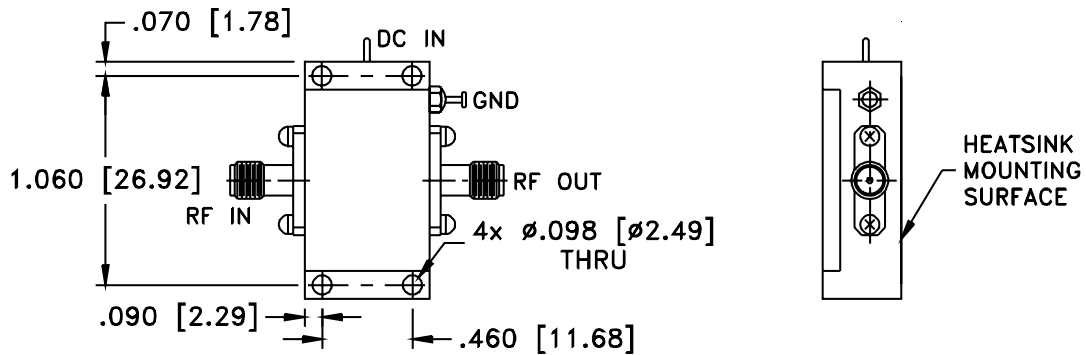
- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
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Outline Drawing for models with heatsink



Outline Drawing for models without heatsink



Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G | H | J | K | L | M | N | wt |
|-------|-------|-------|-------|-------|-------|------|-------|------|------|------|------|------|--------|
| 1.01 | 1.63 | 1.69 | .45 | 1.20 | .64 | .24 | .60 | .19 | .32 | .27 | .12 | .03 | grams* |
| 25.65 | 41.40 | 42.93 | 11.43 | 30.48 | 16.26 | 6.10 | 15.24 | 4.83 | 8.13 | 6.86 | 3.05 | 0.76 | 58 |

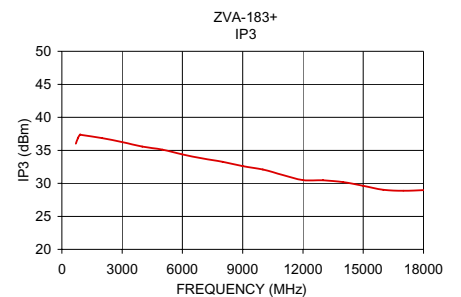
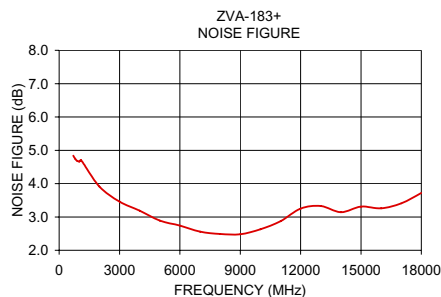
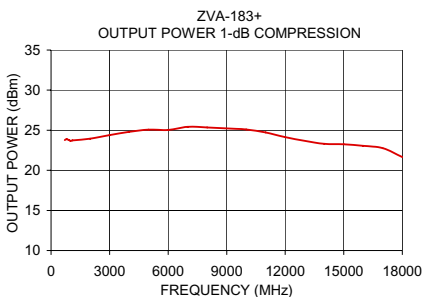
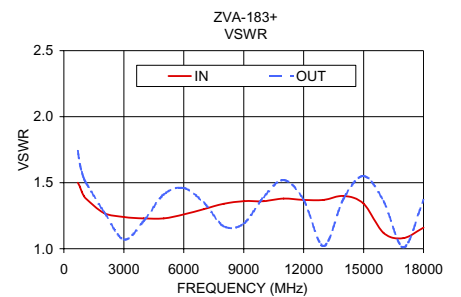
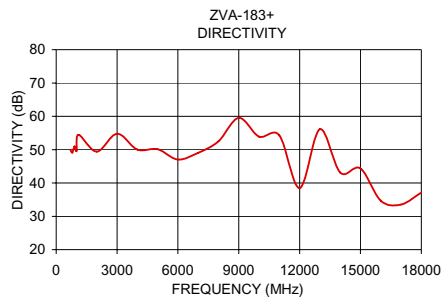
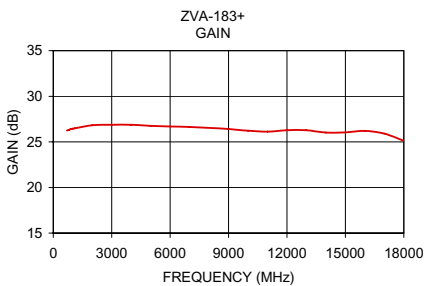
*17 grams without heatsink

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| FREQUENCY (MHz) | GAIN (dB) | DIRECTIVITY (dB) | VSWR (:1) | | NOISE FIGURE (dB) | P _{OUT} at 1 dB COMPR. (dBm) | FREQUENCY (MHz) | IP ₃ (dBm) |
|-----------------|-----------|------------------|-----------|------|-------------------|---------------------------------------|-----------------|-----------------------|
| | 12V | | IN | OUT | | | | |
| 700.00 | 26.25 | 49.93 | 1.50 | 1.74 | 4.84 | 23.77 | 700.00 | 36.01 |
| 800.00 | 26.32 | 49.16 | 1.47 | 1.64 | 4.74 | 23.89 | 800.00 | 36.82 |
| 900.00 | 26.40 | 50.96 | 1.43 | 1.58 | 4.68 | 23.80 | 900.00 | 37.38 |
| 1000.00 | 26.45 | 49.60 | 1.40 | 1.53 | 4.66 | 23.67 | 1000.00 | 37.33 |
| 1100.00 | 26.49 | 54.43 | 1.38 | 1.50 | 4.70 | 23.73 | 2000.00 | 36.86 |
| 2000.00 | 26.83 | 49.44 | 1.27 | 1.28 | 3.91 | 23.95 | 3000.00 | 36.24 |
| 3000.00 | 26.88 | 54.76 | 1.24 | 1.07 | 3.46 | 24.39 | 4000.00 | 35.58 |
| 4000.00 | 26.87 | 50.02 | 1.23 | 1.21 | 3.19 | 24.80 | 5000.00 | 35.10 |
| 5000.00 | 26.75 | 50.10 | 1.23 | 1.41 | 2.89 | 25.08 | 6000.00 | 34.38 |
| 6000.00 | 26.68 | 47.03 | 1.26 | 1.46 | 2.74 | 25.04 | 7000.00 | 33.78 |
| 7000.00 | 26.64 | 49.03 | 1.30 | 1.35 | 2.56 | 25.43 | 8000.00 | 33.26 |
| 8000.00 | 26.53 | 52.49 | 1.34 | 1.17 | 2.49 | 25.34 | 9000.00 | 32.62 |
| 9000.00 | 26.42 | 59.55 | 1.36 | 1.19 | 2.48 | 25.23 | 10000.00 | 32.09 |
| 10000.00 | 26.23 | 53.89 | 1.36 | 1.39 | 2.63 | 25.09 | 11000.00 | 31.27 |
| 11000.00 | 26.12 | 54.33 | 1.38 | 1.52 | 2.87 | 24.73 | 12000.00 | 30.49 |
| 12000.00 | 26.28 | 38.47 | 1.37 | 1.37 | 3.25 | 24.14 | 13000.00 | 30.47 |
| 13000.00 | 26.27 | 56.13 | 1.37 | 1.02 | 3.33 | 23.68 | 14000.00 | 30.19 |
| 14000.00 | 26.03 | 43.11 | 1.40 | 1.38 | 3.14 | 23.31 | 15000.00 | 29.63 |
| 15000.00 | 26.04 | 44.40 | 1.34 | 1.55 | 3.31 | 23.24 | 16000.00 | 29.01 |
| 16000.00 | 26.21 | 34.69 | 1.12 | 1.36 | 3.26 | 23.06 | 17000.00 | 28.88 |
| 17000.00 | 25.90 | 33.52 | 1.08 | 1.01 | 3.41 | 22.76 | 18000.00 | 28.98 |
| 18000.00 | 25.12 | 37.12 | 1.16 | 1.37 | 3.72 | 21.65 | | |



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