

Drop-In Medium Power Amplifier

TAMP-112-2W+

50Ω 650 to 1200 MHz



CASE STYLE: NP1933

The Big Deal

- Miniature Shielded Rugged Case
- Wide frequency range
- Excellent Gain Flatness
- Power ON/OFF feature

Product Overview

Mini-Circuits' TAMP-112-2W+ can be used as a driver amplifier with P1dB of 1W (typ.) and P3dB of up to 2W (typ.). The gain of this amplifier has an excellent flatness over a wide frequency range. This amplifier has a dynamic range and therefore can be used as RF front end or a driver amplifier.

Key Features

| Feature | Advantages |
|--|---|
| Frequency Range: 650 to 1200 MHz | Covers fixed, mobile, land mobile, aeronautical radio navigation frequency bands. |
| Excellent Gain flatness: ± 1.0 dB typ. | Excellent gain flatness minimizes distortion of amplified signals, including multi-tone, complex modulation, wide frequency range and noise-like signals. |
| Output Power 1W (+30dBm, typ) | High output power in a small package |
| Noise Figure | Low noise figure, 2.8 dB typ. and high OIP3, +41dBm typ. defines the high dynamic range of the amplifier. |

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Features

- Power ON/OFF
- Single +5V operation
- Wide bandwidth, 650 to 1200 MHz
- Excellent gain flatness: ± 1.0 dB, typ.
- Low noise figure, 2.8 dB typ.
- Output power, up to +30 dBm typ.
- Unconditionally stable
- Small size

Applications

- Buffer amplifier
- Driver amplifier
- UHF communication
- Instrumentation
- Test equipment



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+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 | | 650 | — | 1200 | MHz |
| Gain | 650 - 1200 | 28 | 31 | — | dB |
| Gain Flatness | 650 - 1200 | — | ± 1.0 | — | dB |
| Output Power at 1dB compression | 650 - 1200 | — | +30 | — | dBm |
| Output third order intercept point | 650 - 1200 | — | +41 | — | dBm |
| Noise Figure | 650 - 1200 | — | 2.8 | — | dB |
| Input VSWR | 650 - 1200 | — | 1.9 | — | :1 |
| Output VSWR | 650 - 1200 | — | 2.1 | — | :1 |
| Active Directivity (Isolation-Gain) | 650 - 1200 | — | 20 | — | dB |
| DC Supply Voltage | | — | +5.0 | — | V |
| Supply Current ¹ | | — | 750 | 850 | mA |

Note 1. Supply current is 170 mA typ., in power OFF mode, when Vcntl=0V, or Vcntl port is open.

Maximum Ratings

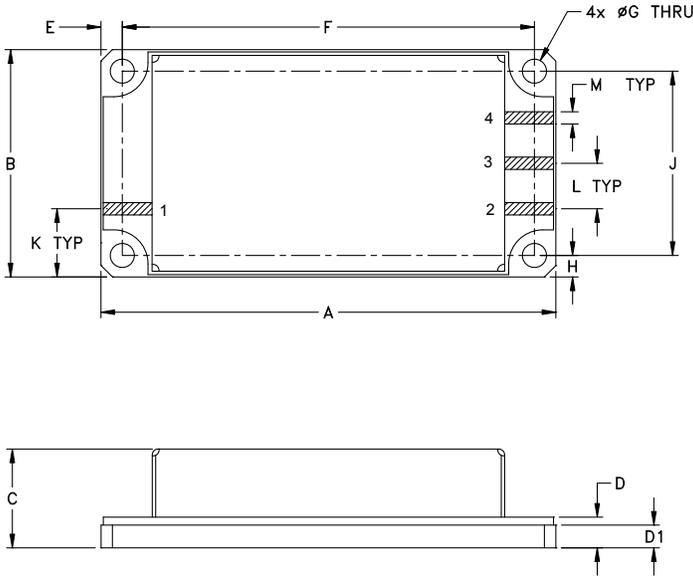
| Parameter | Ratings |
|------------------------------------|----------------|
| Operating Temperature (base plate) | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| DC Voltage | +5.5 V |
| Input RF Power (no damage) | +15 dBm |
| Power Dissipation | 4.4W |

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

Pad Connections

| | |
|-----------|---|
| RF Input | 1 |
| RF Output | 2 |
| +Vcc | 3 |
| Vcntl | 4 |

Outline Drawing



Outline Dimensions (inch/mm)

| | | | | | | | |
|-------|-------|-------|------|------|------|-------|-------|
| A | B | C | D | D1 | E | F | G |
| 2.00 | 1.00 | 0.44 | 0.14 | .110 | .094 | 1.812 | .106 |
| 50.80 | 25.40 | 11.18 | 3.56 | 2.79 | 2.39 | 46.02 | 2.69 |
| H | J | K | L | M | | | wt |
| .095 | .810 | .30 | .20 | .050 | | | grams |
| 2.41 | 20.57 | 7.62 | 5.08 | 1.27 | | | 35 |

| FREQUENCY (MHz) | GAIN (dB) | | VSWR (:1) | | NOISE FIGURE (dB) | POUT at 1 dB COMPR. (dBm) | OIP3 (dBm) |
|--------------------|-----------------|-------------------------|--------------|-----|-------------------------|---------------------------------|---------------|
| | Vcntl=+5V ON | Vcntl=0V or open OFF | IN | OUT | | | |
| 650 | 32.30 | -4.63 | 1.7 | 2.1 | 2.65 | 29.64 | 44.60 |
| 700 | 32.32 | -4.03 | 1.8 | 1.9 | 2.61 | 31.60 | 45.95 |
| 800 | 31.78 | -3.16 | 1.9 | 1.9 | 2.53 | 31.33 | 43.95 |
| 900 | 31.69 | -2.81 | 2.0 | 1.9 | 2.46 | 30.92 | 42.16 |
| 940 | 31.81 | -2.76 | 1.9 | 1.9 | 2.46 | 30.71 | 41.84 |
| 975 | 31.95 | -2.72 | 1.8 | 1.9 | 2.47 | 30.75 | 41.82 |
| 1000 | 32.08 | -2.69 | 1.7 | 1.9 | 2.46 | 30.52 | 41.83 |
| 1050 | 32.29 | -2.57 | 1.5 | 1.8 | 2.50 | 30.57 | 42.07 |
| 1100 | 32.37 | -2.29 | 1.3 | 1.9 | 2.54 | 30.39 | 42.19 |
| 1150 | 32.09 | -1.59 | 1.1 | 2.0 | 2.54 | 29.95 | 42.11 |
| 1180 | 31.67 | -1.00 | 1.2 | 2.1 | 2.55 | 29.63 | 41.86 |
| 1200 | 31.25 | -0.56 | 1.3 | 2.2 | 2.56 | 29.23 | 41.34 |

