



COAXIAL

High Power Amplifier

ZHL-100W-13+

50Ω 100W 800 to 1000 MHz

FEATURES

- Saturated Power 100W typ.
- Wide bandwidth, usable 750 to 1050 MHz
- High Gain, 50 dB typ.
- Good Gain Flatness, ±1dB typ.
- Unconditionally stable
- Self protected against excessive drive, high case temp., reverse polarity and shorting/unshorting
- Can withstand short and open circuit at output while delivering 100 watts

APPLICATIONS

- AM/FM
- Multi-carrier amplification
- Broadband swept signal
- Linear pulse
- Feed-forward



Generic photo used for illustration purposes only

| | |
|------------|--------------------|
| Model No. | ZHL-100W-13+ |
| Case Style | BT1689 |
| Connectors | IN-SMA, OUT-N Type |

+RoHS Compliant
 The +Suffix identifies RoHS Compliance.
 See our website for methodologies and qualifications

ELECTRICAL SPECIFICATIONS AT 25°C

| Parameter | Condition (MHz) | Min. | Typ. | Max. | Units |
|---|-----------------|-------|------------------|------|-------|
| Frequency Range | | 800 | | 1000 | MHz |
| Gain ¹ | 800 - 1000 | 45 | 50 | 57 | dB |
| Gain Flatness ¹ | 800 - 1000 | - | ±1.0 | ±1.5 | dB |
| Output Power at 1dB compression | 800 - 1000 | +47.5 | +49 | - | dBm |
| Output Power at 3dB compression | 800 - 1000 | +48.5 | +50 | - | dBm |
| Noise Figure | 800 - 1000 | - | 7 | 10 | dB |
| Output third order intercept point ² | 800 - 1000 | +52 | +60 | - | dBm |
| Input VSWR ¹ | 800 - 1000 | - | 1.3 | 1.6 | :1 |
| Output VSWR ¹ | 800 - 1000 | - | 1.4 | 1.6 | :1 |
| DC Supply Voltage | | - | +28 ⁴ | +30 | V |
| Supply Current ³ | | - | 10 | 14.5 | A |

1. Small signal input power -15 dBm typ.
2. Two tones, 40 dBm/tone, 1 MHz spacing.
3. Power supply should be capable of delivering 17A at start up.
4. Recommended Operating Voltage.

ABSOLUTE MAXIMUM RATINGS

| Parameter | Ratings |
|----------------------------|-------------------|
| Operating Temperature | -20 °C to +45 °C |
| Storage Temperature | -55 °C to +100 °C |
| DC Voltage | +30 V |
| Input RF Power (no damage) | +7 dBm |

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





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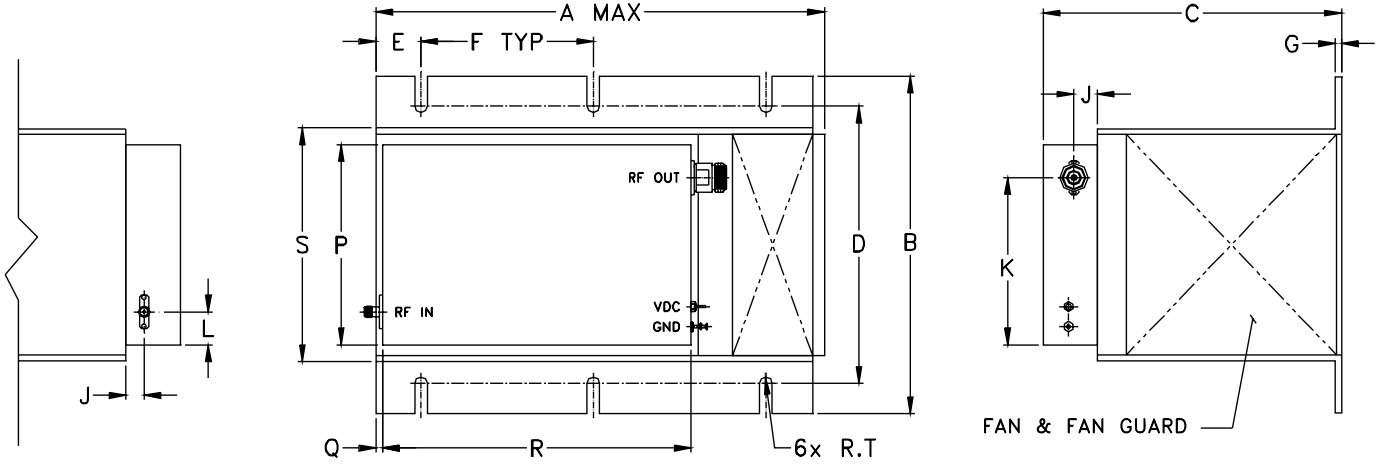
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Mini-Circuits

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OUTLINE DRAWING

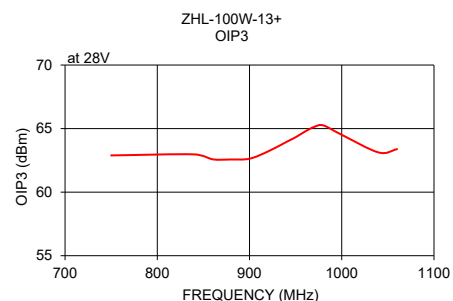
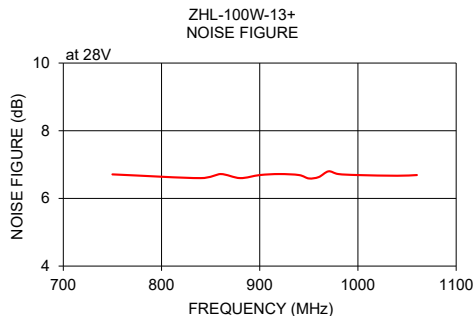
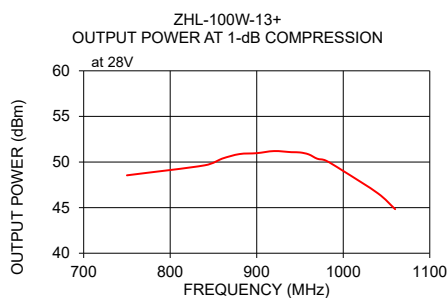
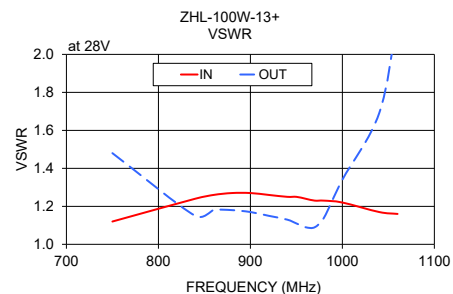
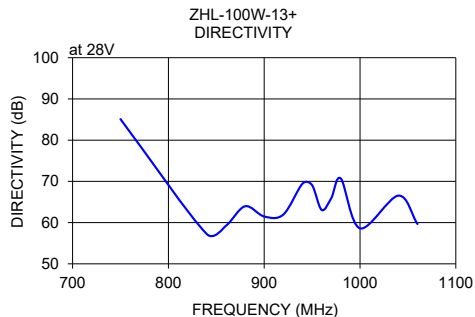
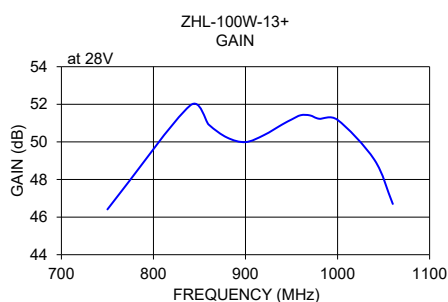


OUTLINE DIMENSIONS (Inch/mm)

| A | B | C | D | E | F | G | J | K | L | P | Q | R | S | T | wt |
|--------|--------|--------|--------|-------|-------|------|-------|-------|-------|--------|------|--------|--------|------|-------|
| 9.85 | 7.3 | 6.5 | 6.00 | .98 | 3.75 | .13 | .51 | 3.62 | .72 | 4.33 | .2 | 6.69 | 5.1 | .136 | grams |
| 250.19 | 185.42 | 165.10 | 152.40 | 24.89 | 95.25 | 3.30 | 12.95 | 91.95 | 18.29 | 109.98 | 5.08 | 169.93 | 129.54 | 3.45 | 4565 |

TYPICAL PERFORMANCE DATA AND CHARTS

| Frequency (MHz) | Gain (dB) | Directivity (dB) | VSWR (:1) | | P _{OUT} at 1 dB Compr. (dBm) | Noise Figure (dB) | OIP3 (dBm) |
|-----------------|-----------|------------------|-----------|------|---------------------------------------|-------------------|------------|
| | 30V | 30V | IN | OUT | 30V | 30V | 30V |
| 750.00 | 46.41 | 85.10 | 1.12 | 1.48 | 48.54 | 6.71 | 62.89 |
| 840.00 | 51.94 | 57.24 | 1.24 | 1.15 | 49.64 | 6.60 | 62.97 |
| 860.00 | 50.92 | 59.22 | 1.26 | 1.18 | 50.37 | 6.72 | 62.58 |
| 880.00 | 50.23 | 63.96 | 1.27 | 1.18 | 50.87 | 6.60 | 62.57 |
| 900.00 | 49.99 | 61.48 | 1.27 | 1.17 | 50.97 | 6.69 | 62.63 |
| 920.00 | 50.36 | 61.95 | 1.26 | 1.15 | 51.20 | 6.72 | 63.20 |
| 940.00 | 50.93 | 69.45 | 1.25 | 1.13 | 51.08 | 6.69 | 63.95 |
| 950.00 | 51.19 | 69.08 | 1.25 | 1.11 | 51.05 | 6.59 | 64.32 |
| 960.00 | 51.42 | 63.07 | 1.24 | 1.09 | 50.84 | 6.63 | 64.76 |
| 970.00 | 51.41 | 65.92 | 1.23 | 1.09 | 50.36 | 6.80 | 65.13 |
| 980.00 | 51.23 | 70.67 | 1.23 | 1.14 | 50.15 | 6.72 | 65.25 |
| 1000.00 | 51.17 | 58.60 | 1.22 | 1.34 | 49.02 | 6.69 | 64.51 |
| 1040.00 | 49.05 | 66.54 | 1.17 | 1.69 | 46.57 | 6.67 | 63.12 |
| 1060.00 | 46.70 | 59.66 | 1.16 | 2.18 | 44.83 | 6.69 | 63.38 |



- 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.
 - Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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