

Coaxial

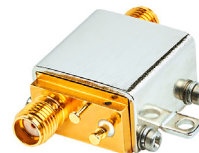
Wideband Amplifier

ZX60-V83-S+

50Ω 20 to 4700 MHz

The Big Deal

- Wideband
- High dynamic range:
 - +17dBm P1dB compression
 - +30dBm Output IP3



CASE STYLE: GC957

Product Overview

The ZX60-V83-S+ (RoHS compliant) is a very compact wideband amplifier covering 20 to 4700MHz with 17dB gain (at 2GHz). Housed in a rugged, cost effective unibody chassis, this amplifier supports a wide variety of applications requiring moderate power output, low distortion and 50 ohm matched input/output ports.

Key Features

| Feature | Advantages |
|------------------------------------|---|
| Ultra Wide band high dynamic range | The ZX60-V83-S+ covers a wide spectrum of application frequencies from VHF through 'S' band. When combined with the output power and IP3, this amplifier supports a broad array of systems and test applications. |
| Well Matched input / output ports | With typical input VSWR of 1.2:1 and output VSWR of 1.5:1 at 1GHz, the ZX60-V83-S+ can be used in cascade with many components and maintain minimal interaction or reflections. |
| Very small size, 0.75" x 0.75" | The unique unibody construction enables the ZX60-V83-S+ to be used in compact designs. |
| Unconditionally stable | No adverse effects due to loading of the input and output ports. |

Notes

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www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

Wideband Amplifier

ZX60-V83-S+

50Ω 20 to 4700 MHz

Features

- Wideband, 20 to 4700 MHz
- Output power at 1dB compression, +17 dBm typ.
- Good output IP3, 30 dBm typ.
- Good VSWR
- Unconditionally stable
- Protected by US patents 6,790,049 & 6,943,629

Applications

- Base station infrastructure
- CATV & DBS
- MMDS & wireless LAN
- LTE
- Buffer amplifier
- PCS
- Test equipment



Case Style: GC957
 Connectors Model
SMA ZX60-V83-S+

+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) | Min. | Typ. | Max. | Units |
|------------------------------------|-----------------|------|------|------|-------|
| Frequency Range | | 20 | | 4700 | MHz |
| Gain | 100 | 18.0 | 20.0 | 22.0 | dB |
| | 1000 | | 19.0 | | |
| | 2000 | 15.0 | 16.8 | 18.5 | |
| | 3000 | | 15.0 | | |
| | 4000 | 11.5 | 13.5 | 15.0 | |
| | 4700 | | 12.3 | | |
| Output Power at 1dB compression | 100 | 15.0 | 17.0 | | dBm |
| | 1000 | 15.0 | 17.0 | | |
| | 2000 | 15.0 | 17.0 | | |
| | 3000 | | 17.0 | | |
| | 4000 | | 18.0 | | |
| | 4700 | | 17.5 | | |
| Noise Figure | 100 | | 6.0 | 7.2 | dB |
| | 1000 | | 6.0 | | |
| | 2000 | | 6.0 | 7.3 | |
| | 3000 | | 6.0 | | |
| | 4000 | | 6.5 | | |
| | 4700 | | 6.8 | | |
| Output third order intercept point | 100 | | 29.5 | | dBm |
| | 1000 | | 30.0 | | |
| | 2000 | 28.0 | 31.0 | | |
| | 3000 | | 31.0 | | |
| | 4000 | | 30.0 | | |
| | 4700 | | 29.5 | | |
| Input VSWR | 100 | | 1.10 | | :1 |
| | 1000 | | 1.20 | | |
| | 2000 | | 1.25 | 1.6 | |
| | 3000 | | 1.30 | | |
| | 4000 | | 1.20 | | |
| | 4700 | | 1.30 | | |
| Output VSWR | 100 | | 1.35 | | :1 |
| | 1000 | | 1.50 | | |
| | 2000 | | 1.70 | 2.3 | |
| | 3000 | | 1.80 | | |
| | 4000 | | 1.70 | | |
| | 4700 | | 1.75 | | |
| Active Directivity | 20-4700 | | 10 | | dB |
| DC Supply Voltage | | 4.8 | 5.0 | 5.2 | V |
| DC Supply Current | | | 72 | 82 | mA |

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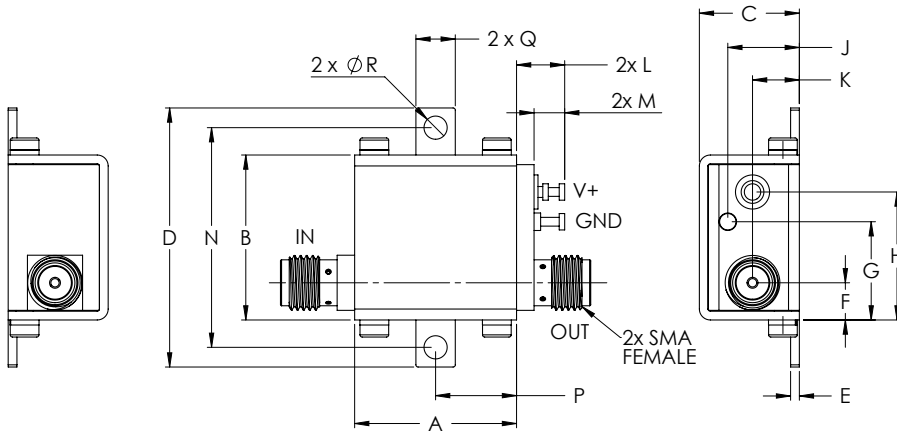


Maximum Ratings

| Parameter | Ratings |
|----------------------------|--------------------|
| Operating Temperature | -40°C to 85°C Case |
| Storage Temperature | -55°C to 100°C |
| DC Voltage | 5.5 V |
| Input RF Power (no damage) | 20 dBm |
| Power Consumption | 740 mW |

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

Outline Drawing



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

Outline Dimensions (inch / mm)

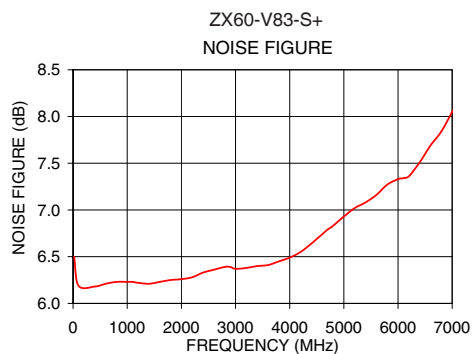
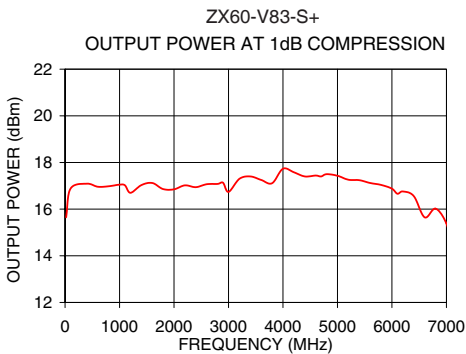
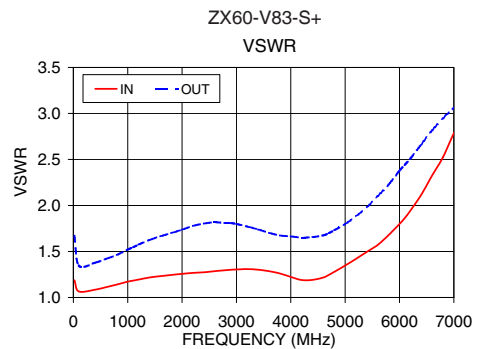
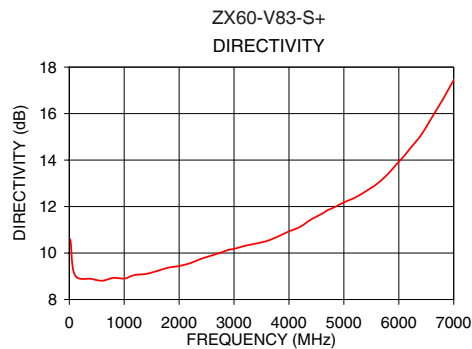
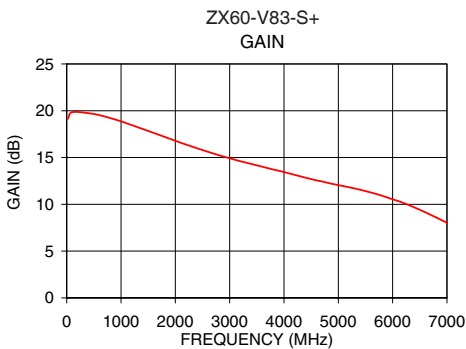
| A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | R | WT. |
|-------|-------|-------|-------|------|------|-------|-------|------|------|------|------|-------|------|------|------|------|
| | | | | | | | | | | | | | | | | GRAM |
| .74 | .75 | .46 | 1.18 | .04 | .17 | .45 | .59 | .33 | .21 | .22 | .14 | 1.00 | .37 | .18 | .106 | 23.0 |
| 18.80 | 19.05 | 11.68 | 29.97 | 1.02 | 4.32 | 11.43 | 14.99 | 8.38 | 5.33 | 5.59 | 3.56 | 25.40 | 9.40 | 4.57 | 2.69 | |

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| FREQUENCY (MHz) | GAIN (dB) | DIRECTIVITY (dB) | VSWR IN (:1) | VSWR OUT (:1) | POWER OUT @ 1dB COMPRESSION (dBm) | OUTPUT IP3 (dBm) | NF (dB) |
|-----------------|-----------|------------------|--------------|---------------|-----------------------------------|------------------|---------|
| 20 | 19.12 | 10.58 | 1.19 | 1.67 | 15.65 | 27.56 | 6.50 |
| 100 | 19.84 | 9.06 | 1.07 | 1.35 | 16.88 | 29.27 | 6.19 |
| 400 | 19.74 | 8.89 | 1.08 | 1.38 | 17.09 | 29.85 | 6.18 |
| 1000 | 18.87 | 8.90 | 1.17 | 1.52 | 17.05 | 28.75 | 6.23 |
| 1200 | 18.46 | 9.06 | 1.19 | 1.58 | 16.70 | 29.46 | 6.22 |
| 1400 | 18.05 | 9.10 | 1.22 | 1.62 | 17.03 | 29.56 | 6.21 |
| 1600 | 17.63 | 9.23 | 1.23 | 1.66 | 17.12 | 29.73 | 6.23 |
| 2000 | 16.79 | 9.44 | 1.26 | 1.74 | 16.85 | 30.55 | 6.26 |
| 2200 | 16.38 | 9.56 | 1.27 | 1.78 | 17.02 | 30.78 | 6.28 |
| 2400 | 15.99 | 9.75 | 1.27 | 1.80 | 16.94 | 31.06 | 6.33 |
| 2600 | 15.61 | 9.90 | 1.29 | 1.82 | 17.07 | 30.55 | 6.36 |
| 3000 | 14.92 | 10.18 | 1.30 | 1.80 | 16.74 | 30.69 | 6.37 |
| 3400 | 14.31 | 10.41 | 1.30 | 1.74 | 17.40 | 30.06 | 6.40 |
| 4000 | 13.45 | 10.93 | 1.22 | 1.66 | 17.73 | 30.03 | 6.49 |
| 4400 | 12.84 | 11.44 | 1.19 | 1.66 | 17.40 | 29.76 | 6.64 |
| 4700 | 12.44 | 11.84 | 1.25 | 1.70 | 17.40 | 29.61 | 6.79 |
| 5000 | 12.05 | 12.18 | 1.35 | 1.80 | 17.43 | 29.49 | 6.93 |
| 6000 | 10.54 | 13.93 | 1.80 | 2.38 | 16.88 | 28.86 | 7.33 |
| 6600 | 9.15 | 15.82 | 2.33 | 2.82 | 15.65 | 28.17 | 7.69 |
| 7000 | 8.02 | 17.44 | 2.78 | 3.06 | 15.38 | 27.77 | 8.05 |



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Amplifier

ZX60-V83-S+

Typical Performance Data

**NOTE: Use PDF Bookmarks to view DATA at required conditions
or to view GRAPHS.**

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: I = 69mA, Vd = 5V @Temperature = +25degC

| FREQ | Gain | Isolation | Input Return Loss | Output Return Loss | Stability | | IP3 Output | 1dB Comp. Output | Noise Figure |
|-------|-------|-----------|-------------------|--------------------|-----------|-------|------------|------------------|--------------|
| | | | | | K | Delta | | | |
| (MHz) | (dB) | (dB) | (dB) | (dB) | K | Delta | (dBm) | (dBm) | (dB) |
| 20 | 19.12 | 29.70 | 21.36 | 12.01 | 1.74 | 0.32 | 27.19 | 15.65 | 6.50 |
| 100 | 19.84 | 28.90 | 29.98 | 16.60 | 1.56 | 0.35 | 29.84 | 16.88 | 6.19 |
| 200 | 19.84 | 28.87 | 31.46 | 16.50 | 1.56 | 0.35 | 29.47 | 16.83 | 6.18 |
| 400 | 19.74 | 28.63 | 27.85 | 15.98 | 1.53 | 0.35 | 30.33 | 17.09 | 6.18 |
| 500 | 19.65 | 28.53 | 26.99 | 15.53 | 1.52 | 0.35 | 29.51 | 16.99 | 6.20 |
| 800 | 19.22 | 28.15 | 23.66 | 14.54 | 1.51 | 0.35 | 29.45 | 16.98 | 6.23 |
| 1000 | 18.87 | 27.77 | 22.04 | 13.70 | 1.49 | 0.34 | 29.14 | 17.05 | 6.23 |
| 1200 | 18.46 | 27.52 | 21.04 | 13.02 | 1.49 | 0.33 | 29.64 | 16.70 | 6.22 |
| 1400 | 18.05 | 27.15 | 20.17 | 12.47 | 1.49 | 0.33 | 29.85 | 17.03 | 6.21 |
| 1500 | 17.84 | 27.04 | 19.93 | 12.25 | 1.49 | 0.32 | 30.21 | 17.14 | 6.22 |
| 1600 | 17.63 | 26.86 | 19.67 | 12.06 | 1.49 | 0.32 | 30.32 | 17.12 | 6.23 |
| 1800 | 17.21 | 26.58 | 19.26 | 11.73 | 1.50 | 0.32 | 31.41 | 16.86 | 6.25 |
| 2000 | 16.79 | 26.23 | 18.88 | 11.40 | 1.50 | 0.31 | 31.78 | 16.85 | 6.26 |
| 2200 | 16.38 | 25.94 | 18.56 | 11.06 | 1.51 | 0.31 | 31.48 | 17.02 | 6.28 |
| 2400 | 15.99 | 25.74 | 18.38 | 10.86 | 1.53 | 0.30 | 32.07 | 16.94 | 6.33 |
| 2500 | 15.79 | 25.64 | 18.24 | 10.79 | 1.54 | 0.29 | 31.36 | 17.03 | 6.34 |
| 2600 | 15.61 | 25.51 | 18.05 | 10.75 | 1.54 | 0.29 | 30.77 | 17.07 | 6.36 |
| 2800 | 15.25 | 25.30 | 17.78 | 10.82 | 1.56 | 0.28 | 31.23 | 17.08 | 6.39 |
| 3000 | 14.92 | 25.10 | 17.58 | 10.89 | 1.58 | 0.28 | 31.10 | 16.74 | 6.37 |
| 3200 | 14.60 | 24.91 | 17.48 | 11.11 | 1.61 | 0.27 | 30.90 | 17.30 | 6.38 |
| 3400 | 14.31 | 24.72 | 17.65 | 11.37 | 1.63 | 0.27 | 30.62 | 17.40 | 6.40 |
| 3500 | 14.17 | 24.65 | 17.78 | 11.51 | 1.65 | 0.27 | 30.48 | 17.43 | 6.41 |
| 3800 | 13.72 | 24.43 | 18.75 | 11.97 | 1.70 | 0.27 | 30.51 | 17.11 | 6.45 |
| 4000 | 13.45 | 24.38 | 19.96 | 12.07 | 1.76 | 0.26 | 30.64 | 17.73 | 6.49 |
| 4200 | 13.14 | 24.26 | 21.25 | 12.20 | 1.80 | 0.26 | 30.40 | 17.58 | 6.55 |
| 4400 | 12.84 | 24.28 | 21.16 | 12.14 | 1.87 | 0.26 | 30.24 | 17.40 | 6.64 |
| 4500 | 12.70 | 24.31 | 20.75 | 12.05 | 1.90 | 0.26 | 30.28 | 17.38 | 6.69 |
| 4600 | 12.56 | 24.25 | 20.19 | 11.96 | 1.91 | 0.26 | 30.08 | 17.44 | 6.74 |
| 4700 | 12.44 | 24.28 | 19.22 | 11.73 | 1.94 | 0.26 | 30.15 | 17.40 | 6.79 |
| 4800 | 12.30 | 24.24 | 18.26 | 11.45 | 1.95 | 0.27 | 30.17 | 17.50 | 6.83 |
| 5000 | 12.05 | 24.23 | 16.60 | 10.90 | 1.97 | 0.27 | 30.08 | 17.43 | 6.93 |
| 5500 | 11.42 | 24.28 | 13.55 | 9.37 | 2.02 | 0.28 | 29.56 | 17.25 | 7.11 |
| 5800 | 10.92 | 24.32 | 11.93 | 8.40 | 2.05 | 0.30 | 29.17 | 17.04 | 7.27 |
| 6000 | 10.54 | 24.47 | 10.89 | 7.79 | 2.10 | 0.30 | 29.20 | 16.88 | 7.33 |
| 6500 | 9.42 | 24.87 | 8.46 | 6.66 | 2.22 | 0.33 | 28.48 | 16.51 | 7.60 |
| 6600 | 9.15 | 24.97 | 7.99 | 6.45 | 2.24 | 0.33 | 28.52 | 15.65 | 7.69 |
| 6800 | 8.60 | 25.20 | 7.28 | 6.14 | 2.32 | 0.34 | 28.15 | 16.02 | 7.84 |
| 7000 | 8.02 | 25.46 | 6.53 | 5.89 | 2.40 | 0.35 | 28.37 | 15.38 | 8.05 |



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Amplifier

ZX60-V83-S+

Typical Performance Data

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: I = 69mA, Vd = 5V @Temperature = -40degC

| FREQ | Gain | Isolation | Input Return Loss | Output Return Loss | Stability | | IP3 Output | 1dB Comp. Output | Noise Figure |
|-------|-------|-----------|-------------------|--------------------|-----------|-------|------------|------------------|--------------|
| | | | | | K | Delta | | | |
| (MHz) | (dB) | (dB) | (dB) | (dB) | K | Delta | (dBm) | (dBm) | (dB) |
| 20 | 19.20 | 29.71 | 21.25 | 11.59 | 1.72 | 0.32 | 26.12 | 15.17 | 5.96 |
| 100 | 19.77 | 28.83 | 29.25 | 15.43 | 1.56 | 0.36 | 28.49 | 16.21 | 5.59 |
| 200 | 19.77 | 28.75 | 31.41 | 15.04 | 1.54 | 0.36 | 28.09 | 16.11 | 5.55 |
| 400 | 19.69 | 28.52 | 28.25 | 15.61 | 1.52 | 0.36 | 29.19 | 16.48 | 5.53 |
| 500 | 19.61 | 28.41 | 27.92 | 15.11 | 1.51 | 0.36 | 28.46 | 16.40 | 5.54 |
| 800 | 19.20 | 28.01 | 24.27 | 14.04 | 1.49 | 0.35 | 28.52 | 16.38 | 5.55 |
| 1000 | 18.87 | 27.66 | 23.08 | 13.28 | 1.47 | 0.35 | 28.15 | 16.42 | 5.54 |
| 1200 | 18.48 | 27.41 | 22.02 | 12.73 | 1.48 | 0.34 | 28.76 | 16.03 | 5.54 |
| 1400 | 18.09 | 27.07 | 20.37 | 12.55 | 1.47 | 0.33 | 29.17 | 16.42 | 5.53 |
| 1500 | 17.89 | 26.92 | 19.91 | 12.36 | 1.47 | 0.33 | 29.49 | 16.54 | 5.54 |
| 1600 | 17.68 | 26.75 | 19.43 | 12.20 | 1.47 | 0.33 | 29.67 | 16.54 | 5.56 |
| 1800 | 17.27 | 26.43 | 18.93 | 11.81 | 1.47 | 0.32 | 30.97 | 16.26 | 5.58 |
| 2000 | 16.85 | 26.14 | 18.81 | 11.38 | 1.48 | 0.32 | 30.50 | 16.22 | 5.57 |
| 2200 | 16.45 | 25.91 | 18.68 | 10.93 | 1.49 | 0.31 | 31.23 | 16.38 | 5.59 |
| 2400 | 16.07 | 25.72 | 18.31 | 10.74 | 1.51 | 0.30 | 31.61 | 16.35 | 5.62 |
| 2500 | 15.87 | 25.56 | 18.06 | 10.64 | 1.51 | 0.30 | 31.45 | 16.45 | 5.63 |
| 2600 | 15.69 | 25.45 | 17.91 | 10.55 | 1.51 | 0.29 | 31.43 | 16.45 | 5.65 |
| 2800 | 15.35 | 25.22 | 18.00 | 10.57 | 1.53 | 0.29 | 31.87 | 16.45 | 5.65 |
| 3000 | 15.04 | 25.01 | 18.36 | 10.58 | 1.54 | 0.29 | 31.43 | 16.04 | 5.63 |
| 3200 | 14.76 | 24.76 | 18.69 | 10.80 | 1.56 | 0.29 | 30.83 | 16.77 | 5.65 |
| 3400 | 14.49 | 24.61 | 18.79 | 11.08 | 1.59 | 0.28 | 30.58 | 16.93 | 5.66 |
| 3500 | 14.36 | 24.49 | 18.86 | 11.17 | 1.59 | 0.28 | 30.79 | 17.03 | 5.67 |
| 3800 | 13.97 | 24.27 | 18.97 | 11.72 | 1.64 | 0.28 | 30.65 | 16.58 | 5.69 |
| 4000 | 13.71 | 24.20 | 19.57 | 11.80 | 1.67 | 0.28 | 30.77 | 17.43 | 5.73 |
| 4200 | 13.44 | 24.12 | 20.45 | 11.90 | 1.72 | 0.28 | 30.98 | 17.45 | 5.80 |
| 4400 | 13.16 | 24.05 | 20.99 | 11.71 | 1.75 | 0.28 | 30.73 | 17.06 | 5.87 |
| 4500 | 13.03 | 24.07 | 21.01 | 11.62 | 1.78 | 0.28 | 31.15 | 17.19 | 5.93 |
| 4600 | 12.90 | 24.03 | 21.09 | 11.51 | 1.80 | 0.28 | 30.70 | 17.19 | 5.97 |
| 4700 | 12.77 | 24.04 | 20.48 | 11.37 | 1.82 | 0.28 | 30.81 | 17.30 | 6.03 |
| 4800 | 12.63 | 24.00 | 19.58 | 11.13 | 1.84 | 0.28 | 30.96 | 17.26 | 6.08 |
| 5000 | 12.36 | 24.02 | 17.85 | 10.65 | 1.87 | 0.28 | 30.73 | 17.34 | 6.16 |
| 5200 | 12.12 | 24.04 | 15.96 | 10.20 | 1.90 | 0.29 | 30.62 | 17.11 | 6.23 |
| 5500 | 11.69 | 24.11 | 13.63 | 9.41 | 1.94 | 0.30 | 30.12 | 17.02 | 6.30 |
| 5800 | 11.25 | 24.20 | 12.23 | 8.54 | 1.98 | 0.30 | 29.88 | 17.08 | 6.39 |
| 6000 | 10.92 | 24.30 | 11.31 | 8.00 | 2.01 | 0.31 | 30.10 | 16.91 | 6.44 |
| 6500 | 9.92 | 24.61 | 8.88 | 6.79 | 2.10 | 0.34 | 29.35 | 16.68 | 6.70 |
| 6600 | 9.67 | 24.69 | 8.35 | 6.51 | 2.11 | 0.34 | 29.24 | 16.10 | 6.81 |
| 6800 | 9.09 | 24.92 | 7.24 | 6.00 | 2.14 | 0.37 | 29.37 | 16.36 | 7.11 |
| 7000 | 8.48 | 25.27 | 6.35 | 5.64 | 2.21 | 0.38 | 29.50 | 15.64 | 7.43 |



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Typical Performance Data

Definitions:

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Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: I = 73mA, Vd = 5V @Temperature = +85degC

| FREQ | Gain | Isolation | Input Return Loss | Output Return Loss | Stability | | IP3 Output | 1dB Comp. Output | Noise Figure |
|-------|-------|-----------|-------------------|--------------------|-----------|-------|------------|------------------|--------------|
| | | | | | K | Delta | | | |
| (MHz) | (dB) | (dB) | (dB) | (dB) | K | Delta | (dBm) | (dBm) | (dB) |
| 20 | 18.88 | 30.03 | 20.77 | 11.56 | 1.83 | 0.30 | 27.58 | 15.63 | 6.95 |
| 100 | 19.82 | 28.95 | 29.99 | 17.09 | 1.58 | 0.35 | 30.55 | 17.08 | 6.68 |
| 200 | 19.83 | 28.75 | 29.47 | 17.64 | 1.55 | 0.36 | 30.19 | 17.09 | 6.68 |
| 400 | 19.70 | 28.54 | 26.47 | 16.34 | 1.52 | 0.36 | 30.88 | 17.29 | 6.69 |
| 500 | 19.59 | 28.50 | 26.08 | 15.61 | 1.53 | 0.35 | 30.17 | 17.20 | 6.71 |
| 800 | 19.14 | 28.07 | 22.87 | 14.56 | 1.51 | 0.34 | 30.09 | 17.15 | 6.75 |
| 1000 | 18.77 | 27.73 | 21.42 | 13.76 | 1.49 | 0.34 | 29.80 | 17.22 | 6.75 |
| 1200 | 18.36 | 27.45 | 20.56 | 13.12 | 1.50 | 0.33 | 30.37 | 16.94 | 6.74 |
| 1400 | 17.93 | 27.17 | 19.98 | 12.52 | 1.50 | 0.32 | 30.51 | 17.22 | 6.75 |
| 1500 | 17.71 | 26.98 | 19.84 | 12.26 | 1.50 | 0.32 | 30.90 | 17.33 | 6.76 |
| 1600 | 17.50 | 26.86 | 19.64 | 12.07 | 1.51 | 0.32 | 31.00 | 17.31 | 6.78 |
| 1800 | 17.06 | 26.53 | 19.21 | 11.75 | 1.51 | 0.31 | 32.10 | 17.07 | 6.80 |
| 2000 | 16.63 | 26.27 | 18.87 | 11.45 | 1.53 | 0.30 | 31.08 | 17.10 | 6.81 |
| 2200 | 16.22 | 25.98 | 18.49 | 11.21 | 1.54 | 0.30 | 32.13 | 17.26 | 6.85 |
| 2400 | 15.81 | 25.74 | 18.13 | 11.06 | 1.55 | 0.29 | 32.41 | 17.15 | 6.89 |
| 2500 | 15.61 | 25.65 | 17.85 | 11.04 | 1.57 | 0.29 | 31.90 | 17.26 | 6.91 |
| 2600 | 15.42 | 25.49 | 17.56 | 11.03 | 1.57 | 0.28 | 31.08 | 17.31 | 6.93 |
| 2800 | 15.04 | 25.31 | 16.98 | 11.12 | 1.60 | 0.28 | 31.41 | 17.30 | 6.96 |
| 3000 | 14.68 | 25.13 | 16.77 | 11.20 | 1.62 | 0.27 | 31.76 | 17.03 | 6.95 |
| 3200 | 14.33 | 24.97 | 16.69 | 11.39 | 1.66 | 0.26 | 31.40 | 17.43 | 6.97 |
| 3400 | 14.00 | 24.81 | 16.83 | 11.58 | 1.69 | 0.25 | 31.33 | 17.51 | 6.99 |
| 3500 | 13.84 | 24.77 | 17.02 | 11.74 | 1.72 | 0.25 | 31.14 | 17.44 | 6.99 |
| 3800 | 13.32 | 24.62 | 18.29 | 12.24 | 1.81 | 0.25 | 31.30 | 17.15 | 7.03 |
| 4000 | 12.98 | 24.54 | 19.62 | 12.44 | 1.88 | 0.24 | 31.15 | 17.55 | 7.09 |
| 4200 | 12.58 | 24.60 | 20.05 | 12.63 | 1.98 | 0.24 | 30.94 | 17.21 | 7.16 |
| 4400 | 12.21 | 24.63 | 19.42 | 12.40 | 2.06 | 0.23 | 30.29 | 17.13 | 7.25 |
| 4500 | 12.09 | 24.61 | 18.97 | 12.24 | 2.08 | 0.23 | 30.58 | 17.11 | 7.29 |
| 4600 | 11.99 | 24.54 | 18.42 | 12.03 | 2.08 | 0.24 | 30.53 | 17.17 | 7.33 |
| 4700 | 11.92 | 24.51 | 17.70 | 11.75 | 2.08 | 0.24 | 30.57 | 17.09 | 7.37 |
| 4800 | 11.84 | 24.49 | 16.97 | 11.38 | 2.07 | 0.25 | 30.53 | 17.32 | 7.42 |
| 5000 | 11.71 | 24.30 | 15.73 | 10.86 | 2.04 | 0.26 | 30.78 | 17.35 | 7.53 |
| 5200 | 11.52 | 24.23 | 14.75 | 10.37 | 2.04 | 0.26 | 30.24 | 17.19 | 7.60 |
| 5500 | 11.13 | 24.22 | 13.86 | 9.49 | 2.07 | 0.27 | 29.83 | 17.21 | 7.69 |
| 5800 | 10.60 | 24.30 | 12.21 | 8.45 | 2.12 | 0.28 | 29.95 | 16.87 | 7.82 |
| 6000 | 10.15 | 24.44 | 11.04 | 7.75 | 2.17 | 0.29 | 30.60 | 16.66 | 7.93 |
| 6500 | 8.81 | 25.05 | 8.14 | 6.54 | 2.36 | 0.32 | 29.96 | 16.10 | 8.30 |
| 6600 | 8.52 | 25.15 | 7.61 | 6.38 | 2.38 | 0.33 | 29.34 | 15.10 | 8.41 |
| 6800 | 7.94 | 25.44 | 6.93 | 6.17 | 2.49 | 0.33 | 28.79 | 15.36 | 8.59 |
| 7000 | 7.37 | 25.66 | 6.33 | 6.02 | 2.58 | 0.34 | 29.35 | 14.80 | 8.75 |



For detailed performance specs & shopping online see web site

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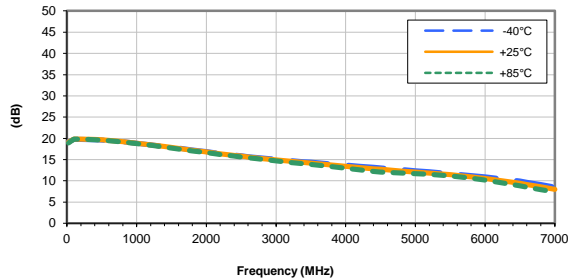
IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuits' applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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/MC/Store/Terms.jsp.

Typical Performance Curves

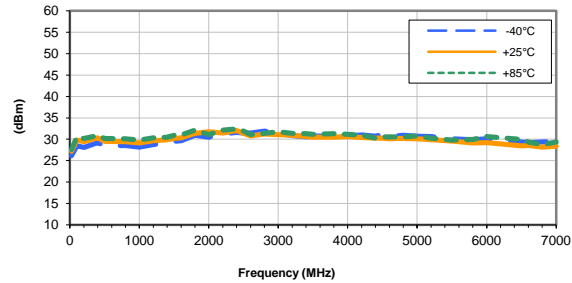
GAIN vs. FREQUENCY & TEMPERATURE

INPUT POWER = -25, VOLTAGE = 5V



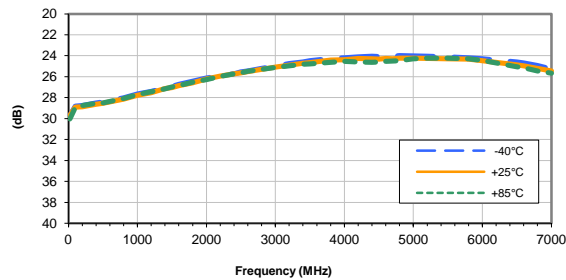
OUTPUT IP3 vs. FREQUENCY & TEMPERATURE

INPUT POWER = -10, VOLTAGE = 5V



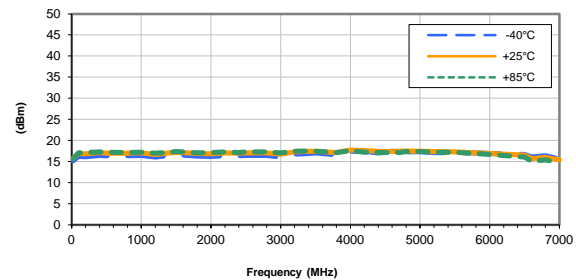
ISOLATION vs. FREQUENCY & TEMPERATURE

INPUT POWER = -25, VOLTAGE = 5V



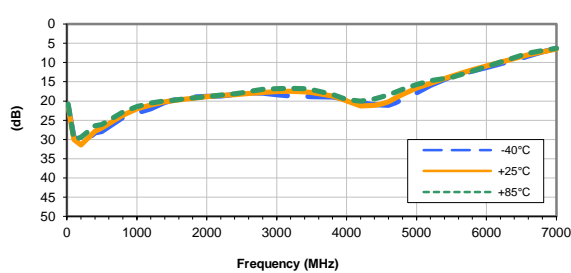
OUTPUT POWER at 1dB COMPRESSION vs. FREQUENCY & TEMPERATURE

VOLTAGE = 5V



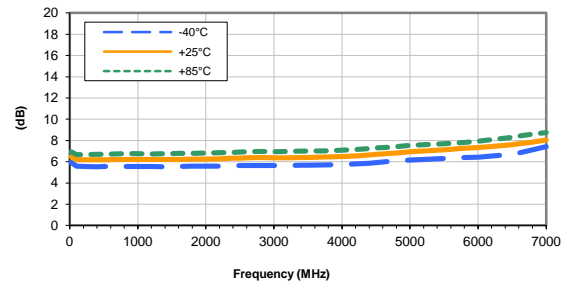
INPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE

INPUT POWER = -25, VOLTAGE = 5V



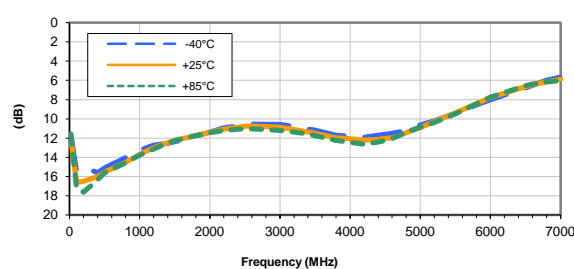
NOISE FIGURE vs. FREQUENCY & TEMPERATURE

VOLTAGE = 5V



OUTPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE

INPUT POWER = -25, VOLTAGE = 5V



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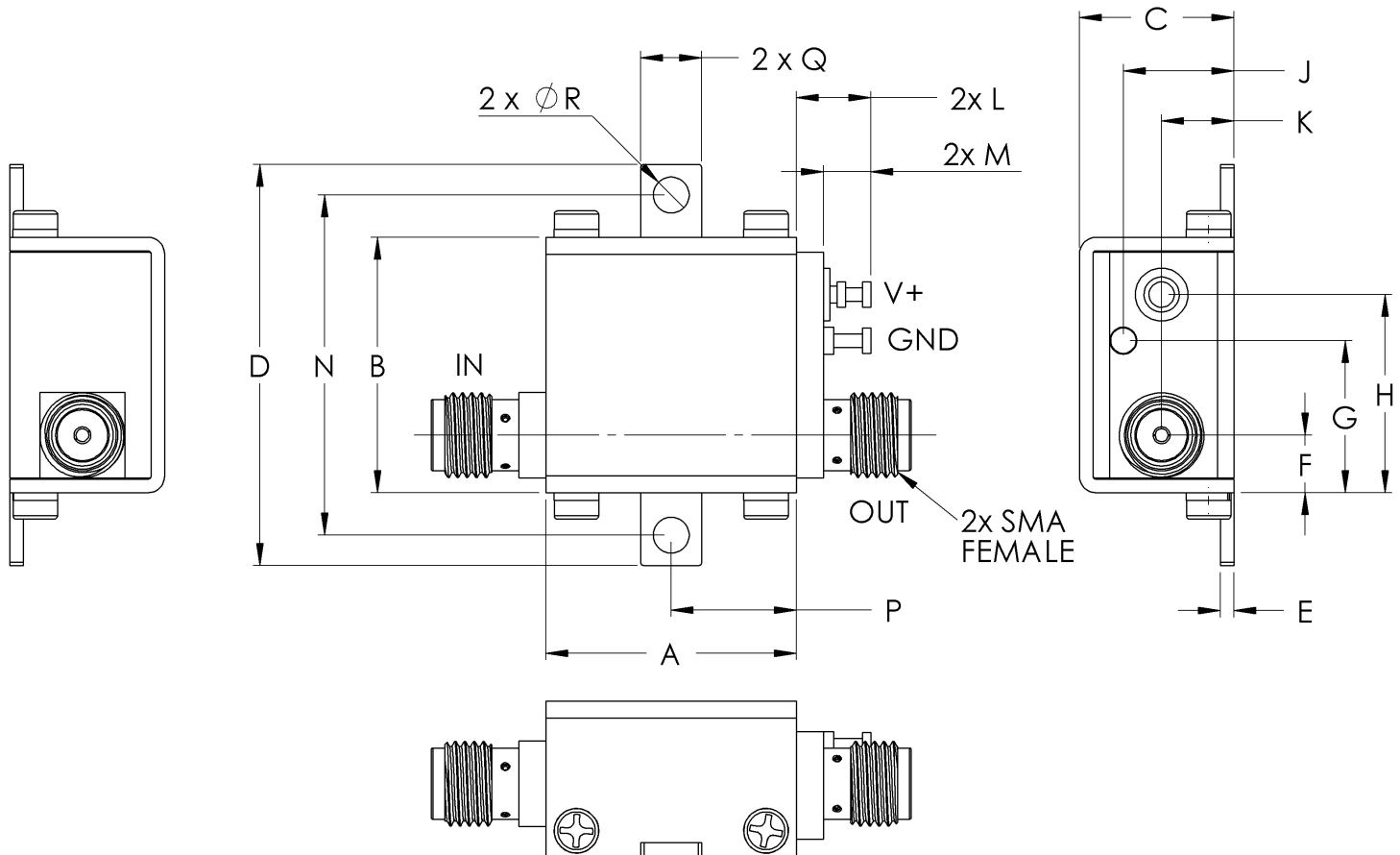
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Case Style

GC

Outline Dimensions

GC957



| CASE #. | A | B | C | D | E | F | G | H | J | K | L | M | N |
|---------|----------------|----------------|----------------|-----------------|---------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|
| GC957 | .74 (18.80) | .75 (19.15) | .46 (11.61) | 1.18 (30.07) | .04 (1.02) | .17 (4.32) | .45 (11.40) | .59 (14.86) | .33 (8.31) | .21 (5.44) | .22 (5.59) | .14 (3.56) | 1.00 (25.4) |

| CASE #. | P | Q | R | WT GRAMS |
|---------|---------------|---------------|----------------|----------|
| GC957 | .37 (9.40) | .18 (4.57) | .106 (2.69) | 23.0 |

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .015$
Tolerance on hole size and interaxes dimensions to be $\pm .005$.

Note:

1. Case material: Brass
2. Case finish: Nickel plate

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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 Case Temperature | Individual Model Data Sheet |
| Storage Temperature | -55° to 100° C Ambient Environment | Individual Model Data Sheet |
| Stabilization Bake | (non-operating) 125°C, 24 hours | - - - |
| Burn-in at Elevated Temp. | (DC on) 160 hours at 85° C | MIL-STD-202, Method 108 |
| Thermal Shock | -55° to 100°C, 5 cycles | MIL-STD-202, Method 107, Condition A, except 100°C |