

# Low Noise Amplifier

ZX60-242LN-S+

50Ω

1710 to 2400 MHz

## Features

- Ultra low noise figure, 0.75 dB typ.
- Output power, up to +17 dBm typ.
- Good output IP3, 33 dBm typ.
- Low current consumption
- Good return loss
- Unconditionally stable
- Protected by US patent 6,790,049

## Applications

- Base transceiver station, tower mounted amplifier, repeater
- WCDMA
- TD SCDMA
- PCS Rx / PCS Tx
- General purpose low noise amplifier
- Lab
- Instrumentation
- Test equipment



CASE STYLE: GA955

| Connectors | Model         |
|------------|---------------|
| SMA        | ZX60-242LN-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                    |                 | 1710 |       | 2400  | MHz   |
| Noise Figure                       | 1710 - 1880     |      | 0.70  | 0.95  | dB    |
|                                    | 1850 - 1990     |      | 0.70  | 0.95  |       |
|                                    | 1990 - 2200     |      | 0.75  | 0.95  |       |
|                                    | 2200 - 2400     |      | 0.75  | 1.00  |       |
| Gain                               | 1710 - 1880     | 12.0 | 14.0  |       | dB    |
|                                    | 1850 - 1990     | 11.5 | 13.5  |       |       |
|                                    | 1990 - 2200     | 10.5 | 12.5  |       |       |
|                                    | 2200 - 2400     | 10.0 | 11.5  |       |       |
| Gain Flatness                      | 1710 - 1880     |      | ± 0.5 | ± 1.0 | dB    |
|                                    | 1850 - 1990     |      | ± 0.3 | ± 0.7 |       |
|                                    | 1990 - 2200     |      | ± 0.5 | ± 1.0 |       |
|                                    | 2200 - 2400     |      | ± 0.4 | ± 0.8 |       |
| Output Power at 1dB compression    | 1710 - 1880     | 15.0 | 16.5  |       | dBm   |
|                                    | 1850 - 1990     | 15.0 | 16.5  |       |       |
|                                    | 1990 - 2200     | 15.0 | 16.5  |       |       |
|                                    | 2200 - 2400     | 15.0 | 16.5  |       |       |
| Output third order intercept point | 1710 - 1880     |      | 32.0  |       | dBm   |
|                                    | 1850 - 1990     |      | 32.5  |       |       |
|                                    | 1990 - 2200     |      | 33.5  |       |       |
|                                    | 2200 - 2400     |      | 34.5  |       |       |
| Input VSWR                         | 1710 - 1880     |      | 1.2   |       | :1    |
|                                    | 1850 - 1990     |      | 1.2   |       |       |
|                                    | 1990 - 2200     |      | 1.2   |       |       |
|                                    | 2200 - 2400     |      | 1.2   |       |       |
| Output VSWR                        | 1710 - 1880     |      | 1.6   |       | :1    |
|                                    | 1850 - 1990     |      | 1.7   |       |       |
|                                    | 1990 - 2200     |      | 1.7   |       |       |
|                                    | 2200 - 2400     |      | 1.6   |       |       |
| Active Directivity                 | 1710 - 2400     |      | 8     |       | dB    |
| DC Supply Voltage                  |                 |      | 5     |       | V     |
| Supply Current                     |                 |      | 40    | 46    | mA    |

### Notes

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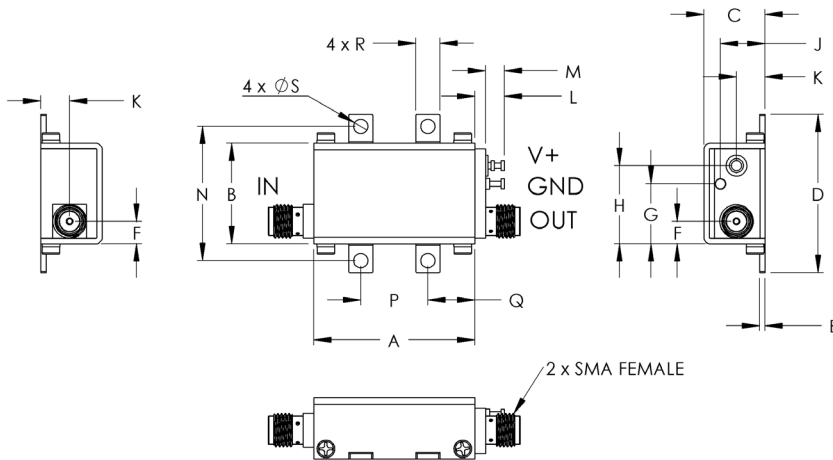


## Maximum Ratings

| 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) | +10 dBm            |
| Power Consumption          | 250 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)

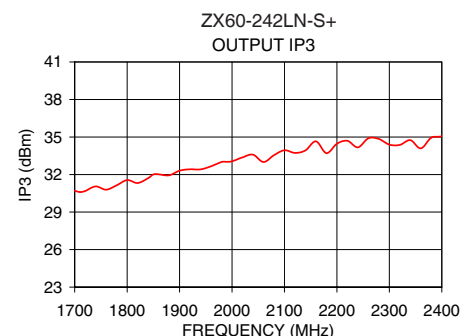
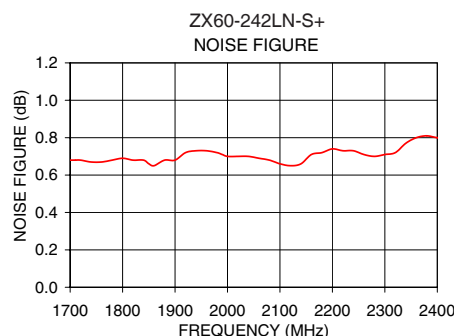
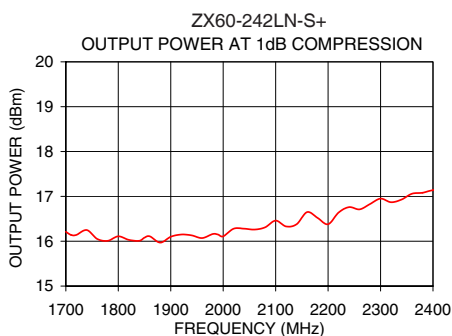
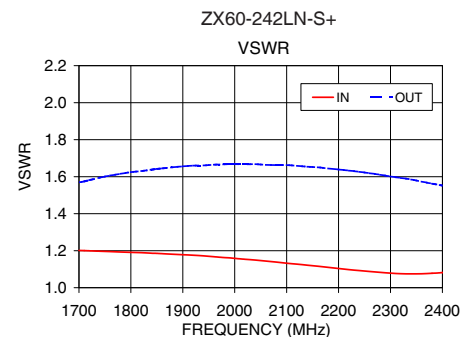
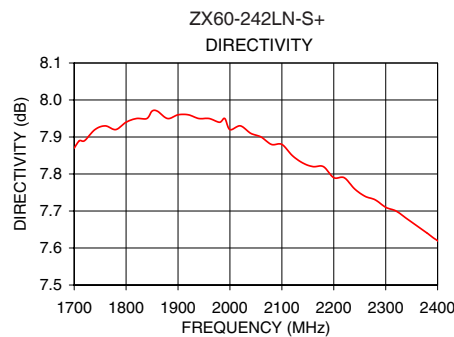
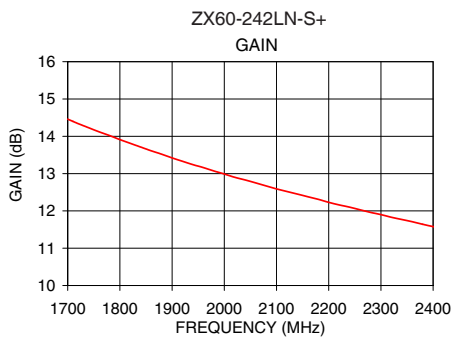
| A     | B     | C     | D     | E    | F    | G     | H     | J    | K    | L    | M    | N     | P     | Q    | R    | S    | wt.   |
|-------|-------|-------|-------|------|------|-------|-------|------|------|------|------|-------|-------|------|------|------|-------|
| 1.20  | .75   | .46   | 1.18  | .04  | .17  | .45   | .59   | .33  | .21  | .22  | .14  | 1.00  | .50   | .35  | .18  | .106 | grams |
| 30.48 | 19.05 | 11.68 | 29.97 | 1.02 | 4.32 | 11.43 | 14.99 | 8.38 | 5.33 | 5.59 | 3.56 | 25.40 | 12.70 | 8.89 | 4.57 | 2.69 | 35.0  |

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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) |
|-----------------|-----------|------------------|--------------|---------------|-----------------------------------|------------------|---------|
| 1710.00         | 14.40     | 7.89             | 1.20         | 1.57          | 16.14                             | 30.60            | 0.68    |
| 1740.00         | 14.23     | 7.92             | 1.20         | 1.59          | 16.25                             | 31.05            | 0.67    |
| 1760.00         | 14.12     | 7.93             | 1.20         | 1.61          | 16.05                             | 30.79            | 0.67    |
| 1780.00         | 14.02     | 7.92             | 1.19         | 1.62          | 16.01                             | 31.14            | 0.68    |
| 1800.00         | 13.91     | 7.94             | 1.19         | 1.62          | 16.11                             | 31.56            | 0.69    |
| 1850.00         | 13.66     | 7.97             | 1.19         | 1.64          | 16.08                             | 32.01            | 0.66    |
| 1880.00         | 13.52     | 7.95             | 1.18         | 1.65          | 15.97                             | 31.94            | 0.68    |
| 1900.00         | 13.42     | 7.96             | 1.18         | 1.66          | 16.10                             | 32.31            | 0.68    |
| 1940.00         | 13.24     | 7.95             | 1.17         | 1.66          | 16.13                             | 32.41            | 0.73    |
| 1960.00         | 13.16     | 7.95             | 1.17         | 1.66          | 16.07                             | 32.66            | 0.73    |
| 1990.00         | 13.03     | 7.95             | 1.16         | 1.67          | 16.15                             | 33.02            | 0.71    |
| 2000.00         | 12.99     | 7.92             | 1.16         | 1.67          | 16.11                             | 33.06            | 0.70    |
| 2040.00         | 12.83     | 7.91             | 1.15         | 1.67          | 16.28                             | 33.59            | 0.70    |
| 2100.00         | 12.59     | 7.88             | 1.13         | 1.66          | 16.46                             | 33.94            | 0.66    |
| 2140.00         | 12.45     | 7.83             | 1.12         | 1.65          | 16.38                             | 33.93            | 0.66    |
| 2200.00         | 12.23     | 7.79             | 1.10         | 1.64          | 16.38                             | 34.46            | 0.74    |
| 2240.00         | 12.10     | 7.76             | 1.09         | 1.63          | 16.76                             | 34.17            | 0.73    |
| 2300.00         | 11.90     | 7.71             | 1.08         | 1.60          | 16.95                             | 34.39            | 0.71    |
| 2340.00         | 11.77     | 7.68             | 1.07         | 1.58          | 16.93                             | 34.75            | 0.77    |
| 2400.00         | 11.58     | 7.62             | 1.08         | 1.55          | 17.14                             | 35.06            | 0.80    |



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