COAXIAL

Low Noise Amplifier ZX60-04183LN+

50Ω 4 to 18 GHz SMA Female

KEY FEATURES

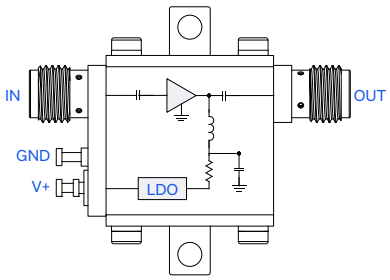
- Ultra-Wideband, 4 to 18 GHz
- Excellent Noise Figure, 2.5 dB Typ. at 15 GHz
- Low Current, 48 mA Typ.
- Voltage Regulated Internally and Reverse Voltage Protected
- Usable up to 20 GHz

Generic photo used for illustration purposes only

APPLICATIONS

- WiFi
- WLAN
- LTE/WCDMA/EDGE
- C, X & Ku Band Radar & SATCOM

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' ZX60-04183LN+ is a wideband low noise connectorized amplifier providing a unique combination of low noise figure, high IP3, and low current making it ideal for sensitive, high-dynamic-range receiver applications. This design operates on a single +5 V supply and comes in a rugged, compact unibody case (0.74x0.75x0.46") with SMA connectors, making it an excellent candidate for tough operating conditions and crowded system layouts.

ELECTRICAL SPECIFICATIONS AT +25 °C

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range		4		18	GHz
Noise Figure	4-8 8-12 12-18		2.6 2.5 2.5		dB
Gain	4-8 8-12 12-18	11 9 9	13 12 11		dB
Input Return Loss	4-8 8-12 12-18		8 11 12		dB
Output Return Loss	4-8 8-12 12-18		13 15 13		dB
Output Power at 1 dB Compression[1]	4-8 8-12 12-18		+15 +15 +15		dBm
Output IP3[2]	4-8 8-12 12-18		+26 +26 +26		dBm
Device Operating Voltage (V_{DD})		+4.75	+5.0	+9.0	V
Device Operating Current (I_{DD})			46	66	mA

1. Current increases at P1dB.
2. OIP3 measured with 0 dBm tones and 1 MHz spacing.

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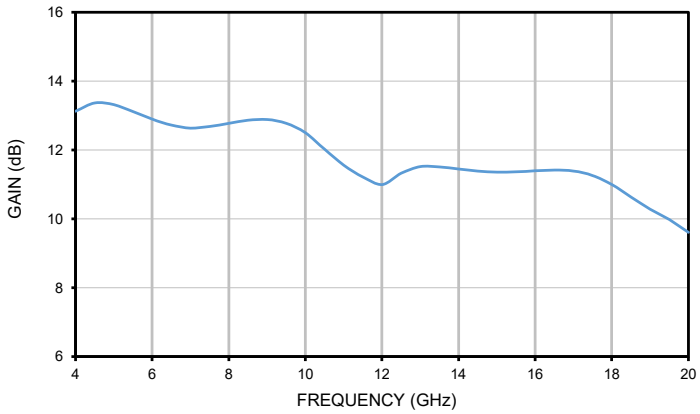
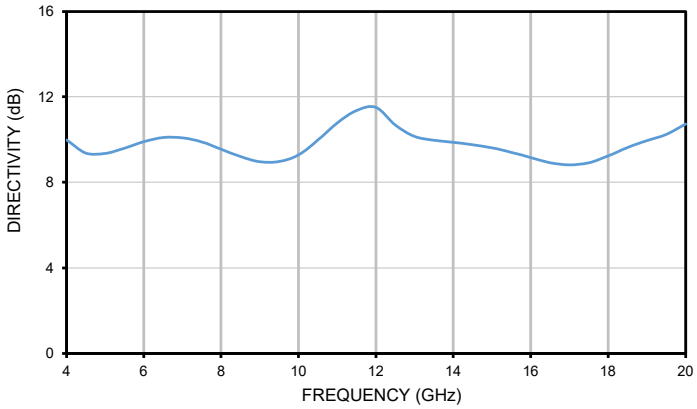
TYPICAL PERFORMANCE GRAPHS

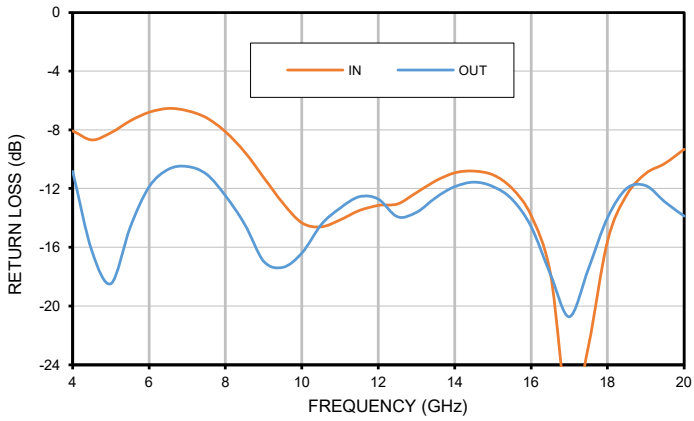
GAIN



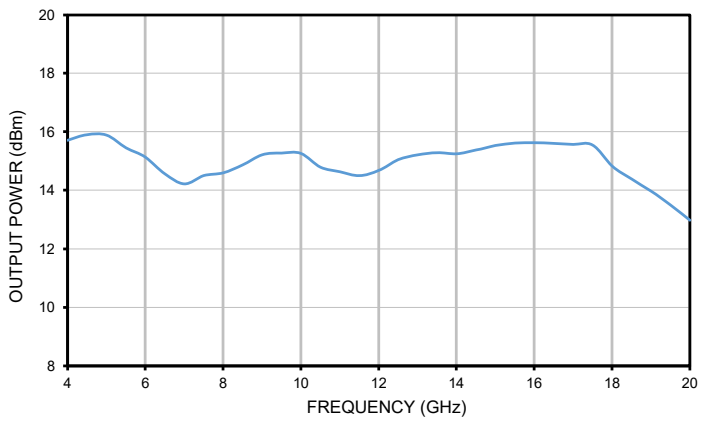
DIRECTIVITY



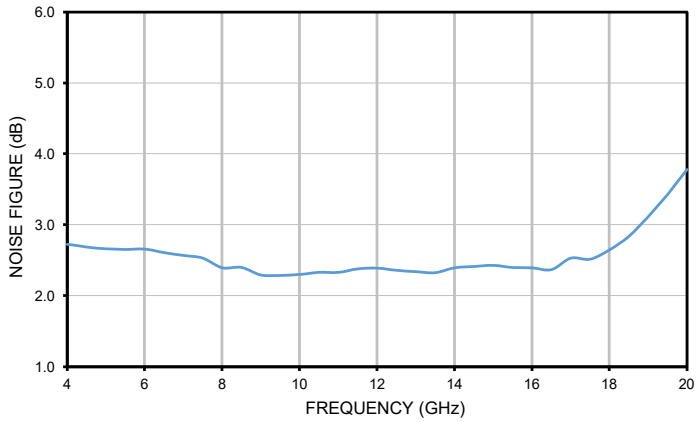
RETURN LOSS



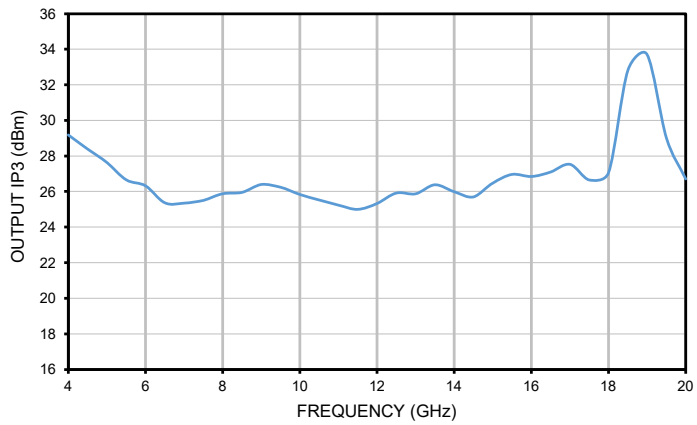
OUTPUT POWER AT 1dB COMPRESSION



NOISE FIGURE



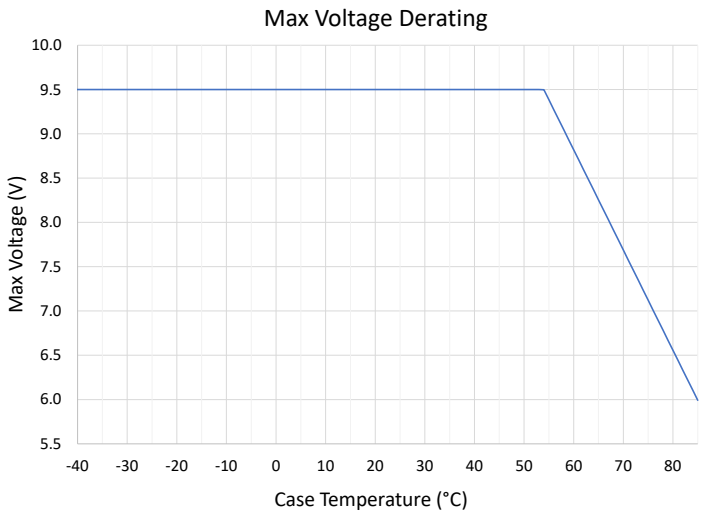
OUTPUT IP3



ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +100 °C
Total Power Dissipation	0.7 W
Input Power (CW), V_D = +5 V	+12 dBm
DC Voltage[3]	+9.5 V

3. See max voltage derating chart below.
Permanent damage may occur if any of these limits are exceeded.



DETERMINING MAXIMUM THERMAL RESISTANCE OF USERS' EXTERNAL HEAT SINK

$$\text{MAXIMUM THERMAL RESISTANCE} = \frac{\text{MAXIMUM OPERATING CASE TEMP} - \text{MAXIMUM USER AMBIENT TEMP}}{\text{POWER DISSIPATION}}$$

Example:	MAXIMUM OPERATING CASE TEMP = +50 °C (CHECK MAXIMUM RATINGS TABLE FOR THIS VALUE) MAXIMUM USER AMBIENT TEMP = +30 °C (USER DEFINED) POWER DISSIPATION = 10 WATTS (CHECK MAXIMUM RATINGS TABLE FOR THIS VALUE) THEN MAXIMUM ALLOWABLE THERMAL RESISTANCE = 2 °C/W

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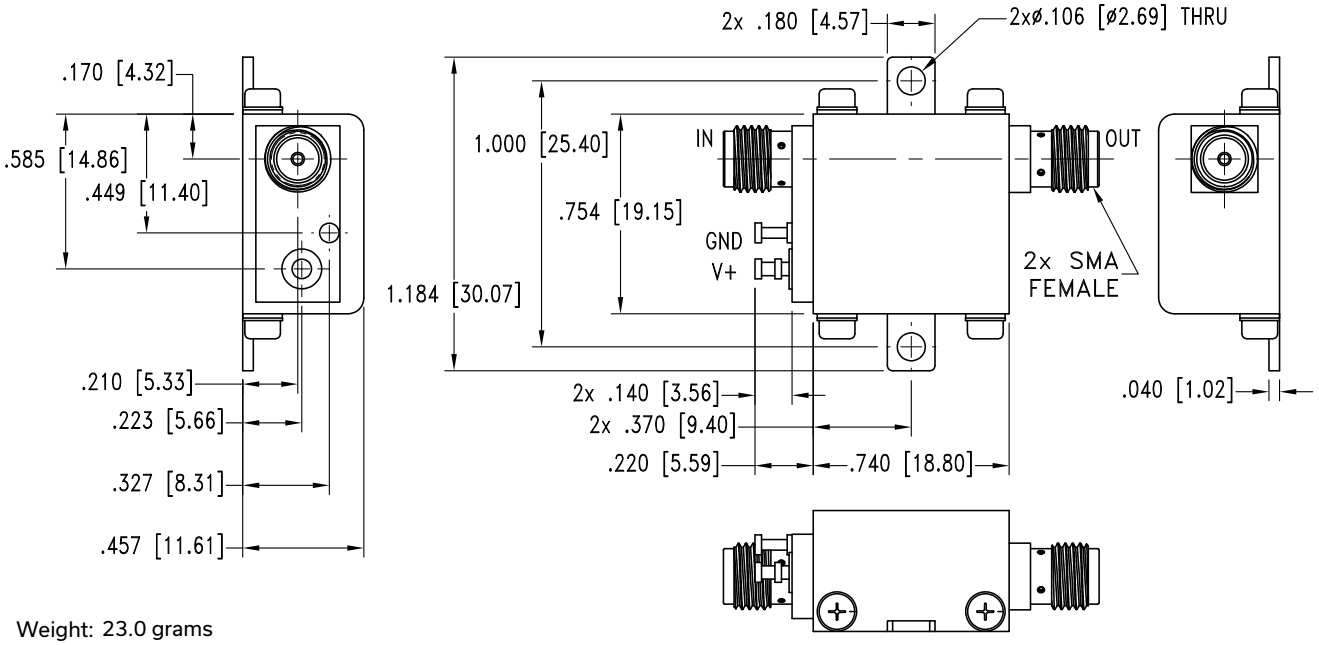
CASE STYLE DRAWING



Weight: 23.0 grams

Dimensions are in inches [mm]. Tolerances: 2 Pl.±.03; 3 Pl. ±.015 Inches

⚠ NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminal. See Application Note AN-40-010.

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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD.

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file)
RoHS Status	Compliant
Environmental Ratings	ENV23T10

ORDERING INFORMATION

Model No. Link	ZX60-04183LN+
Case Style	GC957-2
Connector	IN SMA female / OUT SMA female

NOTES

A. 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.

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

C. The parts covered by this specification document 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/terms/viewterm.html