COAXIAL

Low Noise Amplifier ZX60-04183LN+

50Ω 4 to 18 GHz SMA Female

KEY FEATURES

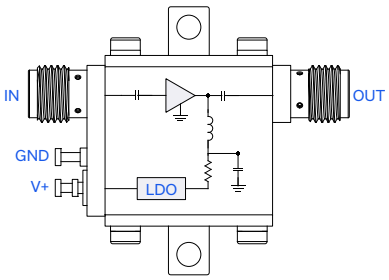
- Ultra wideband, 4 to 18 GHz
- Excellent noise figure, 2.5 dB typ. at 15 GHz
- Low current, 48 mA typ.
- Voltage regulated internally and reverse voltage protected
- Usable up to 20 GHz

Generic photo used for illustration purposes only

APPLICATIONS

- WiFi
- WLAN
- LTE/WCDMA/EDGE
- L, S and C-band Radar
- C-band Satcom

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' ZX60-04183LN+ is a wideband low noise connectorized amplifier providing a unique combination of low noise, high IP3, and low current making it ideal for sensitive, high-dynamic-range receiver applications. This design operates on a single +5V supply and comes in a rugged, compact unibody case (0.74 x 0.75 x 0.46") 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	—	2.6	—	dB
	8-12	—	2.5	—	
	12-18	—	2.5	—	
Gain	4-8	11	13	—	dB
	8-12	9	12	—	
	12-18	9	11	—	
Input Return Loss	4-8	—	8	—	dB
	8-12	—	11	—	
	12-18	—	12	—	
Output Return Loss	4-8	—	13	—	dB
	8-12	—	15	—	
	12-18	—	13	—	
Output Power at 1dB Compression[1]	4-8	—	+15	—	dBm
	8-12	—	+15	—	
	12-18	—	+15	—	
Output IP3[2]	4-8	—	+26	—	dBm
	8-12	—	+26	—	
	12-18	—	+26	—	
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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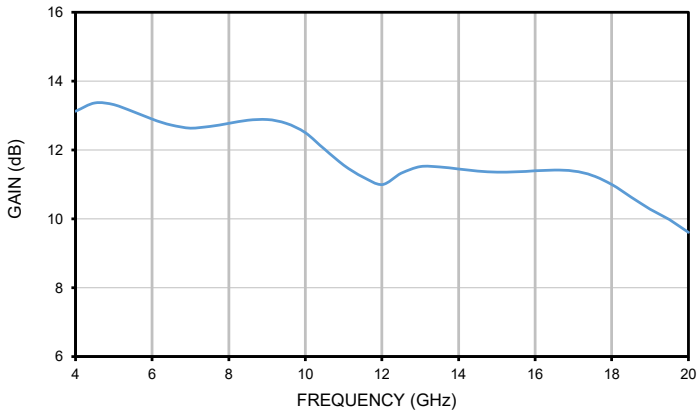
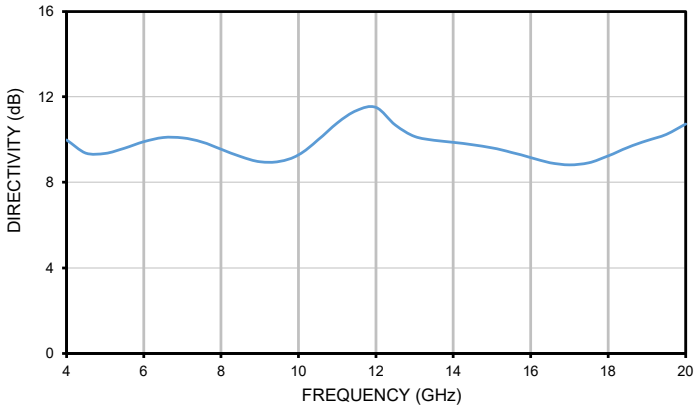
TYPICAL PERFORMANCE GRAPHS

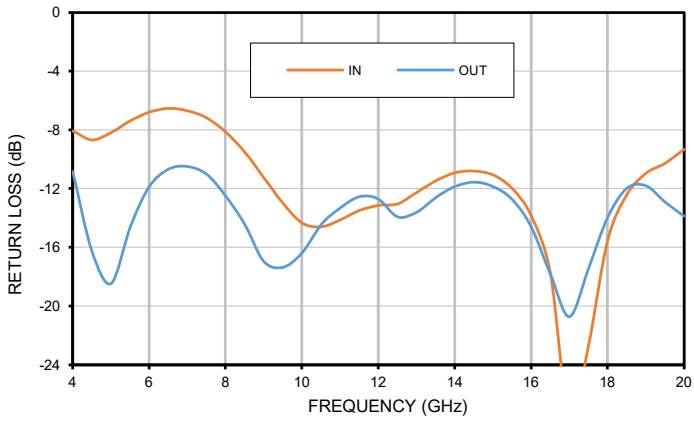
GAIN



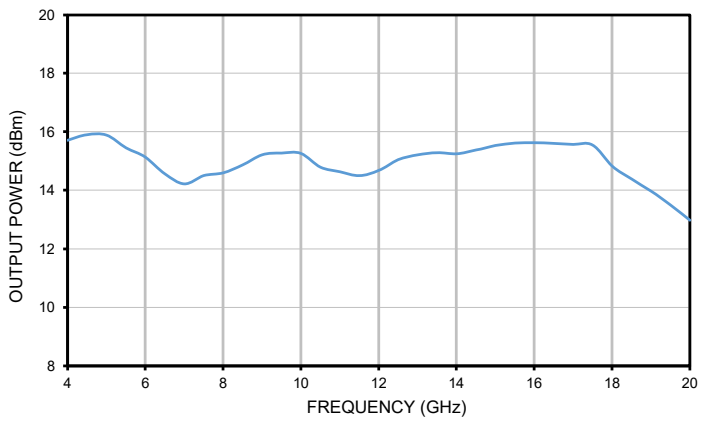
DIRECTIVITY



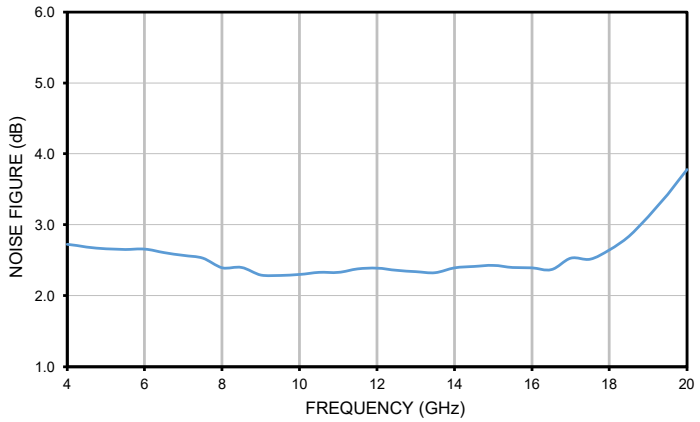
RETURN LOSS



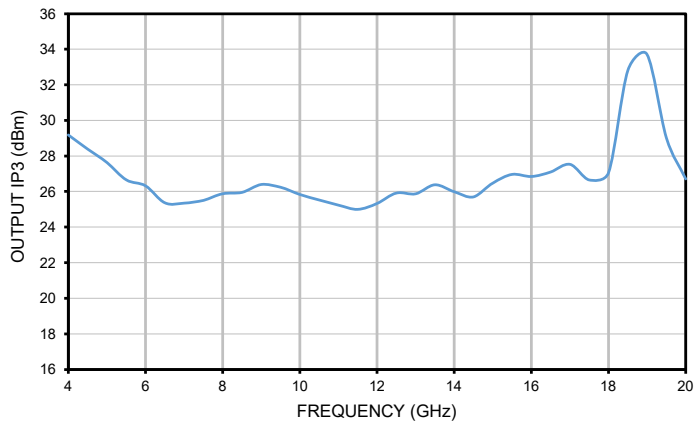
OUTPUT POWER AT 1dB COMPRESSION



NOISE FIGURE



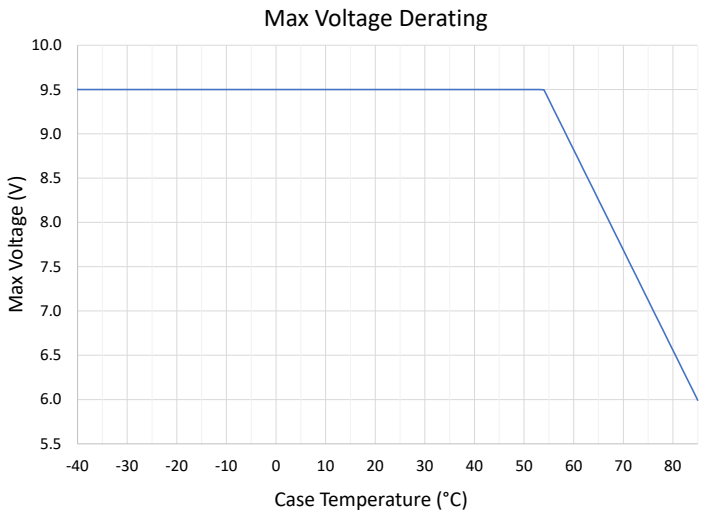
OUTPUT IP3



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), Vd=5V	+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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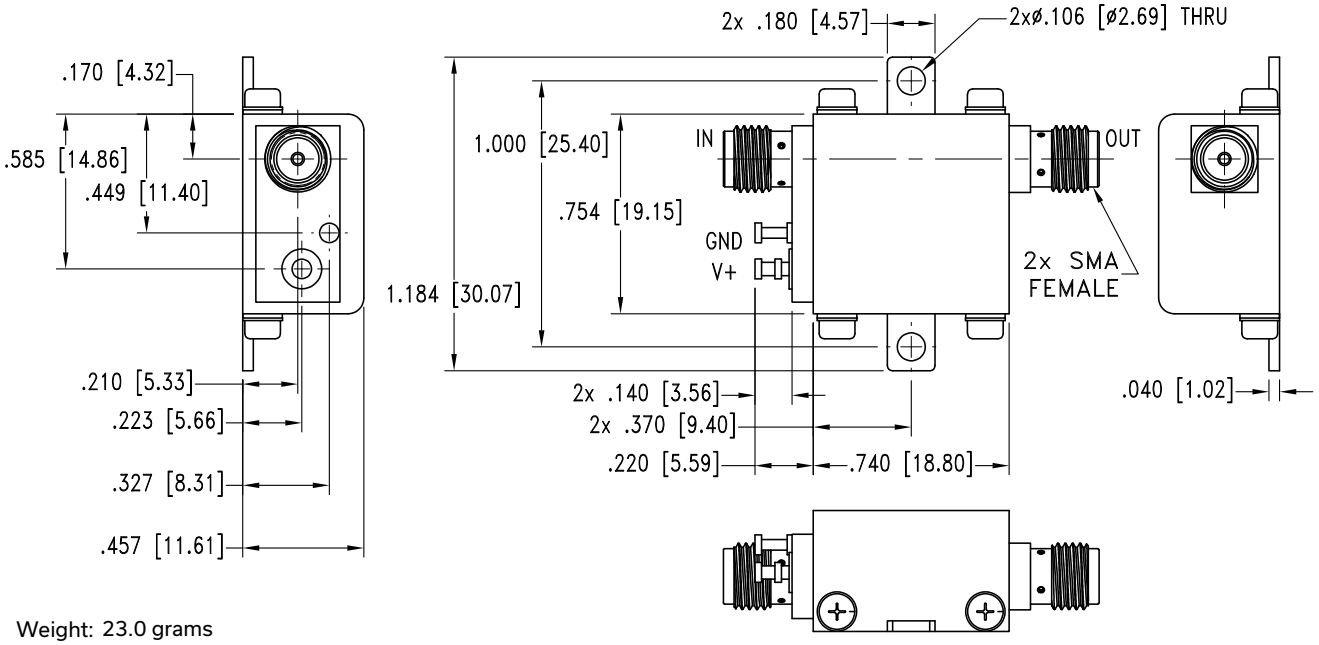
CASE STYLE DRAWING



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