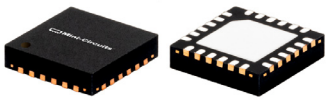
MMIC SURFACE MOUNT

Wideband Amplifier AVA-6123MP+

50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

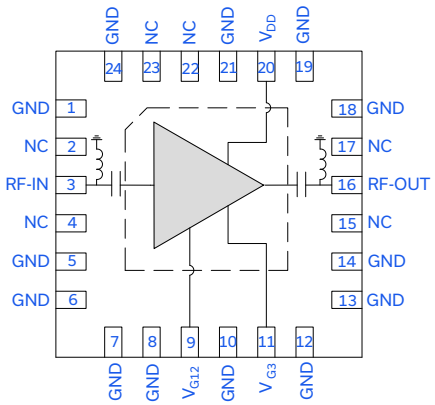
THE BIG DEAL

- High P_{SAT}, Typ. +23.2 dBm
- High Linear Gain, Typ. 22.4 dB
- Bias Condition, +5 V at 140 mA
- 4×4 mm, 24-Lead QFN-Style Package



Generic photo used for illustration purposes only

FUNCTIONAL DIAGRAM



APPLICATIONS

- Back Haul Radio
- Satellite Communications
- Radar, EW, and ECM Defense Systems

PRODUCT OVERVIEW

The AVA-6123MP+ is a GaAs MMIC multi-stage medium power driver amplifier operating from 5.6 to 11.7 GHz. The amplifier is biased at +5 V and 140 mA quiescent current providing 22.4 dB of Linear Gain and +23.2 dBm of Saturated Output Power. The device is internally DC-blocked, and a DC path to ground is present at the RF input and output ports for ESD protection. AVA-6123MP+ is matched at the input and output to 50Ω and comes in a small, low profile 4×4 mm 24-lead QFN-Style package allowing for easy integration into dense circuit board layouts.

KEY FEATURES

Features	Advantages
Medium Power, Typ. +23.2 dBm P_{SAT}	Provides high saturated output power required for Back Haul Radio and Radar Systems.
High Gain, Typ. 22.4 dB	Reduces the number of devices in the signal chain.
4×4 mm 24-Lead QFN-Style Package	A small footprint saves space in dense layouts while providing low inductance, repeatable transitions, and excellent thermal contact to the PCB. Industry standard packaging allows for ease of assembly in high volume manufacturing processes

REV. C
ECO-030473
AVA-6123MP+
MCL NY
260716

Wideband Amplifier AVA-6123MP+

50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

ELECTRICAL SPECIFICATIONS[1] AT +25°C, V_{DD} = +5 V, UNLESS NOTED OTHERWISE

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		5.6		11.7	GHz
Gain	5.6		21.9		dB
	7.1		22.4		
	8.5		22.4		
	10.0		22.6		
	11.7		21.6		
Output Power at 1 dB Compression (P1dB)	5.6		+20.7		dBm
	7.1		+21.6		
	8.5		+21.6		
	10.0		+21.6		
	11.7		+21.5		
Output Power at Saturation (P_{SAT})[2]	5.6		+22.9		dBm
	7.1		+23.3		
	8.5		+23.2		
	10.0		+23.5		
	11.7		+23.1		
Output Third-Order Intercept (P_{OUT} = +9 dBm/Tone)	5.6		+27.6		dBm
	7.1		+27.8		
	8.5		+28.2		
	10.0		+27.5		
	11.7		+25.5		
Input Return Loss	5.6		19		dB
	7.1		17		
	8.5		16		
	10.0		20		
	11.7		20		
Output Return Loss	5.6		11		dB
	7.1		15		
	8.5		18		
	10.0		15		
	11.7		11		
Isolation	5.6		63		dB
	7.1		66		
	8.5		70		
	10.0		61		
	11.7		55		
Noise Figure	5.6		6.7		dB
	7.1		6.1		
	8.5		5.9		
	10.0		5.7		
	11.7		5.2		
Device Operating Voltage (V_{DD})		+4	+5	+6	V
Device Operating Current (I_{DD})[3]			140		mA
Gate Voltage (V_{GG})[4]		-2	-0.72	-0.5	V
Device Gate Current (I_{GG})[5]			6		µA
DC Current Variation vs. Temperature[6]			47.57		µA/°C
DC Current Variation vs. Voltage[7]			+8		µA/mV

1. Tested on Mini-Circuits Characterization Test Board TB-AVA-6123MPC+. See Figure 2. Board loss de-embedded to the device.
2. P_{SAT} is defined as when the Output Power changes 0.1 dB per 1 dB change in Input Power.
3. Current at P_{IN} = -15 dBm. Increases to 152 mA at P1dB.
4. $V_{GG} = V_{G12} = V_{G3}$
5. $I_{GG} = I_{G12} = I_{G3}$
6. (Current at +95°C – Current at -40°C)/(135°C).
7. (Current at +6 V - Current at +4 V)/(+6 V - +4 V)

Wideband Amplifier AVA-6123MP+

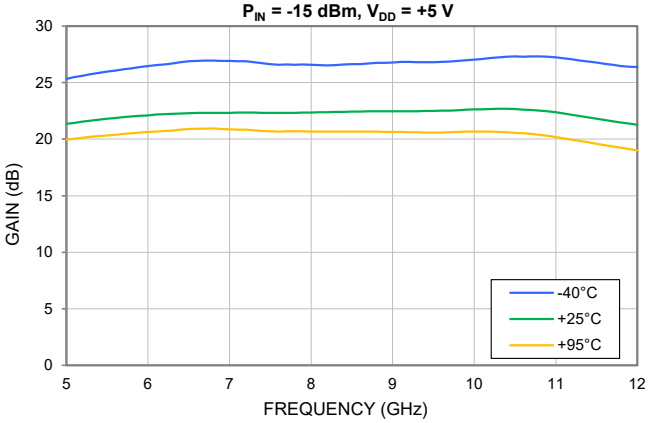
50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

TYPICAL PERFORMANCE GRAPHS

Unless otherwise specified, data was taken at I_{DD} of 140 mA.

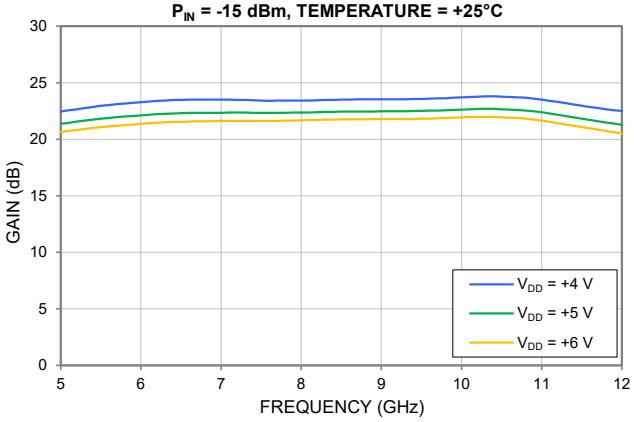
GAIN vs. TEMPERATURE

P_{IN} = -15 dBm, V_{DD} = +5 V



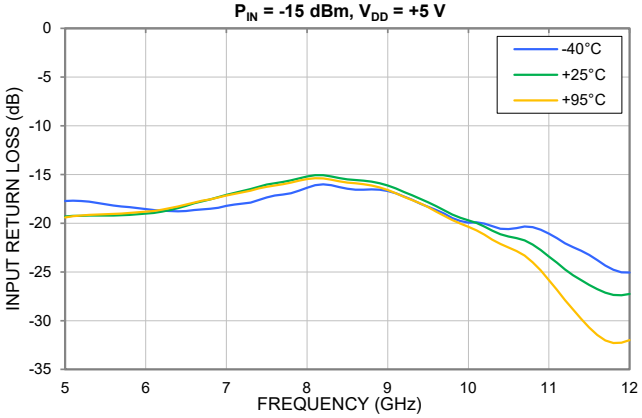
GAIN vs. DEVICE VOLTAGE

P_{IN} = -15 dBm, TEMPERATURE = +25°C



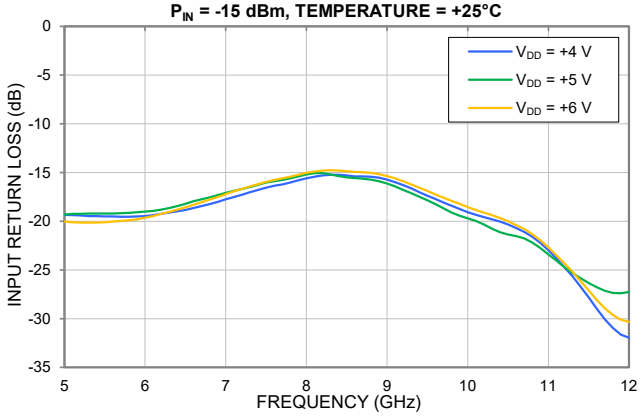
INPUT RETURN LOSS vs.TEMPERATURE

P_{IN} = -15 dBm, V_{DD} = +5 V



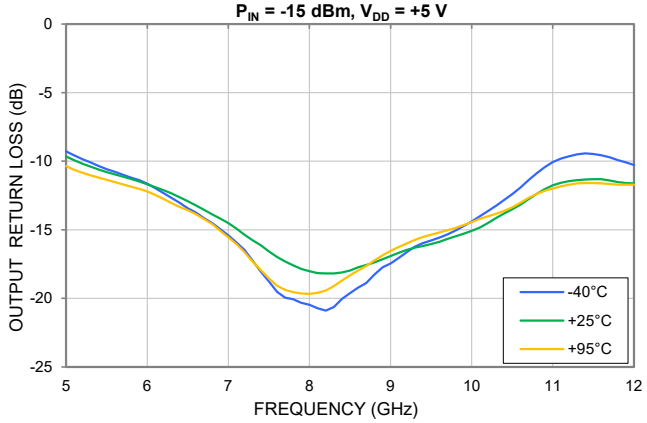
INPUT RETURN LOSS vs. DEVICE VOLTAGE

P_{IN} = -15 dBm, TEMPERATURE = +25°C



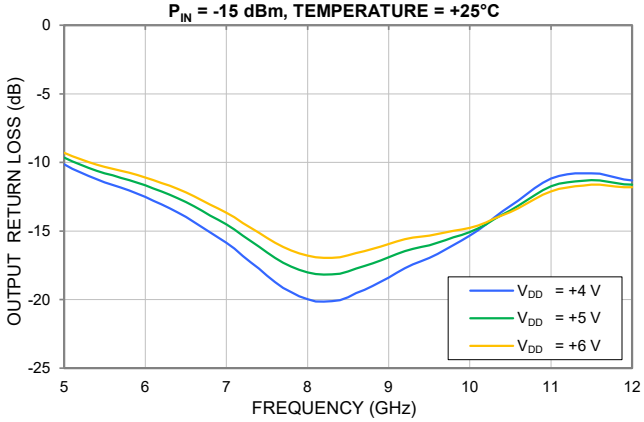
OUTPUT RETURN LOSS vs. TEMPERATURE

P_{IN} = -15 dBm, V_{DD} = +5 V



OUTPUT RETURN LOSS vs. DEVICE VOLTAGE

P_{IN} = -15 dBm, TEMPERATURE = +25°C



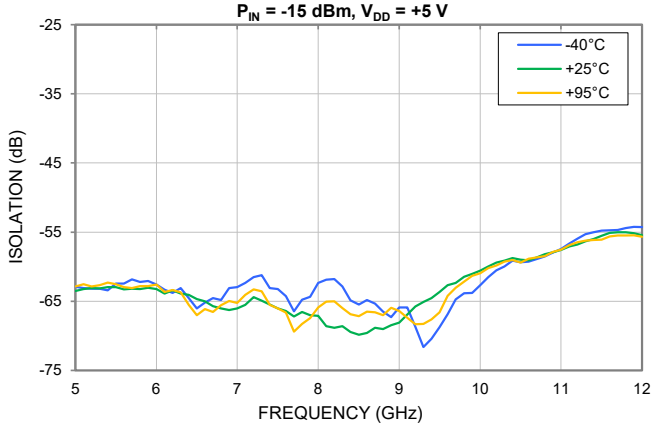
Wideband Amplifier AVA-6123MP+

50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

TYPICAL PERFORMANCE GRAPHS

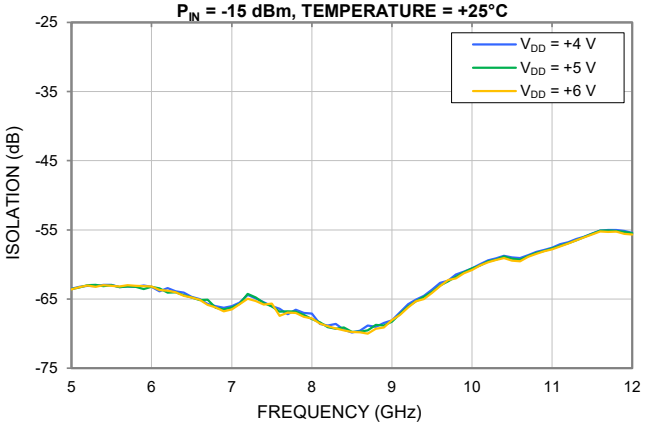
ISOLATION vs.TEMPERATURE

P_{IN} = -15 dBm, V_{DD} = +5 V



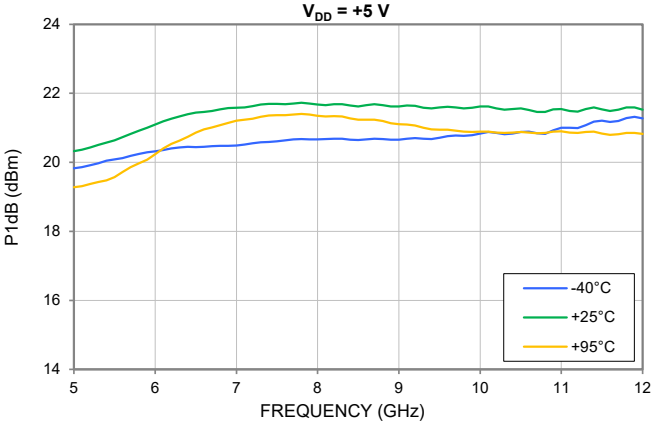
ISOLATION vs. DEVICE VOLTAGE

P_{IN} = -15 dBm, TEMPERATURE = +25°C



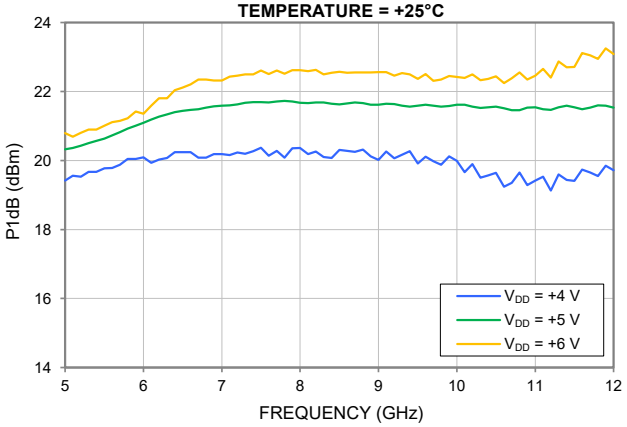
P1dB vs. TEMPERATURE

V_{DD} = +5 V



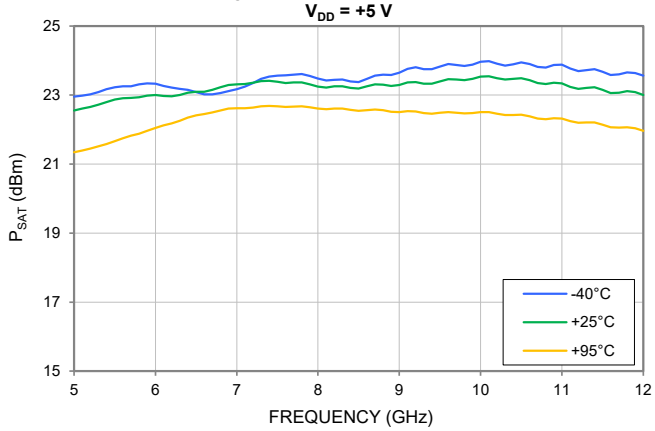
P1dB vs. DEVICE VOLTAGE

TEMPERATURE = +25°C



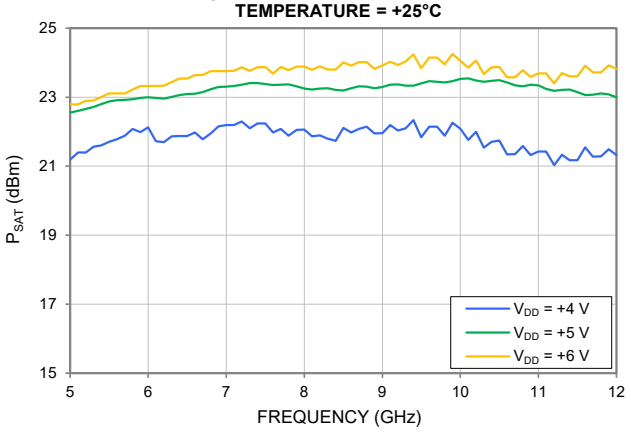
P_{SAT} vs. TEMPERATURE

V_{DD} = +5 V



P_{SAT} vs. DEVICE VOLTAGE

TEMPERATURE = +25°C



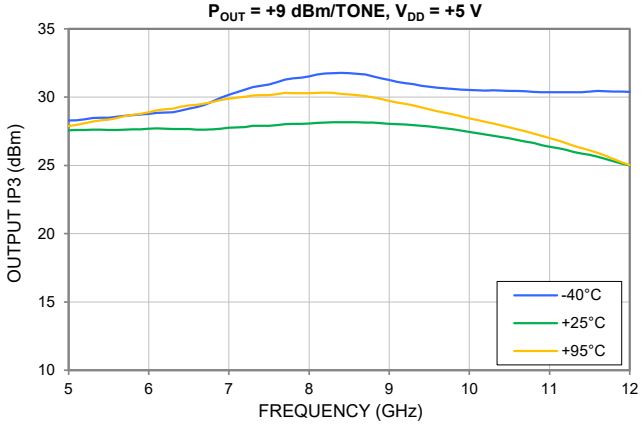
Wideband Amplifier AVA-6123MP+

50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

TYPICAL PERFORMANCE GRAPHS

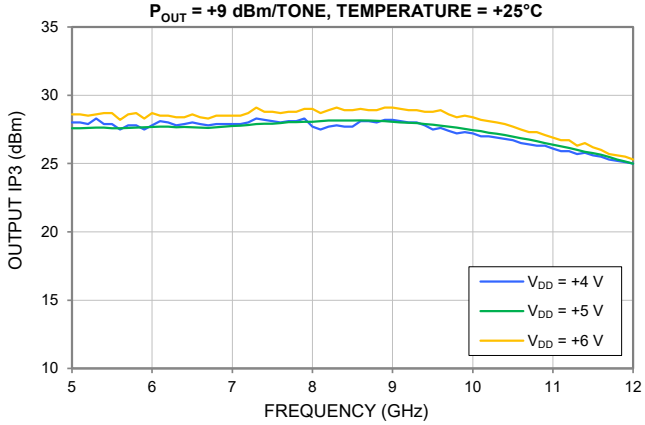
OUTPUT IP3 vs. TEMPERATURE

P_{OUT} = +9 dBm/TONE, V_{DD} = +5 V



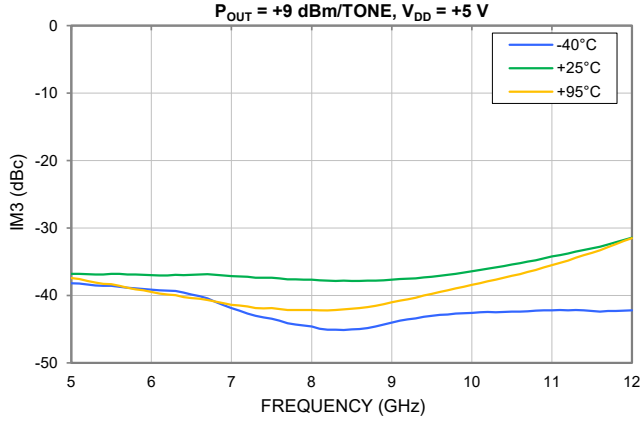
OUTPUT IP3 vs. DEVICE VOLTAGE

P_{OUT} = +9 dBm/TONE, TEMPERATURE = +25°C



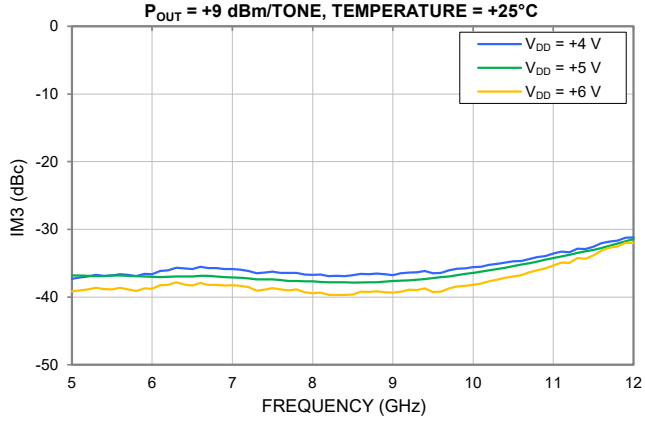
IM3 vs. TEMPERATURE

P_{OUT} = +9 dBm/TONE, V_{DD} = +5 V



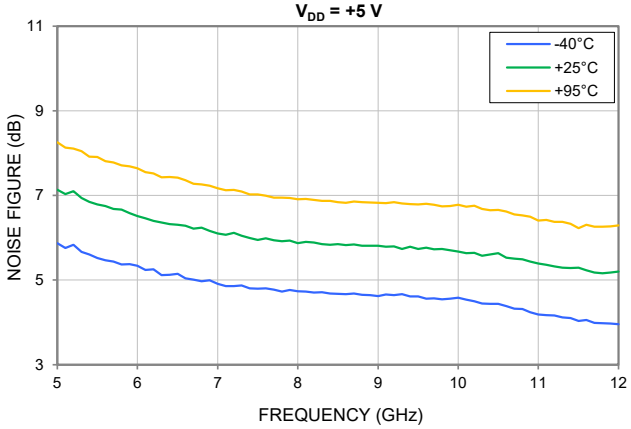
IM3 vs. DEVICE VOLTAGE

P_{OUT} = +9 dBm/TONE, TEMPERATURE = +25°C



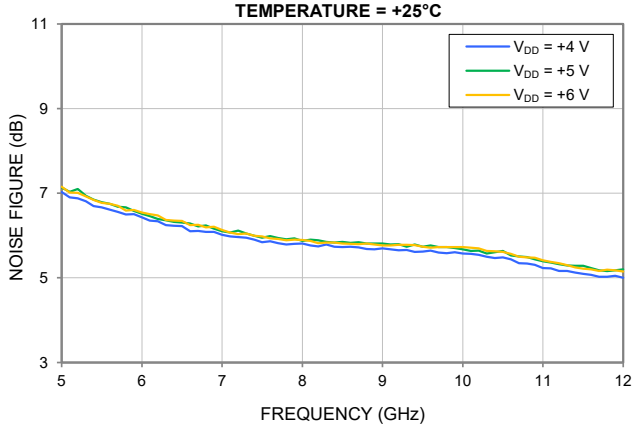
NOISE FIGURE vs. TEMPERATURE

V_{DD} = +5 V



NOISE FIGURE vs. DEVICE VOLTAGE

TEMPERATURE = +25°C



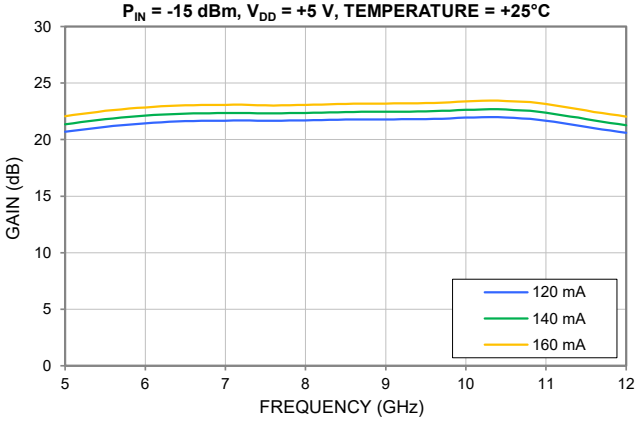
Wideband Amplifier AVA-6123MP+

50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

TYPICAL PERFORMANCE GRAPHS

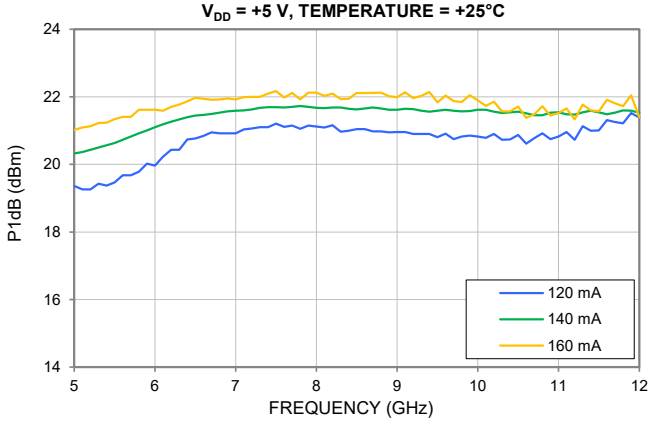
GAIN vs. CURRENT

P_{IN} = -15 dBm, V_{DD} = +5 V, TEMPERATURE = +25°C



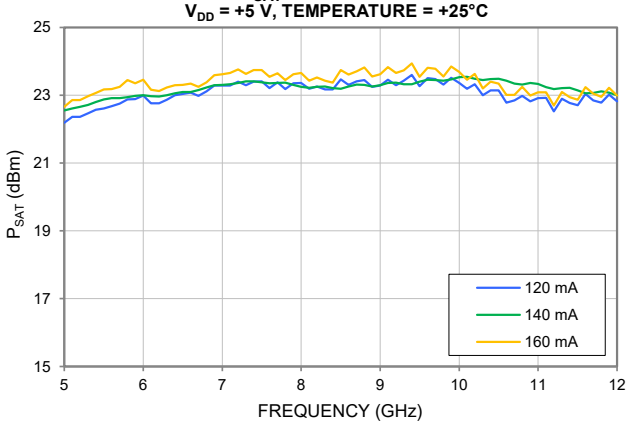
P1dB vs. CURRENT

V_{DD} = +5 V, TEMPERATURE = +25°C



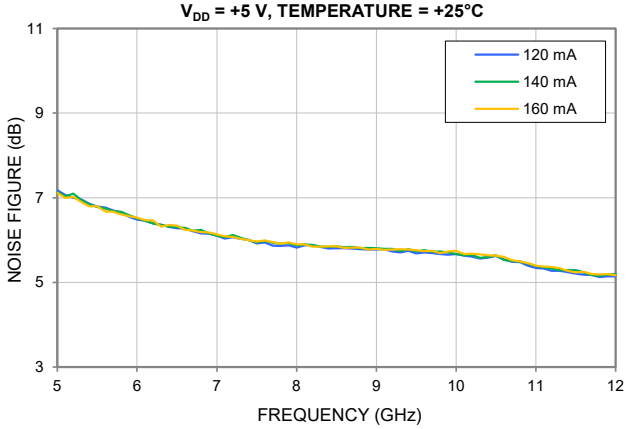
P_{SAT} vs. CURRENT

V_{DD} = +5 V, TEMPERATURE = +25°C



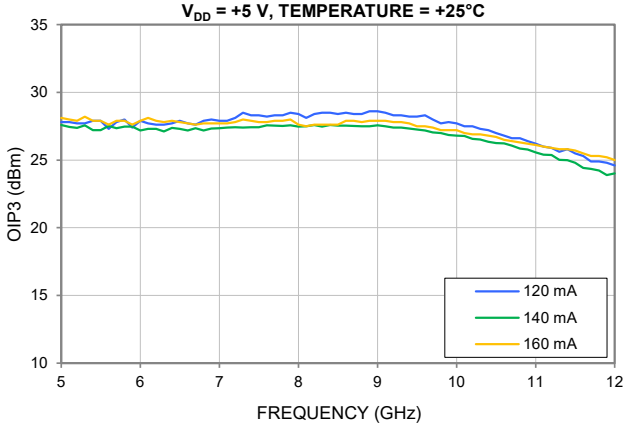
NOISE FIGURE vs. CURRENT

V_{DD} = +5 V, TEMPERATURE = +25°C



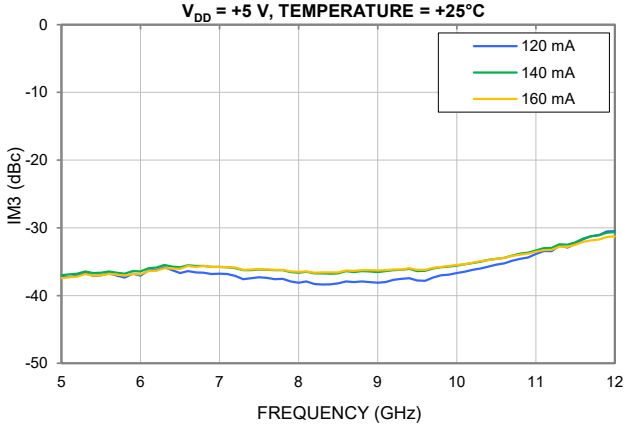
OIP3 vs. CURRENT

V_{DD} = +5 V, TEMPERATURE = +25°C



IM3 vs. CURRENT

V_{DD} = +5 V, TEMPERATURE = +25°C

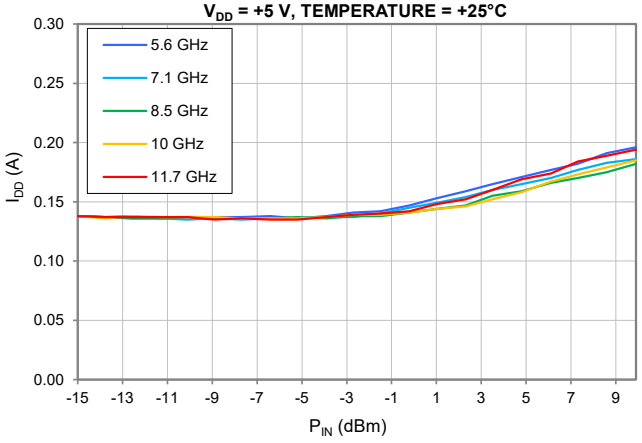


Wideband Amplifier AVA-6123MP+

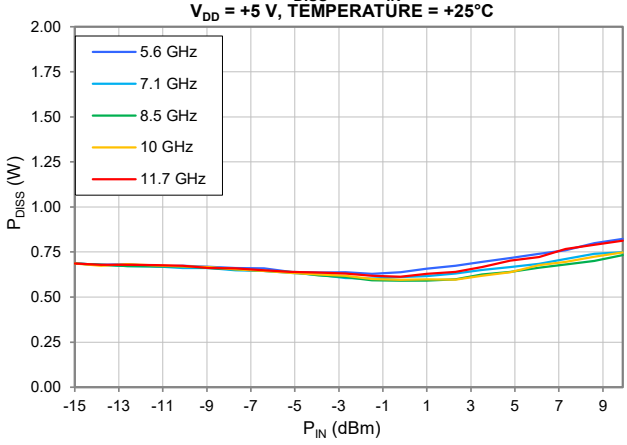
50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

TYPICAL PERFORMANCE GRAPHS

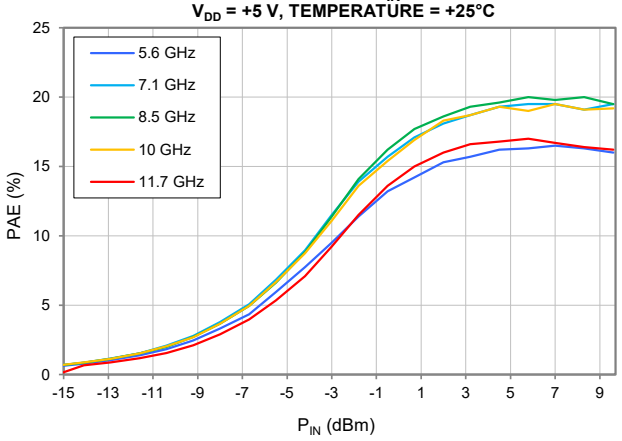
I_{DD} vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +25°C



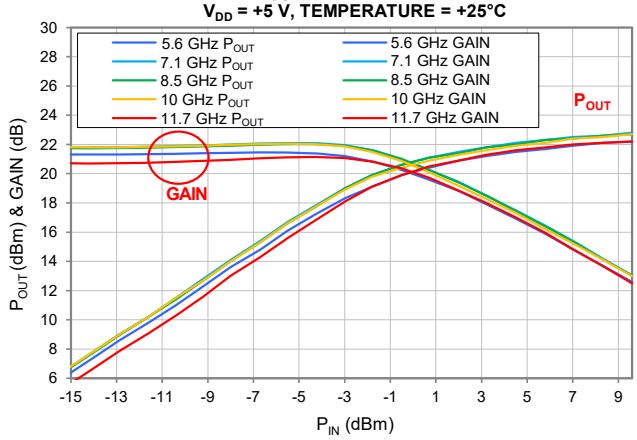
P_{DISS} vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +25°C



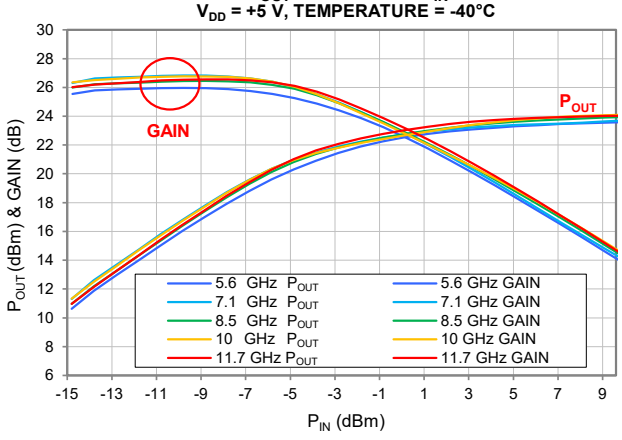
PAE vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +25°C



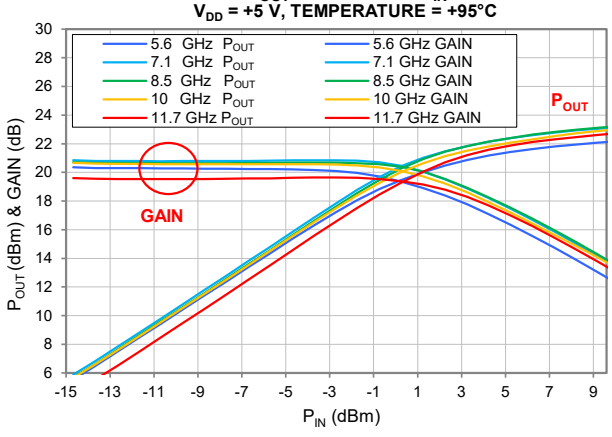
P_{OUT} & GAIN vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +25°C



P_{OUT} & GAIN vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = -40°C



P_{OUT} & GAIN vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +95°C

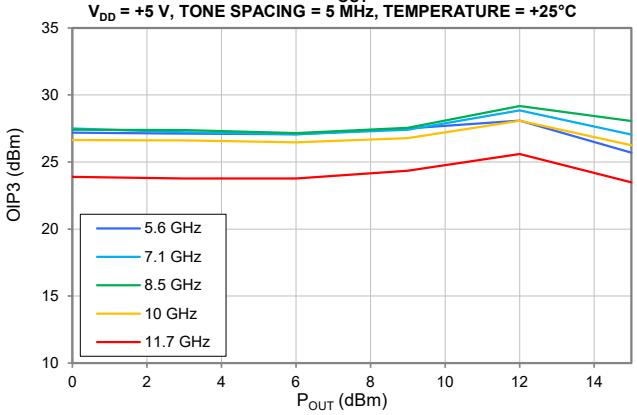


Wideband Amplifier AVA-6123MP+

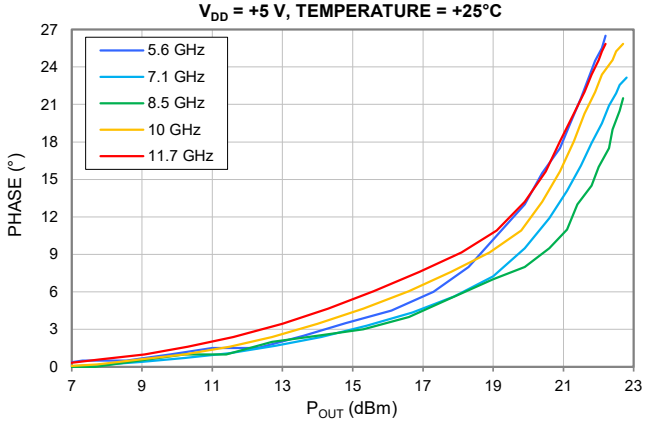
50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

TYPICAL PERFORMANCE GRAPHS

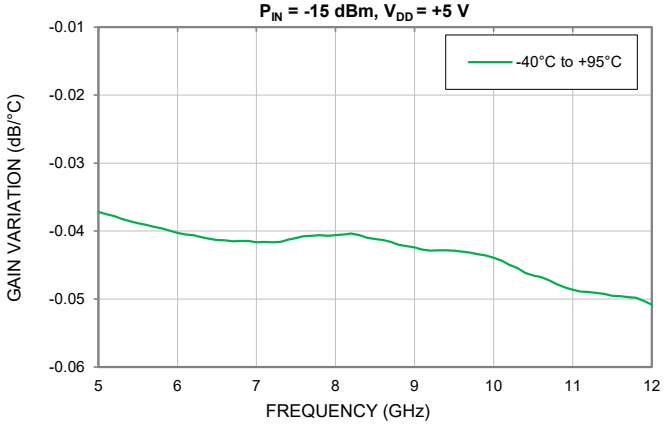
OIP3 vs. P_{OUT}/TONE
V_{DD} = +5 V, TONE SPACING = 5 MHz, TEMPERATURE = +25°C



AM - PM
V_{DD} = +5 V, TEMPERATURE = +25°C



GAIN VARIATION vs. TEMPERATURE
P_{IN} = -15 dBm, V_{DD} = +5 V



ABSOLUTE MAXIMUM RATINGS[8]

Parameter	Ratings
Operating Temperature	-40°C to +95°C
Storage Temperature	-65°C to +150°C
Junction Temperature[9]	+175°C
Total Power Dissipation	2.4 W
Input Power (CW), V_{DD} = +5 V	+22 dBm
DC Drain Voltage at V_{DD}	+8 V
DC Gate Voltage at $V_{GG} = V_{G12} = V_{G3}$	-3 V < V_{GG} < -0.4 V
DC Drain Current I_{DD}	300 mA
DC Gate Current I_{GG}	1.2 mA

8. Permanent damage may occur if any of these limits are exceeded. Maximum ratings are not intended for continuous normal operation.
9. Peak Temperature on top of Die.

THERMAL RESISTANCE

Parameter	Ratings
Thermal Resistance (Θ_{JC})[10]	35.7°C/W

10. Θ_{JC}= (Hot Spot Temperature on Die - Temperature at Ground Lead)/Dissipated Power

ESD RATING

ESD Model	Class	Voltage Range	Reference Standard
HBM	1C	1000 to < 2000	ANSI/ESDA/JEDEC JS-001-2023
CDM	C3	≥ 1000	ANSI/ESDA/JEDEC JS-002-2022

ESD HANDLING PRECAUTION: This device is designed to be Class 1C for HBM. Static charges may easily produce potentials higher than this with improper handling and can discharge into DUT and damage it. As a preventive measure Industry standard ESD handling precautions should be used at all times to protect the device from ESD damage.

MSL RATING

Moisture Sensitivity: MSL3 in accordance with IPC/JEDEC J-STD-020E/JEDEC J-STD-033C

Wideband Amplifier AVA-6123MP+

50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

FUNCTIONAL DIAGRAM

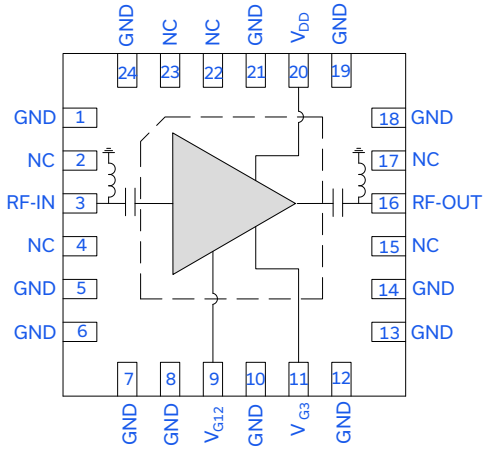


Figure 1. AVA-6123MP+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description (Refer to Fig 2)
RF-IN	3	RF-IN pad connects to RF Input port.
RF-OUT	16	RF-OUT pad connects to RF Output port.
V_{DD}	20	DC Input pad connects to Drain Voltage port.
V_{G12}	9	DC Input pad connects to First and Second Stage Gate Voltage port.
V_{G3}	11	DC Input pad connects to Third Stage Gate Voltage port.
NC	2, 4, 15, 17, 22, 23	Not used internally. Connected to ground on test board.
GND	1, 5-8, 10, 12-14, 18, 19, 21, 24, Paddle	Connects to ground.

EVALUATION BOARD

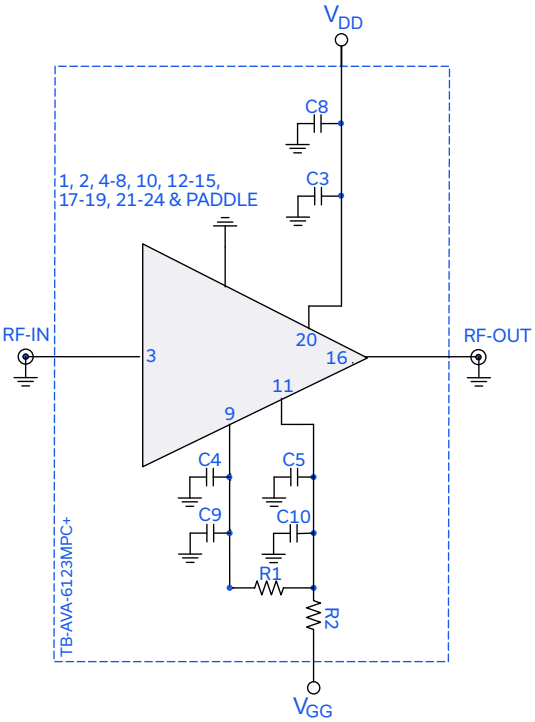


Figure 2. AVA-6123MP+ Evaluation and Characterization Circuit

Electrical Parameters and Conditions
Gain, Return Loss, Output Power at 1 dB Compression (P1dB), Output IP3 (OIP3), Saturated Output Power (P_{SAT}) and Noise Figure measured using N5247B PNA-X Microwave Network Analyzer.

Conditions:
a. Gain and Return Loss: P_{IN} = -15 dBm
b. Output IP3 (OIP3): Two tones, spaced 5 MHz apart, +9 dBm/Tone at output

Power ON/Power OFF Sequence
Caution: Permanent damage to the device will occur if the Power ON and Power OFF sequences are not followed

POWER ON:
1) Set V_{GG} = -2 V. Apply V_{GG}.
2) Set V_{DD} = +5 V. Apply V_{DD}.
3) Increase V_{GG} to obtain desired I_{DD} as shown in spec table.
4) Apply RF Signal.

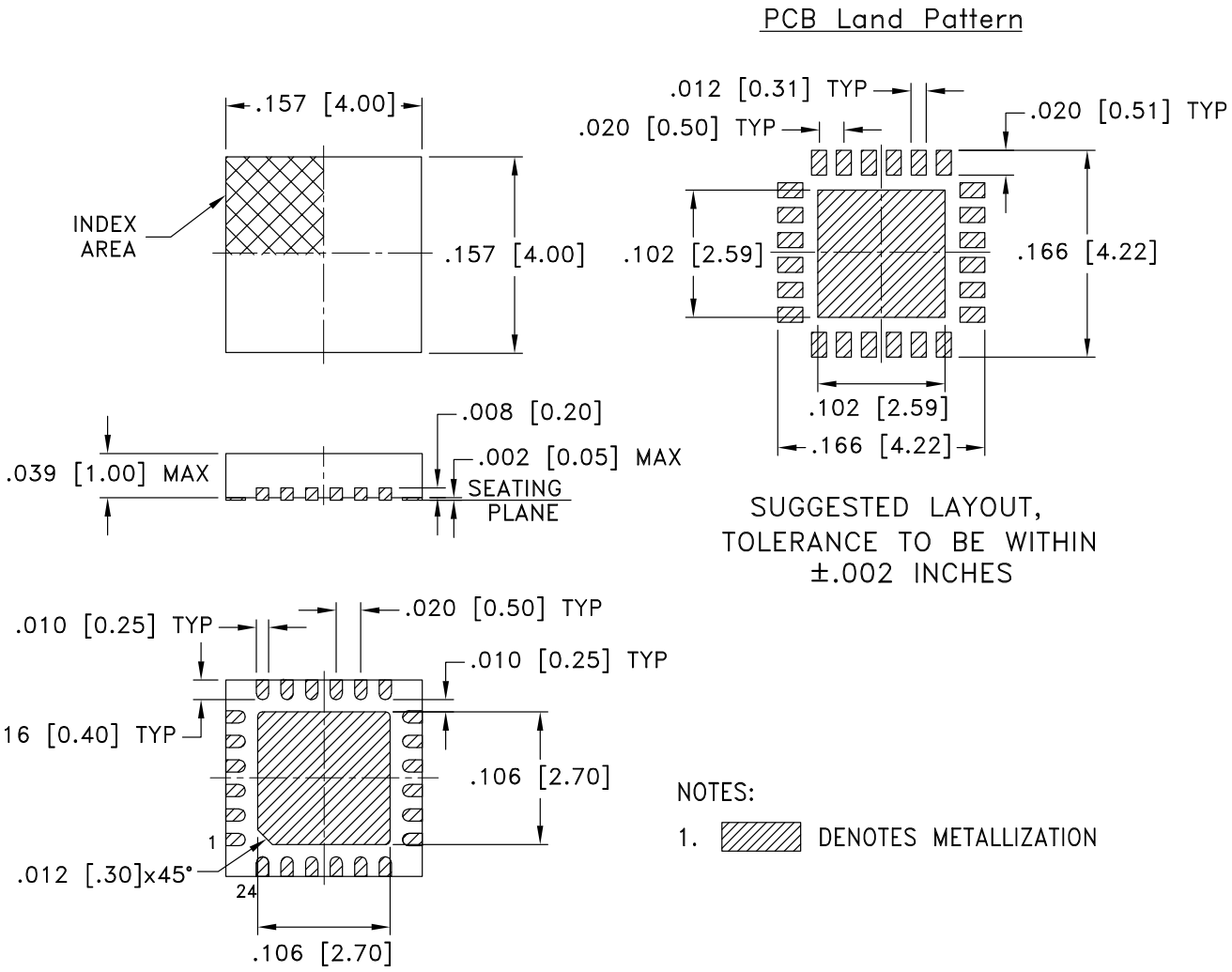
POWER OFF:
1) Turn off RF Signal.
2) Adjust V_{GG} down to -2 V.
3) Turn off V_{DD}.
4) Turn off V_{GG}

Component	Value	Size	Part Number	Manufacturer
C3 – C5	0.001 µF	0402	GRM1555C1H102JA01D	MURATA
C8 – C10	0.1 µF	0402	GRM155R71E104KE14D	MURATA
R1, R2	100Ω	0402	RK73H1ETTP1000F	KOA SPEER

Wideband Amplifier AVA-6123MP+

50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

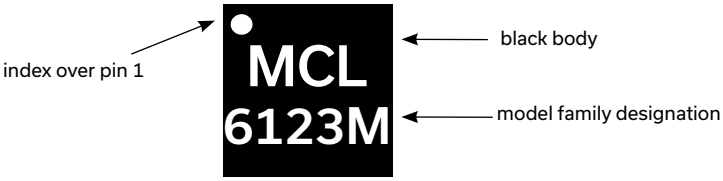
CASE STYLE DRAWING



Weight: .04 grams

Dimensions are in inches [mm]. Tolerances: 2 Pl.±.01; 3 Pl.±.005 Inches

PRODUCT MARKING



Marking may contain other features or characters for internal lot control

Wideband Amplifier AVA-6123MP+

50Ω 5.6 to 11.7 GHz Medium Power Driver Amplifier

ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file)
Case Style	DG1847 Plastic package, exposed paddle, Lead Finish: NiPdAu
RoHS Status	Compliant
Tape & Reel **Standard quantities available on reel**	F68 7" reels with 20, 50, 100, 200, 500, 1K devices
Suggested Layout for PCB Design	PL-796
Evaluation Board	TB-AVA-6123MPC+ Gerber File
Environmental Ratings	ENV165

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-Circuits' 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

Typical Performance Data

NOTE: Use PDF Bookmarks to view DATA at required

Definitions:
Input Return Loss = S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	IP-3 Output	IM3 Output	1dB Comp. Output	Psat Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	(dBm)	(dBc)	(dBm)	(dBm)	(dB)
5.0	21.4	-63.6	-19.3	-9.7	27.6	-36.8	20.3	22.6	7.1
5.1	21.5	-63.3	-19.2	-9.9	27.6	-36.8	20.4	22.6	7.0
5.2	21.6	-63.0	-19.2	-10.2	27.6	-36.8	20.4	22.7	7.1
5.3	21.6	-63.0	-19.2	-10.4	27.6	-36.9	20.5	22.7	6.9
5.4	21.7	-63.1	-19.2	-10.6	27.6	-36.9	20.6	22.8	6.8
5.5	21.8	-63.0	-19.2	-10.8	27.6	-36.8	20.6	22.9	6.8
5.6	21.9	-63.3	-19.2	-11.0	27.6	-36.8	20.7	22.9	6.7
5.7	22.0	-63.2	-19.2	-11.1	27.6	-36.9	20.8	22.9	6.7
5.8	22.0	-63.2	-19.1	-11.3	27.6	-36.9	20.9	22.9	6.7
5.9	22.1	-63.6	-19.1	-11.5	27.7	-36.9	21.0	23.0	6.6
6.0	22.1	-63.2	-19.0	-11.7	27.7	-37.0	21.1	23.0	6.5
6.1	22.2	-63.5	-18.9	-11.9	27.7	-37.1	21.2	23.0	6.5
6.2	22.2	-64.1	-18.8	-12.1	27.7	-37.0	21.3	23.0	6.4
6.3	22.3	-64.0	-18.6	-12.4	27.7	-37.0	21.3	23.0	6.4
6.4	22.3	-64.4	-18.4	-12.6	27.7	-37.0	21.4	23.1	6.3
6.5	22.3	-64.8	-18.2	-12.9	27.7	-36.9	21.4	23.1	6.3
6.6	22.3	-65.1	-18.0	-13.2	27.6	-36.9	21.5	23.1	6.3
6.7	22.3	-65.1	-17.8	-13.5	27.6	-36.9	21.5	23.2	6.2
6.8	22.3	-66.3	-17.6	-13.9	27.6	-36.9	21.5	23.2	6.2
6.9	22.3	-66.5	-17.3	-14.2	27.7	-37.0	21.6	23.3	6.2
7.0	22.3	-66.2	-17.1	-14.5	27.7	-37.1	21.6	23.3	6.1
7.1	22.4	-65.7	-16.9	-14.9	27.8	-37.2	21.6	23.3	6.1
7.2	22.4	-64.3	-16.7	-15.4	27.8	-37.2	21.6	23.4	6.1
7.3	22.4	-64.8	-16.5	-15.8	27.9	-37.4	21.7	23.4	6.1
7.4	22.3	-65.6	-16.2	-16.1	27.9	-37.4	21.7	23.4	6.0
7.5	22.3	-66.1	-16.0	-16.6	27.9	-37.4	21.7	23.4	5.9
7.6	22.3	-66.9	-15.9	-17.0	28.0	-37.5	21.7	23.4	6.0
7.7	22.3	-66.8	-15.8	-17.3	28.0	-37.6	21.7	23.4	5.9
7.8	22.3	-66.8	-15.6	-17.6	28.0	-37.6	21.7	23.4	5.9
7.9	22.4	-67.3	-15.4	-17.8	28.1	-37.7	21.7	23.3	5.9
8.0	22.4	-67.9	-15.2	-18.0	28.1	-37.7	21.7	23.2	5.9
8.1	22.4	-68.4	-15.1	-18.2	28.1	-37.8	21.7	23.2	5.9
8.2	22.4	-69.1	-15.1	-18.2	28.1	-37.8	21.7	23.3	5.9
8.3	22.4	-69.3	-15.2	-18.2	28.2	-37.8	21.7	23.3	5.8
8.4	22.4	-69.1	-15.4	-18.1	28.2	-37.8	21.6	23.2	5.8
8.5	22.4	-69.8	-15.5	-18.0	28.2	-37.8	21.6	23.2	5.9
8.6	22.5	-69.7	-15.6	-17.7	28.2	-37.9	21.7	23.3	5.8
8.7	22.5	-69.5	-15.6	-17.6	28.1	-37.8	21.7	23.3	5.8
8.8	22.5	-68.7	-15.7	-17.4	28.1	-37.8	21.7	23.3	5.8
8.9	22.5	-68.8	-15.9	-17.2	28.1	-37.7	21.6	23.3	5.8
9.0	22.5	-68.3	-16.1	-16.9	28.0	-37.6	21.6	23.3	5.8
9.1	22.5	-67.1	-16.4	-16.7	28.0	-37.6	21.6	23.4	5.8
9.2	22.5	-66.1	-16.8	-16.5	28.0	-37.5	21.6	23.4	5.8
9.3	22.5	-65.3	-17.1	-16.3	28.0	-37.5	21.6	23.3	5.7
9.4	22.5	-64.7	-17.5	-16.2	27.9	-37.3	21.6	23.3	5.8
9.5	22.5	-64.0	-17.9	-16.0	27.8	-37.2	21.6	23.4	5.7
9.6	22.5	-63.0	-18.3	-15.9	27.8	-37.1	21.6	23.5	5.8
9.7	22.5	-62.4	-18.7	-15.7	27.7	-36.9	21.6	23.4	5.7
9.8	22.6	-61.8	-19.1	-15.5	27.6	-36.8	21.6	23.4	5.7
9.9	22.6	-61.2	-19.5	-15.3	27.5	-36.6	21.6	23.5	5.7
10.0	22.6	-60.6	-19.7	-15.1	27.5	-36.4	21.6	23.5	5.7
10.1	22.7	-60.1	-20.0	-14.8	27.4	-36.2	21.6	23.5	5.6
10.2	22.7	-59.5	-20.3	-14.5	27.3	-36.0	21.6	23.5	5.6
10.3	22.7	-59.3	-20.8	-14.1	27.2	-35.9	21.5	23.4	5.6
10.4	22.7	-58.8	-21.1	-13.8	27.1	-35.7	21.5	23.5	5.6
10.5	22.7	-59.2	-21.4	-13.5	27.0	-35.4	21.6	23.5	5.6
10.6	22.6	-59.3	-21.5	-13.2	26.9	-35.2	21.5	23.4	5.5
10.7	22.6	-58.8	-21.8	-12.8	26.8	-35.0	21.5	23.3	5.5
10.8	22.5	-58.3	-22.2	-12.4	26.6	-34.8	21.5	23.3	5.5
10.9	22.5	-58.1	-22.7	-12.0	26.5	-34.5	21.5	23.4	5.4
11.0	22.4	-57.7	-23.4	-11.8	26.4	-34.2	21.5	23.3	5.4
11.1	22.3	-57.3	-24.1	-11.6	26.3	-34.0	21.5	23.2	5.4
11.2	22.2	-56.9	-24.7	-11.5	26.1	-33.8	21.5	23.2	5.3
11.3	22.0	-56.5	-25.3	-11.4	26.0	-33.5	21.5	23.2	5.3
11.4	21.9	-56.1	-25.9	-11.3	25.9	-33.2	21.6	23.2	5.3
11.5	21.8	-55.6	-26.3	-11.3	25.8	-33.0	21.5	23.1	5.3
11.6	21.7	-55.1	-26.8	-11.3	25.6	-32.8	21.5	23.1	5.2
11.7	21.6	-55.1	-27.1	-11.4	25.5	-32.5	21.5	23.1	5.2
11.8	21.5	-55.1	-27.4	-11.5	25.3	-32.1	21.6	23.1	5.2
11.9	21.4	-55.3	-27.4	-11.6	25.1	-31.8	21.6	23.1	5.2
12.0	21.3	-55.5	-27.3	-11.6	25.0	-31.4	21.5	23.0	5.2

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: V_{DD} = +4 V, I_{DD} = 140 mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	IP-3 Output	IM3 Output	1dB Comp. Output	Psat Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	(dBm)	(dBc)	(dBm)	(dBm)	(dB)
5.0	22.5	-63.5	-19.3	-10.1	28.0	-37.3	19.4	21.2	7.0
5.1	22.6	-63.2	-19.4	-10.5	28.0	-37.1	19.6	21.4	6.9
5.2	22.7	-63.1	-19.4	-10.7	27.9	-37.0	19.5	21.4	6.9
5.3	22.8	-63.1	-19.5	-11.0	28.3	-36.7	19.7	21.6	6.8
5.4	22.9	-62.9	-19.5	-11.2	27.9	-36.9	19.7	21.6	6.7
5.5	23.0	-63.0	-19.5	-11.5	27.9	-36.8	19.8	21.7	6.7
5.6	23.0	-63.3	-19.5	-11.6	27.5	-36.6	19.8	21.8	6.6
5.7	23.1	-63.2	-19.5	-11.8	27.8	-36.7	19.9	21.9	6.6
5.8	23.2	-63.2	-19.5	-12.1	27.8	-36.9	20.1	22.1	6.5
5.9	23.2	-63.1	-19.5	-12.3	27.5	-36.6	20.1	22.0	6.5
6.0	23.3	-63.2	-19.5	-12.5	27.8	-36.6	20.1	22.1	6.4
6.1	23.3	-63.9	-19.4	-12.8	28.1	-36.2	19.9	21.7	6.4
6.2	23.4	-63.4	-19.3	-13.1	28.0	-36.1	20.0	21.7	6.3
6.3	23.4	-63.9	-19.1	-13.3	27.8	-35.7	20.1	21.9	6.2
6.4	23.5	-64.1	-19.0	-13.7	27.9	-35.8	20.2	21.9	6.2
6.5	23.5	-64.7	-18.8	-14.0	28.0	-35.9	20.2	21.9	6.2
6.6	23.5	-65.0	-18.7	-14.4	27.9	-35.6	20.2	22.0	6.1
6.7	23.5	-65.7	-18.5	-14.7	27.8	-35.7	20.1	21.8	6.1
6.8	23.5	-66.0	-18.3	-15.1	27.9	-35.7	20.1	21.9	6.1
6.9	23.5	-66.3	-18.0	-15.5	27.9	-35.9	20.2	22.2	6.1
7.0	23.5	-66.1	-17.8	-15.9	27.9	-35.9	20.2	22.2	6.0
7.1	23.5	-65.5	-17.5	-16.3	27.9	-36.0	20.2	22.2	6.0
7.2	23.5	-64.4	-17.3	-16.8	28.0	-36.2	20.2	22.3	6.0
7.3	23.5	-64.9	-17.0	-17.3	28.3	-36.5	20.2	22.1	6.0
7.4	23.4	-65.5	-16.8	-17.7	28.2	-36.4	20.3	22.2	5.9
7.5	23.4	-66.1	-16.6	-18.3	28.1	-36.3	20.4	22.2	5.8
7.6	23.4	-66.4	-16.4	-18.7	28.0	-36.4	20.1	22.0	5.9
7.7	23.4	-67.2	-16.2	-19.2	28.1	-36.4	20.3	22.1	5.8
7.8	23.4	-66.5	-16.0	-19.5	28.1	-36.5	20.1	21.9	5.8
7.9	23.4	-67.0	-15.8	-19.8	28.3	-36.7	20.4	22.1	5.8
8.0	23.4	-67.1	-15.6	-20.0	27.7	-36.7	20.4	22.1	5.8
8.1	23.4	-68.6	-15.4	-20.1	27.5	-36.7	20.2	21.9	5.8
8.2	23.5	-68.8	-15.3	-20.2	27.7	-36.9	20.3	21.9	5.7
8.3	23.5	-68.6	-15.2	-20.1	27.8	-36.9	20.1	21.8	5.8
8.4	23.5	-69.5	-15.2	-20.0	27.7	-36.9	20.1	21.7	5.7
8.5	23.5	-69.8	-15.3	-19.8	27.7	-36.8	20.3	22.1	5.7
8.6	23.5	-69.6	-15.4	-19.5	28.1	-36.6	20.3	22.0	5.7
8.7	23.5	-68.8	-15.4	-19.3	28.1	-36.6	20.3	22.1	5.7
8.8	23.5	-69.0	-15.4	-19.0	28.0	-36.5	20.3	22.1	5.7
8.9	23.5	-68.5	-15.5	-18.7	28.2	-36.6	20.1	22.0	5.7
9.0	23.5	-68.1	-15.7	-18.4	28.2	-36.8	20.0	22.0	5.7
9.1	23.5	-66.9	-16.0	-18.0	28.1	-36.5	20.3	22.2	5.7
9.2	23.5	-65.7	-16.3	-17.7	28.0	-36.4	20.1	22.0	5.6
9.3	23.5	-65.1	-16.6	-17.4	28.0	-36.3	20.2	22.1	5.7
9.4	23.6	-64.5	-17.0	-17.2	27.8	-36.2	20.3	22.3	5.6
9.5	23.6	-63.6	-17.4	-17.0	27.5	-36.5	19.9	21.8	5.6
9.6	23.6	-62.7	-17.7	-16.7	27.6	-36.4	20.1	22.1	5.6
9.7	23.6	-62.4	-18.1	-16.4	27.4	-36.1	20.0	22.1	5.6
9.8	23.6	-61.5	-18.4	-16.0	27.2	-35.8	19.9	21.9	5.6
9.9	23.7	-61.1	-18.7	-15.7	27.3	-35.8	20.1	22.3	5.6
10.0	23.7	-60.6	-19.1	-15.4	27.2	-35.6	20.0	22.1	5.6
10.1	23.7	-60.0	-19.3	-15.0	27.0	-35.5	19.7	21.8	5.6
10.2	23.8	-59.4	-19.6	-14.5	27.0	-35.2	19.9	22.0	5.5
10.3	23.8	-59.1	-19.8	-14.0	26.9	-35.1	19.5	21.5	5.5
10.4	23.8	-58.8	-20.1	-13.6	26.8	-34.9	19.6	21.7	5.5
10.5	23.8	-59.0	-20.4	-13.2	26.7	-34.7	19.6	21.7	5.5
10.6	23.7	-59.1	-20.7	-12.8	26.5	-34.7	19.2	21.3	5.4
10.7	23.7	-58.7	-21.1	-12.3	26.4	-34.4	19.4	21.3	5.3
10.8	23.7	-58.2	-21.6	-11.9	26.3	-34.1	19.7	21.6	5.3
10.9	23.6	-57.9	-22.2	-11.5	26.3	-34.0	19.3	21.3	5.3
11.0	23.5	-57.6	-23.0	-11.2	26.1	-33.6	19.4	21.4	5.2
11.1	23.4	-57.1	-23.8	-11.0	25.9	-33.3	19.5	21.4	5.2
11.2	23.3	-56.8	-24.7	-10.9	25.9	-33.4	19.1	21.0	5.2
11.3	23.2	-56.3	-25.7	-10.8	25.7	-32.9	19.6	21.3	5.2
11.4	23.1	-56.0	-26.7	-10.8	25.8	-32.9	19.4	21.2	5.1
11.5	23.0	-55.5	-27.8	-10.8	25.6	-32.6	19.4	21.2	5.1
11.6	22.9	-55.1	-28.9	-10.8	25.5	-32.1	19.7	21.5	5.1
11.7	22.8	-55.0	-30.0	-11.0	25.3	-31.8	19.7	21.3	5.0
11.8	22.7	-55.0	-31.0	-11.1	25.2	-31.7	19.6	21.3	5.0
11.9	22.6	-55.2	-31.6	-11.2	25.1	-31.2	19.9	21.5	5.0
12.0	22.5	-55.4	-32.0	-11.3	25.0	-31.2	19.7	21.3	5.0

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: V_{DD} = +6 V, I_{DD} = 140 mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	IP-3 Output	IM3 Output	1dB Comp. Output	Psat Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	(dBm)	(dBc)	(dBm)	(dBm)	(dB)
5.0	20.7	-63.6	-20.1	-9.3	28.6	-39.2	20.8	22.8	7.2
5.1	20.7	-63.3	-20.1	-9.6	28.6	-39.0	20.7	22.8	7.0
5.2	20.8	-63.0	-20.1	-9.8	28.5	-38.9	20.8	22.9	7.0
5.3	20.9	-63.2	-20.2	-10.0	28.6	-38.6	20.9	22.9	6.9
5.4	21.0	-63.0	-20.1	-10.2	28.7	-38.8	20.9	23.0	6.8
5.5	21.1	-63.1	-20.1	-10.3	28.7	-38.9	21.0	23.1	6.8
5.6	21.1	-63.2	-20.1	-10.5	28.2	-38.6	21.1	23.1	6.7
5.7	21.2	-63.0	-20.0	-10.6	28.6	-38.9	21.2	23.1	6.7
5.8	21.3	-63.1	-19.9	-10.8	28.7	-39.1	21.2	23.2	6.6
5.9	21.3	-63.1	-19.8	-10.9	28.3	-38.7	21.4	23.3	6.6
6.0	21.4	-63.2	-19.7	-11.1	28.7	-38.8	21.4	23.3	6.5
6.1	21.4	-63.7	-19.5	-11.3	28.5	-38.2	21.6	23.3	6.5
6.2	21.5	-63.8	-19.3	-11.5	28.5	-38.2	21.8	23.3	6.5
6.3	21.5	-64.0	-19.0	-11.7	28.4	-37.8	21.8	23.4	6.4
6.4	21.5	-64.5	-18.8	-11.9	28.4	-38.2	22.0	23.5	6.4
6.5	21.5	-64.8	-18.6	-12.2	28.6	-38.3	22.1	23.5	6.3
6.6	21.6	-65.1	-18.3	-12.5	28.4	-37.9	22.2	23.6	6.2
6.7	21.6	-65.9	-18.1	-12.8	28.3	-38.2	22.4	23.6	6.3
6.8	21.6	-66.2	-17.8	-13.1	28.5	-38.2	22.4	23.7	6.2
6.9	21.6	-66.8	-17.5	-13.4	28.5	-38.3	22.3	23.8	6.2
7.0	21.6	-66.5	-17.2	-13.7	28.5	-38.3	22.3	23.8	6.1
7.1	21.6	-65.8	-16.9	-14.0	28.5	-38.4	22.4	23.8	6.1
7.2	21.6	-65.0	-16.7	-14.4	28.7	-38.6	22.5	23.9	6.0
7.3	21.6	-65.3	-16.4	-14.8	29.1	-39.1	22.5	23.8	6.0
7.4	21.6	-65.8	-16.2	-15.1	28.8	-38.9	22.5	23.9	6.0
7.5	21.6	-65.7	-16.0	-15.5	28.8	-38.7	22.6	23.9	6.0
7.6	21.6	-67.4	-15.8	-15.9	28.7	-38.9	22.5	23.7	5.9
7.7	21.6	-67.0	-15.6	-16.2	28.8	-39.0	22.6	23.9	5.9
7.8	21.6	-67.0	-15.4	-16.4	28.8	-38.9	22.5	23.8	5.9
7.9	21.7	-67.6	-15.2	-16.6	29.0	-39.3	22.6	23.9	5.9
8.0	21.7	-67.8	-15.0	-16.8	29.0	-39.5	22.6	23.9	5.9
8.1	21.7	-68.5	-14.9	-16.9	28.7	-39.4	22.6	23.8	5.9
8.2	21.7	-68.9	-14.8	-17.0	28.9	-39.7	22.6	23.9	5.8
8.3	21.7	-69.3	-14.8	-17.0	29.1	-39.7	22.5	23.8	5.8
8.4	21.7	-69.5	-14.8	-16.9	28.9	-39.7	22.5	23.8	5.8
8.5	21.8	-69.8	-14.9	-16.8	28.9	-39.6	22.6	24.0	5.8
8.6	21.8	-69.8	-14.9	-16.6	29.0	-39.2	22.5	23.9	5.8
8.7	21.8	-70.0	-15.0	-16.5	28.9	-39.3	22.6	24.0	5.8
8.8	21.8	-69.3	-15.0	-16.3	28.9	-39.2	22.6	24.0	5.8
8.9	21.8	-69.1	-15.2	-16.1	29.1	-39.3	22.6	23.8	5.8
9.0	21.8	-68.0	-15.4	-16.0	29.1	-39.4	22.6	23.9	5.8
9.1	21.8	-67.3	-15.6	-15.8	29.0	-39.2	22.6	24.0	5.8
9.2	21.8	-66.2	-15.9	-15.6	28.9	-38.9	22.5	23.9	5.8
9.3	21.8	-65.3	-16.2	-15.5	28.9	-39.0	22.5	24.0	5.8
9.4	21.8	-65.0	-16.6	-15.4	28.8	-38.7	22.5	24.2	5.8
9.5	21.8	-64.1	-16.9	-15.3	28.8	-39.2	22.4	23.8	5.7
9.6	21.8	-63.1	-17.3	-15.2	28.9	-39.2	22.5	24.1	5.7
9.7	21.8	-62.3	-17.6	-15.1	28.6	-38.7	22.3	24.1	5.7
9.8	21.9	-62.0	-17.9	-15.0	28.4	-38.4	22.4	23.9	5.7
9.9	21.9	-61.3	-18.2	-14.9	28.5	-38.3	22.5	24.3	5.7
10.0	21.9	-60.8	-18.5	-14.8	28.4	-38.2	22.4	24.1	5.7
10.1	22.0	-60.1	-18.8	-14.6	28.2	-38.0	22.4	23.9	5.7
10.2	22.0	-59.7	-19.1	-14.4	28.1	-37.7	22.5	24.1	5.7
10.3	22.0	-59.4	-19.4	-14.1	28.0	-37.4	22.3	23.7	5.6
10.4	22.0	-59.1	-19.7	-13.9	27.9	-37.2	22.4	23.9	5.6
10.5	21.9	-59.4	-20.0	-13.6	27.7	-36.9	22.4	23.9	5.6
10.6	21.9	-59.5	-20.4	-13.3	27.5	-36.8	22.2	23.6	5.6
10.7	21.9	-58.9	-20.8	-13.0	27.3	-36.4	22.4	23.6	5.5
10.8	21.8	-58.5	-21.3	-12.7	27.3	-36.1	22.6	23.8	5.5
10.9	21.7	-58.1	-22.0	-12.4	27.1	-35.8	22.4	23.6	5.5
11.0	21.7	-57.8	-22.7	-12.1	26.9	-35.3	22.5	23.7	5.4
11.1	21.5	-57.4	-23.5	-11.9	26.7	-34.9	22.7	23.7	5.4
11.2	21.4	-57.0	-24.3	-11.8	26.7	-35.0	22.4	23.4	5.4
11.3	21.3	-56.5	-25.2	-11.8	26.3	-34.3	22.9	23.7	5.3
11.4	21.2	-56.1	-26.1	-11.7	26.5	-34.3	22.7	23.6	5.2
11.5	21.1	-55.7	-27.1	-11.6	26.2	-33.9	22.7	23.6	5.2
11.6	21.0	-55.2	-28.0	-11.6	26.0	-33.2	23.1	23.9	5.2
11.7	20.8	-55.3	-28.9	-11.7	25.7	-32.7	23.1	23.7	5.2
11.8	20.7	-55.3	-29.6	-11.8	25.6	-32.5	23.0	23.7	5.2
11.9	20.6	-55.6	-30.1	-11.8	25.5	-32.0	23.3	23.9	5.2
12.0	20.5	-55.7	-30.3	-11.8	25.3	-32.0	23.1	23.8	5.1

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: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = -40°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	IP-3 Output	IM3 Output	1dB Comp. Output	Psat Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	(dBm)	(dBc)	(dBm)	(dBm)	(dB)
5.0	25.3	-62.9	-17.7	-9.3	28.3	-38.2	19.8	23.0	5.9
5.1	25.5	-63.1	-17.7	-9.6	28.3	-38.2	19.9	23.0	5.8
5.2	25.6	-63.2	-17.7	-9.8	28.4	-38.4	19.9	23.0	5.8
5.3	25.8	-63.2	-17.8	-10.1	28.5	-38.5	20.0	23.1	5.7
5.4	25.9	-63.4	-17.9	-10.3	28.5	-38.6	20.0	23.2	5.6
5.5	26.0	-62.4	-18.1	-10.6	28.5	-38.6	20.1	23.2	5.5
5.6	26.1	-62.4	-18.2	-10.8	28.6	-38.7	20.1	23.3	5.5
5.7	26.2	-61.8	-18.3	-11.0	28.6	-38.8	20.2	23.3	5.4
5.8	26.3	-62.2	-18.4	-11.2	28.7	-38.9	20.2	23.3	5.4
5.9	26.4	-62.1	-18.4	-11.4	28.7	-39.0	20.3	23.3	5.4
6.0	26.5	-62.6	-18.5	-11.7	28.8	-39.1	20.3	23.3	5.3
6.1	26.5	-63.3	-18.6	-12.0	28.8	-39.2	20.4	23.3	5.2
6.2	26.6	-63.8	-18.7	-12.3	28.9	-39.3	20.4	23.2	5.3
6.3	26.7	-63.1	-18.8	-12.7	28.9	-39.3	20.4	23.2	5.1
6.4	26.8	-64.5	-18.8	-13.0	29.0	-39.6	20.4	23.1	5.1
6.5	26.9	-66.0	-18.7	-13.4	29.1	-39.9	20.4	23.1	5.2
6.6	26.9	-65.2	-18.7	-13.7	29.3	-40.1	20.5	23.0	5.0
6.7	27.0	-64.5	-18.6	-14.2	29.4	-40.4	20.5	23.0	5.0
6.8	27.0	-64.8	-18.5	-14.5	29.7	-40.9	20.5	23.1	5.0
6.9	26.9	-63.1	-18.4	-15.0	30.0	-41.5	20.5	23.1	5.0
7.0	26.9	-62.9	-18.2	-15.4	30.2	-41.9	20.5	23.2	4.9
7.1	26.9	-62.3	-18.1	-15.9	30.3	-42.3	20.5	23.2	4.9
7.2	26.9	-61.5	-18.0	-16.5	30.6	-42.7	20.6	23.3	4.9
7.3	26.8	-61.2	-17.9	-17.2	30.7	-43.0	20.6	23.5	4.9
7.4	26.7	-63.1	-17.6	-18.1	30.8	-43.2	20.6	23.5	4.8
7.5	26.7	-63.2	-17.3	-18.8	30.9	-43.4	20.6	23.6	4.8
7.6	26.6	-64.3	-17.2	-19.5	31.1	-43.7	20.6	23.6	4.8
7.7	26.6	-66.5	-17.1	-19.9	31.3	-44.1	20.7	23.6	4.8
7.8	26.6	-64.8	-16.9	-20.1	31.4	-44.3	20.7	23.6	4.7
7.9	26.6	-64.4	-16.7	-20.3	31.4	-44.4	20.7	23.6	4.8
8.0	26.6	-62.4	-16.4	-20.5	31.5	-44.6	20.7	23.5	4.7
8.1	26.5	-61.9	-16.1	-20.7	31.7	-44.9	20.7	23.4	4.7
8.2	26.5	-61.8	-16.0	-20.9	31.7	-45.1	20.7	23.4	4.7
8.3	26.6	-62.8	-16.1	-20.6	31.8	-45.1	20.7	23.4	4.7
8.4	26.6	-64.9	-16.3	-20.0	31.8	-45.1	20.7	23.4	4.7
8.5	26.6	-65.5	-16.5	-19.6	31.7	-45.1	20.7	23.4	4.7
8.6	26.7	-64.8	-16.5	-19.2	31.7	-45.0	20.7	23.5	4.7
8.7	26.7	-65.4	-16.6	-18.9	31.7	-44.9	20.7	23.6	4.7
8.8	26.8	-66.5	-16.5	-18.3	31.5	-44.6	20.7	23.6	4.7
8.9	26.8	-67.3	-16.6	-17.7	31.4	-44.3	20.7	23.6	4.6
9.0	26.8	-65.9	-16.7	-17.4	31.3	-44.0	20.7	23.7	4.6
9.1	26.8	-65.9	-16.9	-17.1	31.1	-43.7	20.7	23.8	4.7
9.2	26.8	-68.7	-17.3	-16.6	31.0	-43.5	20.7	23.8	4.6
9.3	26.8	-71.6	-17.6	-16.2	30.9	-43.4	20.7	23.8	4.7
9.4	26.8	-70.4	-18.0	-16.0	30.8	-43.2	20.7	23.7	4.6
9.5	26.8	-68.7	-18.3	-15.8	30.8	-43.0	20.7	23.8	4.6
9.6	26.8	-66.9	-18.7	-15.6	30.7	-42.9	20.8	23.9	4.6
9.7	26.9	-64.7	-19.0	-15.3	30.7	-42.8	20.8	23.9	4.6
9.8	26.9	-63.9	-19.5	-15.1	30.6	-42.7	20.8	23.8	4.5
9.9	27.0	-63.8	-19.8	-14.7	30.6	-42.6	20.8	23.9	4.6
10.0	27.0	-62.7	-19.9	-14.4	30.5	-42.6	20.8	24.0	4.6
10.1	27.1	-61.5	-19.9	-14.0	30.5	-42.5	20.9	24.0	4.5
10.2	27.2	-60.5	-20.0	-13.6	30.5	-42.5	20.9	23.9	4.5
10.3	27.2	-60.0	-20.3	-13.2	30.5	-42.5	20.8	23.9	4.5
10.4	27.3	-59.1	-20.6	-12.8	30.5	-42.5	20.8	23.9	4.4
10.5	27.3	-59.3	-20.6	-12.4	30.5	-42.4	20.9	23.9	4.4
10.6	27.3	-59.3	-20.5	-11.9	30.4	-42.4	20.9	23.9	4.4
10.7	27.3	-58.9	-20.3	-11.4	30.4	-42.3	20.8	23.8	4.3
10.8	27.3	-58.5	-20.4	-10.9	30.4	-42.3	20.8	23.8	4.3
10.9	27.3	-58.0	-20.7	-10.4	30.4	-42.2	20.9	23.9	4.2
11.0	27.2	-57.4	-21.1	-10.1	30.4	-42.2	21.0	23.9	4.2
11.1	27.2	-56.7	-21.5	-9.8	30.4	-42.2	21.0	23.8	4.2
11.2	27.1	-56.0	-22.0	-9.6	30.4	-42.2	21.0	23.7	4.2
11.3	27.0	-55.3	-22.4	-9.5	30.4	-42.2	21.1	23.7	4.1
11.4	26.9	-55.0	-22.8	-9.4	30.4	-42.2	21.2	23.7	4.1
11.5	26.8	-54.8	-23.2	-9.5	30.4	-42.3	21.2	23.7	4.0
11.6	26.7	-54.7	-23.8	-9.6	30.5	-42.4	21.2	23.6	4.1
11.7	26.6	-54.7	-24.3	-9.7	30.4	-42.3	21.2	23.6	4.0
11.8	26.5	-54.4	-24.8	-9.9	30.4	-42.3	21.3	23.7	4.0
11.9	26.4	-54.2	-25.0	-10.1	30.4	-42.3	21.3	23.6	4.0
12.0	26.4	-54.3	-25.1	-10.3	30.4	-42.2	21.3	23.6	4.0

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: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = +95°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	IP-3 Output	IM3 Output	1dB Comp. Output	Psat Output	Noise Figure
(GHz)	(dB)	(dB)	(dB)	(dB)	(dBm)	(dBc)	(dBm)	(dBm)	(dB)
5.0	20.0	-62.9	-19.4	-10.4	27.9	-37.4	19.3	21.3	8.3
5.1	20.1	-62.6	-19.3	-10.6	28.0	-37.6	19.3	21.4	8.1
5.2	20.1	-62.9	-19.2	-10.8	28.1	-37.8	19.4	21.5	8.1
5.3	20.2	-62.7	-19.2	-11.0	28.2	-38.1	19.4	21.5	8.0
5.4	20.3	-62.3	-19.1	-11.2	28.3	-38.3	19.5	21.6	7.9
5.5	20.3	-62.5	-19.1	-11.4	28.3	-38.4	19.6	21.7	7.9
5.6	20.4	-62.9	-19.1	-11.5	28.5	-38.6	19.7	21.8	7.8
5.7	20.5	-63.1	-19.0	-11.7	28.6	-38.9	19.9	21.8	7.8
5.8	20.5	-62.8	-19.0	-11.9	28.7	-39.1	20.0	21.9	7.7
5.9	20.6	-62.8	-18.9	-12.0	28.8	-39.2	20.1	22.0	7.7
6.0	20.6	-62.6	-18.8	-12.2	28.9	-39.5	20.2	22.0	7.6
6.1	20.7	-63.6	-18.7	-12.5	29.0	-39.7	20.4	22.1	7.6
6.2	20.7	-63.4	-18.6	-12.8	29.1	-39.9	20.5	22.2	7.5
6.3	20.8	-63.7	-18.5	-13.1	29.2	-40.0	20.6	22.2	7.4
6.4	20.9	-65.5	-18.3	-13.3	29.3	-40.2	20.7	22.3	7.4
6.5	20.9	-67.0	-18.1	-13.6	29.4	-40.4	20.9	22.4	7.4
6.6	20.9	-66.1	-17.9	-13.8	29.4	-40.5	21.0	22.5	7.4
6.7	20.9	-66.6	-17.7	-14.2	29.5	-40.7	21.0	22.5	7.3
6.8	21.0	-65.6	-17.5	-14.6	29.7	-40.9	21.1	22.6	7.3
6.9	20.9	-65.0	-17.4	-15.1	29.8	-41.2	21.1	22.6	7.2
7.0	20.9	-65.3	-17.2	-15.5	29.9	-41.4	21.2	22.6	7.2
7.1	20.9	-64.1	-17.0	-16.0	30.0	-41.5	21.2	22.6	7.1
7.2	20.8	-63.3	-16.8	-16.6	30.0	-41.7	21.3	22.6	7.1
7.3	20.8	-63.6	-16.6	-17.3	30.1	-41.9	21.3	22.7	7.1
7.4	20.7	-65.5	-16.4	-17.9	30.2	-41.9	21.4	22.7	7.0
7.5	20.7	-66.0	-16.2	-18.6	30.1	-41.9	21.4	22.7	7.0
7.6	20.7	-66.7	-16.1	-19.1	30.2	-42.0	21.4	22.7	7.0
7.7	20.7	-69.4	-16.0	-19.4	30.3	-42.2	21.4	22.7	7.0
7.8	20.7	-68.3	-15.8	-19.6	30.3	-42.1	21.4	22.7	6.9
7.9	20.7	-67.5	-15.6	-19.7	30.3	-42.2	21.4	22.6	6.9
8.0	20.7	-65.9	-15.5	-19.7	30.3	-42.2	21.4	22.6	6.9
8.1	20.7	-65.0	-15.4	-19.6	30.3	-42.2	21.3	22.6	6.9
8.2	20.7	-65.0	-15.4	-19.4	30.3	-42.2	21.3	22.6	6.9
8.3	20.7	-66.0	-15.5	-19.1	30.3	-42.2	21.3	22.6	6.9
8.4	20.7	-66.9	-15.7	-18.7	30.2	-42.1	21.3	22.6	6.9
8.5	20.7	-67.2	-15.8	-18.3	30.2	-42.0	21.2	22.5	6.8
8.6	20.7	-66.5	-15.9	-18.0	30.1	-41.9	21.2	22.6	6.8
8.7	20.7	-66.6	-16.0	-17.7	30.1	-41.7	21.2	22.6	6.9
8.8	20.7	-67.0	-16.1	-17.2	30.0	-41.5	21.2	22.6	6.8
8.9	20.6	-65.9	-16.3	-16.9	29.9	-41.3	21.1	22.5	6.8
9.0	20.6	-66.4	-16.6	-16.5	29.7	-41.0	21.1	22.5	6.8
9.1	20.6	-67.4	-16.9	-16.3	29.6	-40.8	21.1	22.5	6.8
9.2	20.6	-68.3	-17.3	-16.0	29.5	-40.6	21.1	22.5	6.8
9.3	20.6	-68.3	-17.6	-15.7	29.4	-40.3	21.0	22.5	6.8
9.4	20.6	-67.6	-18.0	-15.5	29.2	-40.0	21.0	22.5	6.8
9.5	20.6	-66.6	-18.4	-15.4	29.1	-39.8	21.0	22.5	6.8
9.6	20.6	-64.2	-18.8	-15.2	29.0	-39.5	20.9	22.5	6.8
9.7	20.6	-63.0	-19.3	-15.0	28.8	-39.2	20.9	22.5	6.8
9.8	20.6	-62.2	-19.7	-14.9	28.7	-39.0	20.9	22.5	6.7
9.9	20.7	-61.3	-20.1	-14.7	28.6	-38.7	20.9	22.5	6.8
10.0	20.7	-61.0	-20.4	-14.4	28.4	-38.4	20.9	22.5	6.8
10.1	20.7	-60.2	-20.7	-14.2	28.3	-38.2	20.9	22.5	6.7
10.2	20.7	-59.8	-21.2	-14.0	28.2	-37.9	20.9	22.5	6.8
10.3	20.7	-59.3	-21.7	-13.8	28.1	-37.6	20.9	22.4	6.7
10.4	20.6	-59.0	-22.1	-13.6	27.9	-37.4	20.9	22.4	6.6
10.5	20.6	-59.4	-22.5	-13.4	27.8	-37.1	20.9	22.4	6.7
10.6	20.5	-58.8	-22.9	-13.0	27.6	-36.8	20.9	22.4	6.6
10.7	20.5	-58.7	-23.3	-12.7	27.5	-36.5	20.8	22.3	6.5
10.8	20.4	-58.5	-24.0	-12.4	27.3	-36.2	20.9	22.3	6.5
10.9	20.3	-57.9	-24.9	-12.2	27.2	-35.8	20.9	22.3	6.5
11.0	20.2	-57.6	-25.8	-12.0	27.0	-35.5	20.9	22.3	6.4
11.1	20.1	-56.9	-26.8	-11.8	26.8	-35.2	20.9	22.2	6.4
11.2	20.0	-56.5	-27.9	-11.7	26.7	-34.8	20.9	22.2	6.4
11.3	19.8	-56.2	-28.9	-11.6	26.4	-34.4	20.9	22.2	6.4
11.4	19.7	-56.1	-29.8	-11.6	26.3	-34.0	20.9	22.2	6.3
11.5	19.6	-56.1	-30.7	-11.6	26.1	-33.7	20.8	22.1	6.2
11.6	19.5	-55.6	-31.5	-11.6	25.9	-33.3	20.8	22.1	6.3
11.7	19.4	-55.5	-32.0	-11.7	25.7	-32.8	20.8	22.1	6.3
11.8	19.3	-55.5	-32.3	-11.7	25.5	-32.4	20.9	22.1	6.3
11.9	19.1	-55.5	-32.3	-11.7	25.2	-31.9	20.9	22.0	6.3
12.0	19.0	-55.7	-32.0	-11.7	25.0	-31.5	20.8	22.0	6.3

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 120 mA, 140 mA, 160 mA @ Temperature = +25°C

FREQ	Gain @ 120 mA	Gain @ 140 mA	Gain @ 160 mA	1dB Comp. Output @ 120 mA	1dB Comp. Output @ 140 mA	1dB Comp. Output @ 160 mA	Psat Output @ 120 mA	Psat Output @ 140 mA	Psat Output @ 160 mA
(GHz)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
5.0	20.7	21.4	22.1	19.4	20.3	21.0	22.2	22.6	22.7
5.1	20.8	21.5	22.2	19.3	20.4	21.1	22.4	22.6	22.9
5.2	20.9	21.6	22.3	19.3	20.4	21.1	22.4	22.7	22.9
5.3	21.0	21.6	22.4	19.4	20.5	21.2	22.5	22.7	23.0
5.4	21.1	21.7	22.5	19.4	20.6	21.2	22.6	22.8	23.1
5.5	21.1	21.8	22.5	19.5	20.6	21.3	22.6	22.9	23.2
5.6	21.2	21.9	22.6	19.7	20.7	21.4	22.7	22.9	23.2
5.7	21.3	22.0	22.7	19.7	20.8	21.4	22.8	22.9	23.3
5.8	21.3	22.0	22.7	19.8	20.9	21.6	22.9	22.9	23.5
5.9	21.4	22.1	22.8	20.0	21.0	21.6	22.9	23.0	23.4
6.0	21.4	22.1	22.9	20.0	21.1	21.6	23.0	23.0	23.5
6.1	21.5	22.2	22.9	20.2	21.2	21.6	22.8	23.0	23.2
6.2	21.5	22.2	22.9	20.4	21.3	21.7	22.8	23.0	23.1
6.3	21.6	22.3	23.0	20.4	21.3	21.8	22.9	23.0	23.2
6.4	21.6	22.3	23.0	20.7	21.4	21.9	23.0	23.1	23.3
6.5	21.6	22.3	23.0	20.8	21.4	22.0	23.0	23.1	23.3
6.6	21.7	22.3	23.1	20.8	21.5	21.9	23.1	23.1	23.3
6.7	21.7	22.3	23.1	21.0	21.5	21.9	23.0	23.2	23.3
6.8	21.7	22.3	23.1	20.9	21.5	21.9	23.1	23.2	23.4
6.9	21.7	22.3	23.1	20.9	21.6	22.0	23.3	23.3	23.6
7.0	21.7	22.3	23.1	20.9	21.6	21.9	23.3	23.3	23.6
7.1	21.7	22.4	23.1	21.0	21.6	22.0	23.3	23.3	23.7
7.2	21.7	22.4	23.1	21.1	21.6	22.0	23.4	23.4	23.8
7.3	21.7	22.4	23.1	21.1	21.7	22.0	23.3	23.4	23.6
7.4	21.7	22.3	23.1	21.1	21.7	22.1	23.4	23.4	23.7
7.5	21.7	22.3	23.0	21.2	21.7	22.2	23.4	23.4	23.7
7.6	21.7	22.3	23.0	21.1	21.7	22.0	23.2	23.4	23.5
7.7	21.7	22.3	23.0	21.2	21.7	22.1	23.4	23.4	23.7
7.8	21.7	22.3	23.0	21.1	21.7	21.9	23.2	23.4	23.5
7.9	21.7	22.4	23.1	21.2	21.7	22.1	23.4	23.3	23.6
8.0	21.7	22.4	23.1	21.1	21.7	22.1	23.4	23.2	23.7
8.1	21.7	22.4	23.1	21.1	21.7	22.0	23.2	23.2	23.4
8.2	21.7	22.4	23.1	21.2	21.7	22.1	23.3	23.3	23.5
8.3	21.8	22.4	23.1	21.0	21.7	21.9	23.2	23.3	23.4
8.4	21.8	22.4	23.1	21.0	21.6	21.9	23.2	23.2	23.4
8.5	21.8	22.4	23.2	21.0	21.6	22.1	23.5	23.2	23.7
8.6	21.8	22.5	23.2	21.0	21.7	22.1	23.3	23.3	23.6
8.7	21.8	22.5	23.2	21.0	21.7	22.1	23.4	23.3	23.7
8.8	21.8	22.5	23.2	21.0	21.7	22.1	23.5	23.3	23.8
8.9	21.8	22.5	23.2	21.0	21.6	22.0	23.3	23.3	23.6
9.0	21.8	22.5	23.2	21.0	21.6	22.0	23.3	23.3	23.6
9.1	21.8	22.5	23.2	21.0	21.6	22.1	23.5	23.4	23.8
9.2	21.8	22.5	23.2	20.9	21.6	22.0	23.3	23.4	23.7
9.3	21.8	22.5	23.2	20.9	21.6	22.0	23.4	23.3	23.7
9.4	21.8	22.5	23.2	20.9	21.6	22.1	23.6	23.3	23.9
9.5	21.8	22.5	23.2	20.8	21.6	21.8	23.3	23.4	23.5
9.6	21.8	22.5	23.3	20.9	21.6	22.0	23.5	23.5	23.8
9.7	21.9	22.5	23.3	20.8	21.6	21.9	23.5	23.4	23.8
9.8	21.9	22.6	23.3	20.8	21.6	21.9	23.3	23.4	23.6
9.9	21.9	22.6	23.3	20.9	21.6	22.1	23.5	23.5	23.9
10.0	21.9	22.6	23.4	20.8	21.6	21.9	23.4	23.5	23.7
10.1	22.0	22.7	23.4	20.8	21.6	21.7	23.2	23.5	23.5
10.2	22.0	22.7	23.4	20.9	21.6	21.9	23.3	23.5	23.6
10.3	22.0	22.7	23.5	20.7	21.5	21.6	23.0	23.4	23.2
10.4	22.0	22.7	23.5	20.7	21.5	21.6	23.1	23.5	23.4
10.5	22.0	22.7	23.4	20.9	21.6	21.7	23.1	23.5	23.3
10.6	21.9	22.6	23.4	20.6	21.5	21.4	22.8	23.4	23.0
10.7	21.9	22.6	23.4	20.8	21.5	21.5	22.9	23.3	23.0
10.8	21.8	22.5	23.3	20.9	21.5	21.7	23.0	23.3	23.3
10.9	21.8	22.5	23.2	20.8	21.5	21.5	22.8	23.4	23.0
11.0	21.7	22.4	23.2	20.8	21.5	21.5	22.9	23.3	23.1
11.1	21.6	22.3	23.0	21.0	21.5	21.7	22.9	23.2	23.1
11.2	21.5	22.2	22.9	20.7	21.5	21.3	22.5	23.2	22.7
11.3	21.4	22.0	22.8	21.1	21.5	21.8	22.9	23.2	23.1
11.4	21.2	21.9	22.7	21.0	21.6	21.6	22.8	23.2	22.9
11.5	21.1	21.8	22.6	21.0	21.5	21.6	22.7	23.1	22.9
11.6	21.0	21.7	22.5	21.3	21.5	21.9	23.0	23.1	23.2
11.7	20.9	21.6	22.4	21.3	21.5	21.8	22.9	23.1	23.1
11.8	20.8	21.5	22.2	21.2	21.6	21.7	22.8	23.1	23.0
11.9	20.7	21.4	22.1	21.5	21.6	22.1	23.0	23.1	23.2
12.0	20.6	21.3	22.0	21.4	21.5	21.4	22.8	23.0	23.0

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 120 mA, 140 mA, 160 mA @ Temperature = +25°C

FREQ	IP-3 @ 120 mA	IP-3 @ 140 mA	IP-3 @ 160 mA	IM3 @ 120 mA	IM3 @ 140 mA	IM3 @ 160 mA	Noise Figure @ 120 mA	Noise Figure @ 140 mA	Noise Figure @ 160 mA
(GHz)	(dBm)	(dBm)	(dBm)	(dBc)	(dBc)	(dBc)	(dB)	(dB)	(dB)
5.0	27.8	27.6	28.1	-37.3	-37.0	-37.4	7.2	7.1	7.1
5.1	27.8	27.5	28.0	-37.2	-36.9	-37.3	7.1	7.0	7.0
5.2	27.7	27.4	27.9	-37.1	-36.8	-37.2	7.0	7.1	7.0
5.3	27.7	27.6	28.2	-36.6	-36.4	-36.8	7.0	6.9	6.9
5.4	27.9	27.2	27.9	-37.1	-36.7	-37.0	6.9	6.8	6.8
5.5	27.9	27.2	27.9	-37.0	-36.6	-37.0	6.8	6.8	6.8
5.6	27.3	27.5	27.6	-36.7	-36.4	-36.8	6.8	6.7	6.7
5.7	27.8	27.3	27.9	-37.1	-36.6	-36.9	6.7	6.7	6.7
5.8	28.0	27.5	27.9	-37.4	-36.8	-37.1	6.6	6.7	6.6
5.9	27.4	27.5	27.6	-36.8	-36.4	-36.8	6.5	6.6	6.6
6.0	27.9	27.2	27.9	-37.0	-36.5	-36.9	6.5	6.5	6.5
6.1	27.7	27.3	28.1	-36.3	-35.9	-36.4	6.5	6.5	6.5
6.2	27.6	27.3	27.9	-36.3	-35.9	-36.3	6.4	6.4	6.5
6.3	27.6	27.1	27.8	-35.8	-35.5	-36.0	6.4	6.4	6.3
6.4	27.7	27.4	27.9	-36.3	-35.7	-36.0	6.3	6.3	6.4
6.5	27.9	27.3	27.8	-36.7	-35.8	-36.0	6.3	6.3	6.3
6.6	27.7	27.2	27.7	-36.4	-35.5	-35.7	6.3	6.3	6.2
6.7	27.6	27.4	27.6	-36.6	-35.7	-35.8	6.2	6.2	6.2
6.8	27.9	27.2	27.7	-36.6	-35.6	-35.6	6.2	6.2	6.2
6.9	28.0	27.3	27.7	-36.8	-35.8	-35.8	6.2	6.2	6.2
7.0	27.9	27.3	27.7	-36.8	-35.8	-35.8	6.1	6.1	6.1
7.1	27.9	27.4	27.7	-36.8	-35.8	-35.8	6.0	6.1	6.1
7.2	28.1	27.4	27.8	-37.1	-35.9	-35.9	6.1	6.1	6.1
7.3	28.5	27.4	28.0	-37.6	-36.3	-36.2	6.0	6.1	6.0
7.4	28.3	27.4	27.9	-37.4	-36.2	-36.2	6.0	6.0	6.0
7.5	28.3	27.4	27.8	-37.3	-36.2	-36.1	5.9	5.9	6.0
7.6	28.2	27.6	27.8	-37.4	-36.2	-36.2	5.9	6.0	6.0
7.7	28.3	27.5	27.9	-37.6	-36.3	-36.2	5.9	5.9	6.0
7.8	28.3	27.5	27.9	-37.5	-36.2	-36.2	5.9	5.9	5.9
7.9	28.5	27.6	28.0	-37.9	-36.5	-36.4	5.9	5.9	5.9
8.0	28.4	27.5	27.6	-38.1	-36.6	-36.5	5.8	5.9	5.9
8.1	28.1	27.5	27.5	-37.9	-36.5	-36.4	5.9	5.9	5.9
8.2	28.4	27.6	27.6	-38.3	-36.7	-36.6	5.9	5.9	5.8
8.3	28.5	27.5	27.6	-38.4	-36.7	-36.6	5.8	5.8	5.8
8.4	28.5	27.6	27.6	-38.4	-36.8	-36.6	5.8	5.8	5.9
8.5	28.4	27.5	27.6	-38.2	-36.7	-36.6	5.8	5.9	5.9
8.6	28.5	27.5	27.9	-37.9	-36.4	-36.3	5.8	5.8	5.8
8.7	28.4	27.5	27.9	-38.0	-36.5	-36.4	5.8	5.8	5.8
8.8	28.4	27.5	27.8	-37.9	-36.4	-36.3	5.8	5.8	5.8
8.9	28.6	27.5	27.9	-38.0	-36.4	-36.3	5.8	5.8	5.8
9.0	28.6	27.6	27.9	-38.1	-36.5	-36.3	5.8	5.8	5.8
9.1	28.5	27.5	27.9	-38.0	-36.4	-36.3	5.8	5.8	5.8
9.2	28.3	27.4	27.8	-37.7	-36.2	-36.2	5.7	5.8	5.8
9.3	28.3	27.4	27.8	-37.6	-36.2	-36.1	5.7	5.7	5.8
9.4	28.2	27.3	27.7	-37.4	-36.1	-36.0	5.7	5.8	5.8
9.5	28.2	27.3	27.5	-37.8	-36.4	-36.2	5.7	5.7	5.8
9.6	28.3	27.2	27.5	-37.8	-36.4	-36.2	5.7	5.8	5.7
9.7	28.0	27.0	27.4	-37.4	-36.0	-35.9	5.7	5.7	5.7
9.8	27.7	27.0	27.2	-37.0	-35.8	-35.8	5.7	5.7	5.7
9.9	27.8	26.8	27.2	-36.9	-35.7	-35.6	5.7	5.7	5.7
10.0	27.7	26.8	27.2	-36.7	-35.6	-35.5	5.7	5.7	5.7
10.1	27.5	26.8	27.0	-36.5	-35.4	-35.4	5.6	5.6	5.7
10.2	27.5	26.6	26.9	-36.2	-35.2	-35.1	5.6	5.6	5.7
10.3	27.3	26.5	26.9	-36.0	-35.0	-34.9	5.6	5.6	5.7
10.4	27.2	26.3	26.8	-35.7	-34.7	-34.8	5.6	5.6	5.6
10.5	27.0	26.3	26.7	-35.4	-34.6	-34.6	5.6	5.6	5.6
10.6	26.8	26.2	26.5	-35.2	-34.5	-34.4	5.5	5.5	5.6
10.7	26.6	26.1	26.4	-34.9	-34.1	-34.2	5.5	5.5	5.5
10.8	26.6	25.8	26.3	-34.6	-33.8	-34.0	5.5	5.5	5.5
10.9	26.4	25.8	26.2	-34.4	-33.7	-33.8	5.4	5.4	5.5
11.0	26.2	25.6	26.1	-33.9	-33.4	-33.6	5.3	5.4	5.4
11.1	26.0	25.4	26.0	-33.4	-33.0	-33.3	5.3	5.4	5.4
11.2	25.9	25.4	25.9	-33.5	-33.0	-33.2	5.3	5.3	5.4
11.3	25.6	25.0	25.8	-32.7	-32.5	-32.8	5.3	5.3	5.3
11.4	25.8	25.0	25.8	-32.9	-32.5	-32.8	5.2	5.3	5.3
11.5	25.5	24.8	25.7	-32.4	-32.1	-32.5	5.2	5.3	5.2
11.6	25.3	24.4	25.5	-31.7	-31.6	-32.1	5.2	5.2	5.3
11.7	24.9	24.4	25.3	-31.3	-31.3	-31.9	5.2	5.2	5.2
11.8	24.9	24.2	25.3	-31.0	-31.1	-31.7	5.1	5.2	5.2
11.9	24.8	23.9	25.2	-30.5	-30.7	-31.4	5.1	5.2	5.2
12.0	24.6	24.0	25.0	-30.5	-30.6	-31.3	5.1	5.2	5.2

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = +25°C

P_{IN}	P_{OUT} (@5.6 GHz)	P_{OUT} (@7.1 GHz)	P_{OUT} (@8.5 GHz)	P_{OUT} (@10 GHz)	P_{OUT} (@11.7 GHz)	I_{DD} (@5.6 GHz)	I_{DD} (@7.1 GHz)	I_{DD} (@8.5 GHz)	I_{DD} (@10.0 GHz)	I_{DD} (@11.7 GHz)
(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(mA)	(mA)	(mA)	(mA)	(mA)
-15.3	6.1	6.5	6.5	6.5	5.4	138	138	138	138	138
-14.1	7.3	7.7	7.7	7.7	6.6	137	137	137	136	137
-12.9	8.6	9.0	8.9	9.0	7.8	138	136	136	138	137
-11.6	9.8	10.2	10.2	10.2	9.1	136	136	136	137	137
-10.4	11.0	11.5	11.4	11.5	10.3	137	135	137	137	137
-9.2	12.3	12.8	12.7	12.7	11.6	137	136	136	137	135
-8.0	13.6	14.1	14.0	14.0	13.0	137	135	136	136	136
-6.7	14.8	15.4	15.3	15.3	14.3	138	136	136	136	135
-5.5	16.1	16.7	16.6	16.6	15.6	136	136	137	136	135
-4.2	17.3	17.9	17.8	17.8	16.9	138	137	136	137	137
-3.0	18.3	19.0	19.0	18.9	18.1	141	137	138	139	139
-1.8	19.1	19.9	19.9	19.8	19.1	142	140	138	139	140
-0.5	19.9	20.6	20.6	20.4	19.9	147	145	141	141	142
0.7	20.4	21.1	21.1	20.9	20.5	153	149	144	144	148
2.0	20.9	21.5	21.4	21.3	20.9	159	154	147	146	152
3.2	21.2	21.8	21.8	21.6	21.3	165	160	155	152	160
4.5	21.5	22.1	22.0	21.9	21.6	171	165	159	158	169
5.8	21.7	22.3	22.3	22.1	21.8	177	170	166	167	174
7.0	21.9	22.5	22.4	22.4	22.0	182	177	170	173	184
8.3	22.1	22.6	22.6	22.5	22.1	191	183	175	179	189
9.6	22.2	22.8	22.7	22.7	22.2	196	186	182	185	194

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = +95°C

P_{IN}	P_{OUT} (@5.6 GHz)	P_{OUT} (@7.1 GHz)	P_{OUT} (@8.5 GHz)	P_{OUT} (@10.0 GHz)	P_{OUT} (@11.7 GHz)
(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
-14.7	5.5	5.9	5.7	5.7	4.6
-13.7	6.5	6.8	6.6	6.6	5.5
-12.7	7.5	7.8	7.6	7.6	6.5
-11.7	8.5	8.8	8.6	8.6	7.5
-10.7	9.5	9.8	9.6	9.6	8.5
-9.7	10.4	10.8	10.6	10.5	9.5
-8.7	11.4	11.8	11.6	11.5	10.5
-7.7	12.4	12.8	12.6	12.5	11.5
-6.7	13.4	13.8	13.6	13.5	12.5
-5.7	14.4	14.8	14.6	14.5	13.5
-4.7	15.3	15.8	15.6	15.5	14.5
-3.7	16.3	16.8	16.6	16.5	15.6
-2.7	17.2	17.8	17.6	17.5	16.6
-1.7	18.1	18.8	18.6	18.4	17.5
-0.7	18.8	19.7	19.5	19.3	18.5
0.3	19.5	20.4	20.3	20.0	19.3
1.3	20.0	21.0	20.9	20.6	20.1
2.3	20.5	21.5	21.4	21.1	20.7
3.2	20.9	21.8	21.8	21.5	21.2
4.2	21.2	22.1	22.1	21.8	21.6
5.2	21.4	22.4	22.4	22.1	21.9
6.2	21.6	22.6	22.6	22.3	22.1
7.2	21.8	22.8	22.8	22.5	22.3
8.2	21.9	22.9	23.0	22.7	22.5
9.2	22.1	23.1	23.1	22.9	22.6
10.2	22.2	23.2	23.2	23.0	22.7

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = -40°C

P_{IN}	P_{OUT} (@5.6 GHz)	P_{OUT} (@7.1 GHz)	P_{OUT} (@8.5 GHz)	P_{OUT} (@10.0 GHz)	P_{OUT} (@11.7 GHz)
(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
-14.8	10.6	11.3	11.0	11.3	11.0
-13.8	11.9	12.6	12.2	12.5	12.1
-12.8	12.9	13.7	13.2	13.6	13.2
-11.8	14.0	14.7	14.3	14.7	14.3
-10.8	15.0	15.8	15.4	15.7	15.4
-9.8	16.0	16.8	16.4	16.7	16.5
-8.8	17.0	17.8	17.4	17.7	17.5
-7.8	17.9	18.7	18.4	18.7	18.5
-6.8	18.8	19.6	19.3	19.6	19.4
-5.8	19.6	20.4	20.1	20.3	20.3
-4.9	20.3	21.0	20.8	21.0	21.0
-3.9	20.9	21.5	21.4	21.4	21.6
-2.9	21.4	21.9	21.8	21.8	22.1
-1.9	21.9	22.2	22.2	22.1	22.4
-0.9	22.3	22.5	22.5	22.4	22.8
0.1	22.5	22.7	22.8	22.7	23.0
1.1	22.8	22.9	23.0	22.9	23.3
2.1	22.9	23.1	23.2	23.2	23.5
3.1	23.1	23.2	23.4	23.4	23.6
4.1	23.2	23.3	23.5	23.6	23.7
5.1	23.3	23.4	23.6	23.7	23.8
6.1	23.4	23.4	23.7	23.9	23.9
7.1	23.5	23.5	23.8	23.9	23.9
8.1	23.5	23.6	23.9	24.0	24.0
9.1	23.6	23.6	23.9	24.1	24.0
10.1	23.6	23.7	24.0	24.1	24.0

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = +25°C

FREQ	P_{IN}	Gain	FREQ	P_{IN}	Gain	FREQ	P_{IN}	Gain
(GHz)	(dBm)	(dB)	(GHz)	(dBm)	(dB)	(GHz)	(dBm)	(dB)
5.6	-15.3	21.3	8.5	-15.4	21.8	11.7	-15.4	20.7
5.6	-14.1	21.3	8.5	-14.2	21.7	11.7	-14.2	20.7
5.6	-12.9	21.3	8.5	-12.9	21.8	11.7	-13.0	20.7
5.6	-11.6	21.3	8.5	-11.7	21.8	11.7	-11.8	20.7
5.6	-10.4	21.4	8.5	-10.5	21.8	11.7	-10.5	20.8
5.6	-9.2	21.4	8.5	-9.2	21.9	11.7	-9.3	20.9
5.6	-8.0	21.4	8.5	-8.0	21.9	11.7	-8.1	20.9
5.6	-6.7	21.5	8.5	-6.8	22.0	11.7	-6.8	21.0
5.6	-5.5	21.5	8.5	-5.5	22.0	11.7	-5.6	21.1
5.6	-4.2	21.4	8.5	-4.3	22.0	11.7	-4.3	21.1
5.6	-3.0	21.2	8.5	-3.0	21.9	11.7	-3.0	21.1
5.6	-1.7	20.8	8.5	-1.8	21.6	11.7	-1.8	20.8
5.6	-0.5	20.3	8.5	-0.5	21.0	11.7	-0.5	20.4
5.6	0.7	19.6	8.5	0.7	20.3	11.7	0.7	19.7
5.6	2.0	18.8	8.5	2.0	19.4	11.7	1.9	18.9
5.6	3.2	17.9	8.5	3.3	18.4	11.7	3.2	18.0
5.6	4.5	16.9	8.5	4.5	17.4	11.7	4.5	17.0
5.6	5.8	15.9	8.5	5.8	16.4	11.7	5.8	15.9
5.6	7.0	14.8	8.5	7.1	15.3	11.7	7.0	14.8
5.6	8.3	13.7	8.5	8.3	14.2	11.7	8.3	13.7
5.6	9.6	12.6	8.5	9.6	13.0	11.7	9.6	12.5
7.1	-15.4	21.8	10.0	-15.4	21.8			
7.1	-14.1	21.8	10.0	-14.2	21.8			
7.1	-12.9	21.8	10.0	-12.9	21.8			
7.1	-11.7	21.8	10.0	-11.7	21.8			
7.1	-10.5	21.9	10.0	-10.5	21.9			
7.1	-9.2	21.9	10.0	-9.3	21.9			
7.1	-8.0	22.0	10.0	-8.0	22.0			
7.1	-6.7	22.1	10.0	-6.8	22.0			
7.1	-5.5	22.1	10.0	-5.6	22.1			
7.1	-4.2	22.1	10.0	-4.3	22.0			
7.1	-3.0	22.0	10.0	-3.0	21.9			
7.1	-1.7	21.6	10.0	-1.8	21.5			
7.1	-0.5	21.0	10.0	-0.5	20.9			
7.1	0.7	20.3	10.0	0.7	20.1			
7.1	2.0	19.4	10.0	1.9	19.2			
7.1	3.2	18.5	10.0	3.2	18.3			
7.1	4.5	17.5	10.0	4.5	17.3			
7.1	5.8	16.4	10.0	5.7	16.3			
7.1	7.1	15.3	10.0	7.0	15.2			
7.1	8.3	14.2	10.0	8.3	14.1			
7.1	9.6	13.0	10.0	9.6	13.0			

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = +95°C

FREQ	P_{IN}	Gain	FREQ	P_{IN}	Gain	FREQ	P_{IN}	Gain
(GHz)	(dBm)	(dB)	(GHz)	(dBm)	(dB)	(GHz)	(dBm)	(dB)
5.6	-14.7	20.4	8.5	-14.7	20.7	11.7	-14.7	19.6
5.6	-13.7	20.3	8.5	-13.7	20.7	11.7	-13.7	19.6
5.6	-12.7	20.3	8.5	-12.7	20.7	11.7	-12.7	19.5
5.6	-11.7	20.3	8.5	-11.7	20.7	11.7	-11.7	19.5
5.6	-10.7	20.3	8.5	-10.7	20.6	11.7	-10.7	19.5
5.6	-9.7	20.3	8.5	-9.7	20.6	11.7	-9.7	19.5
5.6	-8.7	20.3	8.5	-8.7	20.6	11.7	-8.7	19.5
5.6	-7.7	20.3	8.5	-7.7	20.6	11.7	-7.7	19.6
5.6	-6.7	20.2	8.5	-6.7	20.7	11.7	-6.7	19.6
5.6	-5.7	20.2	8.5	-5.7	20.7	11.7	-5.7	19.6
5.6	-4.7	20.2	8.5	-4.7	20.7	11.7	-4.7	19.6
5.6	-3.7	20.2	8.5	-3.7	20.7	11.7	-3.7	19.6
5.6	-2.7	20.1	8.5	-2.7	20.7	11.7	-2.7	19.6
5.6	-1.7	20.0	8.5	-1.7	20.7	11.7	-1.7	19.6
5.6	-0.7	19.7	8.5	-0.7	20.6	11.7	-0.7	19.5
5.6	0.3	19.4	8.5	0.3	20.4	11.7	0.3	19.4
5.6	1.3	18.9	8.5	1.3	20.0	11.7	1.3	19.1
5.6	2.3	18.4	8.5	2.3	19.5	11.7	2.3	18.8
5.6	3.2	17.8	8.5	3.2	18.9	11.7	3.2	18.3
5.6	4.2	17.1	8.5	4.2	18.3	11.7	4.2	17.7
5.6	5.2	16.3	8.5	5.2	17.5	11.7	5.2	17.0
5.6	6.2	15.6	8.5	6.2	16.8	11.7	6.2	16.2
5.6	7.2	14.7	8.5	7.2	16.0	11.7	7.2	15.4
5.6	8.2	13.9	8.5	8.2	15.1	11.7	8.2	14.6
5.6	9.2	13.0	8.5	9.2	14.2	11.7	9.2	13.7
5.6	10.2	12.1	8.5	10.2	13.3	11.7	10.2	12.8
7.1	-14.7	20.9	10.0	-14.7	20.7			
7.1	-13.7	20.8	10.0	-13.7	20.6			
7.1	-12.7	20.8	10.0	-12.7	20.6			
7.1	-11.7	20.8	10.0	-11.7	20.6			
7.1	-10.7	20.8	10.0	-10.7	20.6			
7.1	-9.7	20.8	10.0	-9.7	20.6			
7.1	-8.7	20.8	10.0	-8.7	20.6			
7.1	-7.7	20.8	10.0	-7.7	20.6			
7.1	-6.7	20.8	10.0	-6.7	20.6			
7.1	-5.7	20.8	10.0	-5.7	20.6			
7.1	-4.7	20.8	10.0	-4.7	20.6			
7.1	-3.7	20.8	10.0	-3.7	20.6			
7.1	-2.7	20.8	10.0	-2.7	20.5			
7.1	-1.7	20.8	10.0	-1.7	20.5			
7.1	-0.7	20.7	10.0	-0.7	20.3			
7.1	0.3	20.5	10.0	0.3	20.1			
7.1	1.3	20.1	10.0	1.3	19.7			
7.1	2.3	19.5	10.0	2.3	19.2			
7.1	3.2	18.9	10.0	3.2	18.6			
7.1	4.2	18.2	10.0	4.2	17.9			
7.1	5.2	17.5	10.0	5.2	17.2			
7.1	6.2	16.7	10.0	6.2	16.4			
7.1	7.2	15.9	10.0	7.2	15.6			
7.1	8.2	15.0	10.0	8.2	14.9			
7.1	9.2	14.1	10.0	9.2	14.0			
7.1	10.2	13.3	10.0	10.2	13.2			

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = -40°C

FREQ	P_{IN}	Gain	FREQ	P_{IN}	Gain	FREQ	P_{IN}	Gain
(GHz)	(dBm)	(dB)	(GHz)	(dBm)	(dB)	(GHz)	(dBm)	(dB)
5.6	-14.8	25.5	8.5	-14.8	26.0	11.7	-14.8	26.0
5.6	-13.8	25.8	8.5	-13.8	26.2	11.7	-13.8	26.2
5.6	-12.8	25.9	8.5	-12.8	26.3	11.7	-12.8	26.3
5.6	-11.8	25.9	8.5	-11.8	26.3	11.7	-11.8	26.4
5.6	-10.8	25.9	8.5	-10.8	26.4	11.7	-10.8	26.5
5.6	-9.8	26.0	8.5	-9.8	26.4	11.7	-9.8	26.5
5.6	-8.8	25.9	8.5	-8.8	26.5	11.7	-8.8	26.6
5.6	-7.8	25.9	8.5	-7.8	26.4	11.7	-7.8	26.6
5.6	-6.8	25.8	8.5	-6.8	26.4	11.7	-6.8	26.5
5.6	-5.8	25.6	8.5	-5.8	26.2	11.7	-5.8	26.4
5.6	-4.8	25.3	8.5	-4.8	25.9	11.7	-4.8	26.1
5.6	-3.8	24.9	8.5	-3.8	25.5	11.7	-3.8	25.7
5.6	-2.8	24.4	8.5	-2.8	24.9	11.7	-2.8	25.2
5.6	-1.8	23.9	8.5	-1.8	24.3	11.7	-1.8	24.5
5.6	-0.8	23.2	8.5	-0.8	23.6	11.7	-0.8	23.9
5.6	0.2	22.5	8.5	0.2	22.9	11.7	0.2	23.1
5.6	1.2	21.7	8.5	1.2	22.1	11.7	1.2	22.4
5.6	2.2	20.9	8.5	2.2	21.3	11.7	2.2	21.6
5.6	3.2	20.1	8.5	3.2	20.5	11.7	3.2	20.7
5.6	4.2	19.2	8.5	4.2	19.6	11.7	4.2	19.9
5.6	5.2	18.3	8.5	5.2	18.7	11.7	5.2	19.0
5.6	6.2	17.4	8.5	6.2	17.8	11.7	6.2	18.0
5.6	7.2	16.5	8.5	7.2	16.9	11.7	7.2	17.1
5.6	8.1	15.5	8.5	8.1	16.0	11.7	8.1	16.1
5.6	9.1	14.6	8.5	9.1	15.0	11.7	9.1	15.1
5.6	10.2	13.6	8.5	10.2	14.0	11.7	10.2	14.2
7.1	-14.8	26.3	10.0	-14.8	26.3			
7.1	-13.8	26.6	10.0	-13.8	26.5			
7.1	-12.8	26.7	10.0	-12.8	26.6			
7.1	-11.8	26.7	10.0	-11.8	26.7			
7.1	-10.8	26.8	10.0	-10.8	26.7			
7.1	-9.8	26.8	10.0	-9.8	26.8			
7.1	-8.8	26.8	10.0	-8.8	26.8			
7.1	-7.8	26.8	10.0	-7.8	26.7			
7.1	-6.8	26.6	10.0	-6.8	26.6			
7.1	-5.8	26.4	10.0	-5.8	26.4			
7.1	-4.8	26.0	10.0	-4.8	26.0			
7.1	-3.8	25.5	10.0	-3.8	25.5			
7.1	-2.8	24.9	10.0	-2.8	24.9			
7.1	-1.8	24.3	10.0	-1.8	24.2			
7.1	-0.8	23.6	10.0	-0.8	23.5			
7.1	0.2	22.8	10.0	0.2	22.8			
7.1	1.2	22.0	10.0	1.2	22.0			
7.1	2.2	21.2	10.0	2.2	21.3			
7.1	3.2	20.3	10.0	3.2	20.5			
7.1	4.2	19.4	10.0	4.2	19.7			
7.1	5.2	18.5	10.0	5.2	18.9			
7.1	6.2	17.6	10.0	6.2	18.0			
7.1	7.2	16.6	10.0	7.2	17.1			
7.1	8.1	15.7	10.0	8.1	16.2			
7.1	9.1	14.8	10.0	9.1	15.2			
7.1	10.2	13.8	10.0	10.2	14.2			

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = +25°C

Power	P_{DISS} (@5.6 GHz)	P_{DISS} (@7.1 GHz)	P_{DISS} (@8.5 GHz)	P_{DISS} (@10 GHz)	P_{DISS} (@11.7 GHz)	PAE (@5.6 GHz)	PAE (@7.1 GHz)	PAE (@8.5 GHz)	PAE (@10.0 GHz)	PAE (@11.7 GHz)
(dBm)	(W)	(W)	(W)	(W)	(W)	(%)	(%)	(%)	(%)	(%)
-15.3	0.69	0.69	0.69	0.69	0.69	0.6	0.6	0.6	0.6	0.0
-14.1	0.68	0.68	0.68	0.67	0.68	0.8	0.9	0.8	0.9	0.7
-12.9	0.68	0.67	0.67	0.68	0.68	1.0	1.2	1.1	1.1	0.9
-11.6	0.67	0.67	0.67	0.68	0.68	1.4	1.5	1.5	1.5	1.2
-10.4	0.67	0.66	0.67	0.67	0.67	1.8	2.1	2.0	2.1	1.6
-9.2	0.67	0.66	0.66	0.67	0.66	2.5	2.8	2.7	2.7	2.1
-8.0	0.66	0.65	0.66	0.66	0.66	3.3	3.8	3.7	3.7	2.9
-6.7	0.66	0.65	0.65	0.65	0.65	4.4	5.1	5.0	5.0	4.0
-5.5	0.64	0.63	0.64	0.64	0.64	6.0	6.8	6.6	6.7	5.3
-4.2	0.64	0.62	0.62	0.63	0.64	7.7	9.0	8.8	8.7	7.1
-3.0	0.64	0.61	0.61	0.62	0.63	9.5	11.5	11.4	11.1	9.2
-1.8	0.63	0.60	0.59	0.60	0.62	11.4	13.9	14.1	13.6	11.5
-0.5	0.64	0.61	0.59	0.60	0.61	13.2	15.7	16.2	15.4	13.6
0.7	0.66	0.62	0.59	0.60	0.63	14.2	17.1	17.7	16.9	15.0
2.0	0.67	0.63	0.60	0.60	0.64	15.3	18.1	18.6	18.3	16.0
3.2	0.70	0.65	0.63	0.62	0.67	15.7	18.7	19.3	18.7	16.6
4.5	0.72	0.67	0.64	0.64	0.70	16.2	19.3	19.6	19.3	16.8
5.8	0.74	0.68	0.66	0.68	0.72	16.3	19.5	20.0	19.0	17.0
7.0	0.76	0.71	0.68	0.70	0.77	16.5	19.5	19.8	19.5	16.7
8.3	0.80	0.74	0.70	0.72	0.79	16.3	19.1	20.0	19.1	16.4
9.6	0.82	0.75	0.73	0.75	0.81	16.0	19.5	19.5	19.2	16.2

Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = +25°C

Power	OIP3 (@5.6 GHz)	OIP3 (@7.1 GHz)	OIP3 (@8.5 GHz)	OIP3 (@10 GHz)	OIP3 (@11.7 GHz)
(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
0.0	27.2	27.5	27.4	26.6	23.9
3.0	27.1	27.2	27.4	26.6	23.8
6.0	27.1	27.1	27.2	26.5	23.8
9.0	27.5	27.4	27.5	26.8	24.4
12.0	28.1	28.9	29.2	28.1	25.6
15.0	25.7	27.0	28.1	26.3	23.5

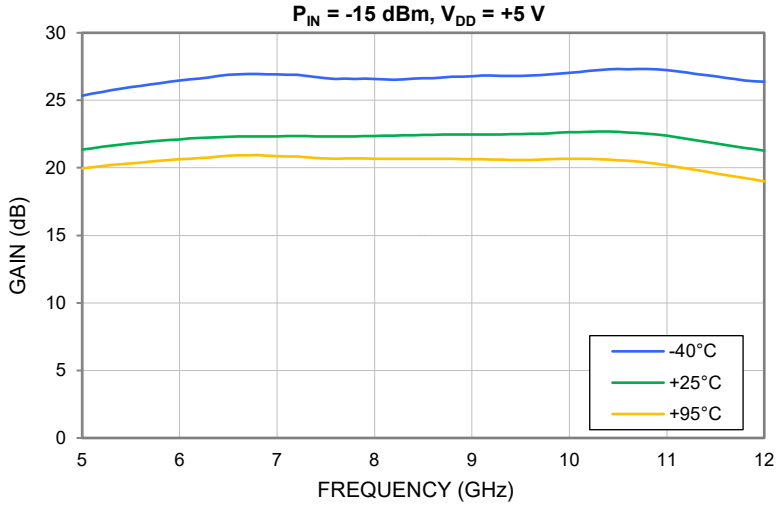
Typical Performance Data

TEST CONDITIONS: V_{DD} = +5 V, I_{DD} = 140 mA @ Temperature = +25°C

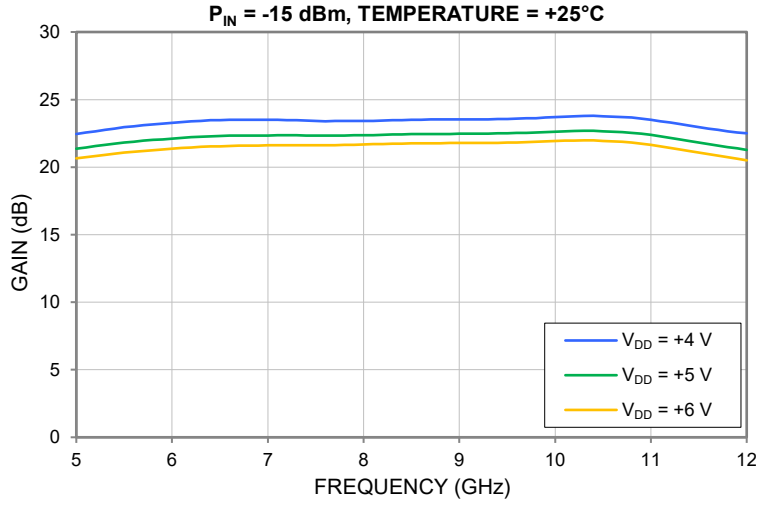
FREQ	P_{OUT}	Phase	FREQ	P_{OUT}	Phase	FREQ	P_{OUT}	Phase
(GHz)	(dBm)	(°)	(GHz)	(dBm)	(°)	(GHz)	(dBm)	(°)
5.6	6.1	0.0	8.5	6.5	0.0	11.7	5.4	0.0
5.6	7.3	0.5	8.5	7.7	0.0	11.7	6.6	0.2
5.6	8.6	0.5	8.5	8.9	0.5	11.7	7.8	0.6
5.6	9.8	1.0	8.5	10.2	1.0	11.7	9.1	1.0
5.6	11.0	1.5	8.5	11.4	1.0	11.7	10.3	1.6
5.6	12.3	1.5	8.5	12.7	2.0	11.7	11.6	2.4
5.6	13.6	2.5	8.5	14.0	2.5	11.7	13.0	3.5
5.6	14.8	3.5	8.5	15.3	3.0	11.7	14.3	4.7
5.6	16.1	4.5	8.5	16.6	4.0	11.7	15.6	6.1
5.6	17.3	6.0	8.5	17.8	5.5	11.7	16.9	7.6
5.6	18.3	8.0	8.5	19.0	7.0	11.7	18.1	9.2
5.6	19.1	10.5	8.5	19.9	8.0	11.7	19.1	10.9
5.6	19.9	13.0	8.5	20.6	9.5	11.7	19.9	13.2
5.6	20.4	15.5	8.5	21.1	11.0	11.7	20.5	15.7
5.6	20.9	17.5	8.5	21.4	13.0	11.7	20.9	18.1
5.6	21.2	19.5	8.5	21.8	14.5	11.7	21.3	20.3
5.6	21.5	21.5	8.5	22.0	16.0	11.7	21.6	22.0
5.6	21.7	23.0	8.5	22.3	17.5	11.7	21.8	23.4
5.6	21.9	24.5	8.5	22.4	19.0	11.7	22.0	24.6
5.6	22.1	25.5	8.5	22.6	20.5	11.7	22.1	25.3
5.6	22.2	26.5	8.5	22.7	21.5	11.7	22.2	25.9
7.1	6.5	0.0	10.0	6.5	0.0			
7.1	7.7	0.2	10.0	7.7	0.2			
7.1	9.0	0.4	10.0	9.0	0.6			
7.1	10.2	0.7	10.0	10.2	1.0			
7.1	11.5	1.1	10.0	11.5	1.6			
7.1	12.8	1.7	10.0	12.7	2.4			
7.1	14.1	2.4	10.0	14.0	3.5			
7.1	15.4	3.3	10.0	15.3	4.7			
7.1	16.7	4.4	10.0	16.6	6.1			
7.1	17.9	5.7	10.0	17.8	7.6			
7.1	19.0	7.3	10.0	18.9	9.2			
7.1	19.9	9.5	10.0	19.8	10.9			
7.1	20.6	11.9	10.0	20.4	13.2			
7.1	21.1	14.1	10.0	20.9	15.7			
7.1	21.5	16.1	10.0	21.3	18.1			
7.1	21.8	17.9	10.0	21.6	20.3			
7.1	22.1	19.5	10.0	21.9	22.0			
7.1	22.3	20.9	10.0	22.1	23.4			
7.1	22.5	21.9	10.0	22.4	24.6			
7.1	22.6	22.6	10.0	22.5	25.3			
7.1	22.8	23.2	10.0	22.7	25.9			

Typical Performance Curves

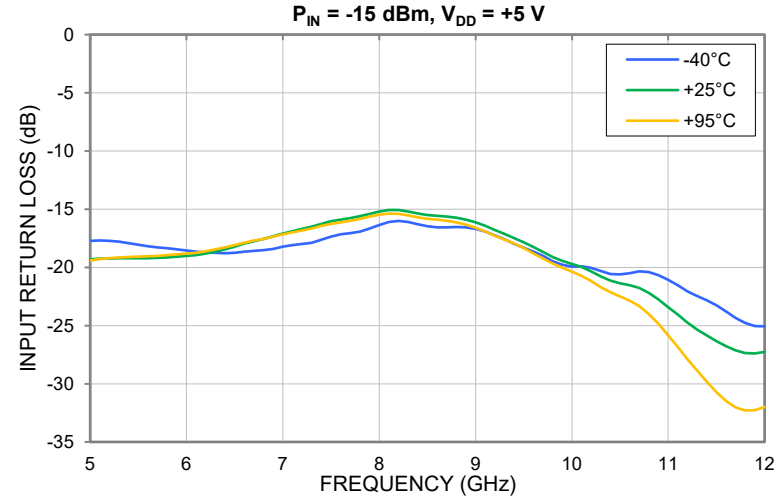
GAIN vs. TEMPERATURE
P_{IN} = -15 dBm, V_{DD} = +5 V



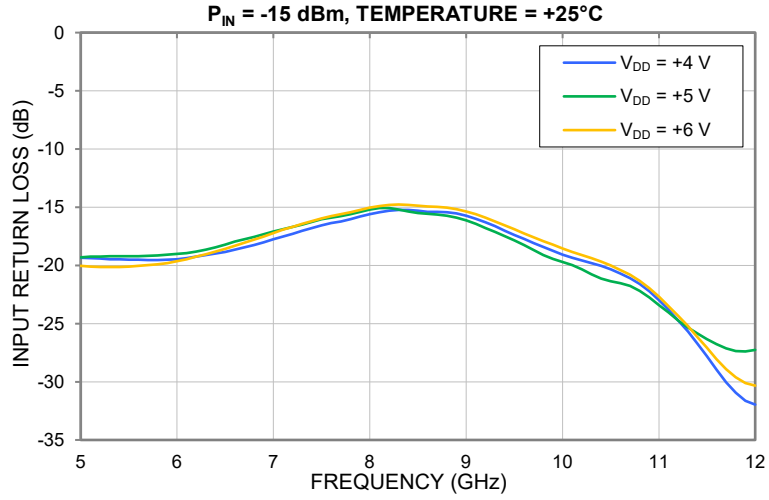
GAIN vs. DEVICE VOLTAGE
P_{IN} = -15 dBm, TEMPERATURE = +25°C



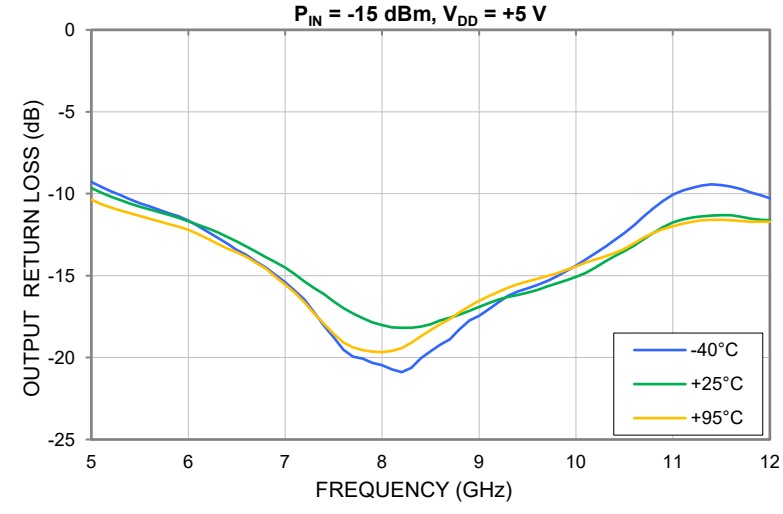
INPUT RETURN LOSS vs.TEMPERATURE
P_{IN} = -15 dBm, V_{DD} = +5 V



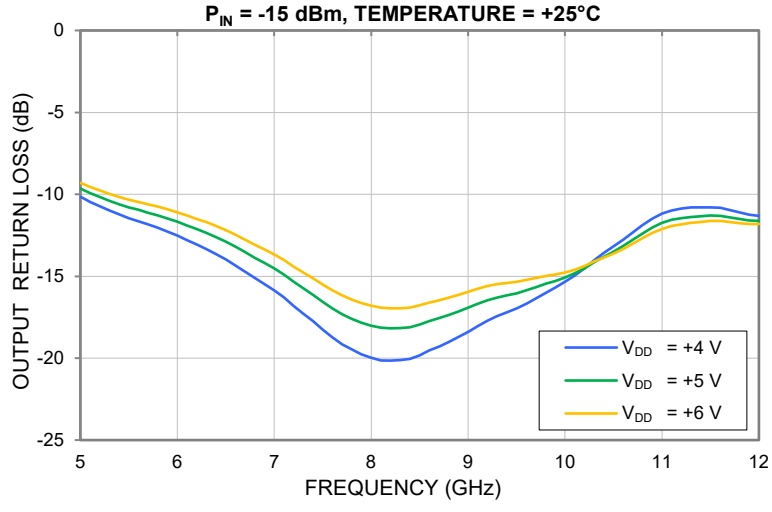
INPUT RETURN LOSS vs. DEVICE VOLTAGE
P_{IN} = -15 dBm, TEMPERATURE = +25°C



OUTPUT RETURN LOSS vs. TEMPERATURE
P_{IN} = -15 dBm, V_{DD} = +5 V

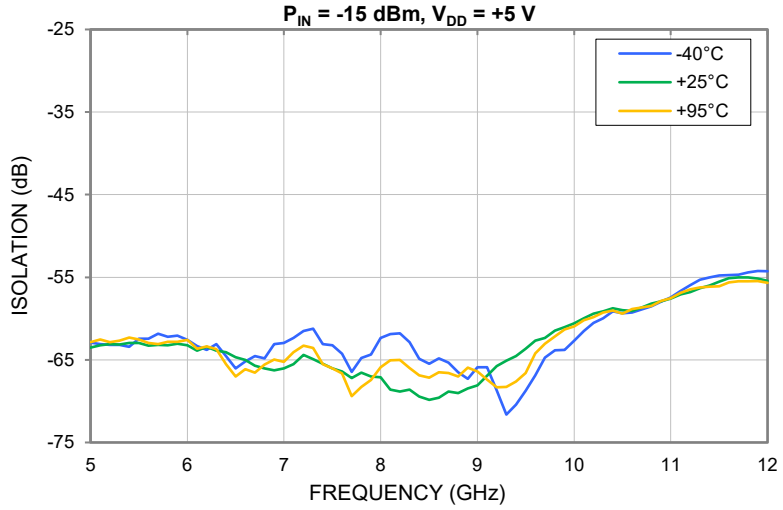


OUTPUT RETURN LOSS vs. DEVICE VOLTAGE
P_{IN} = -15 dBm, TEMPERATURE = +25°C

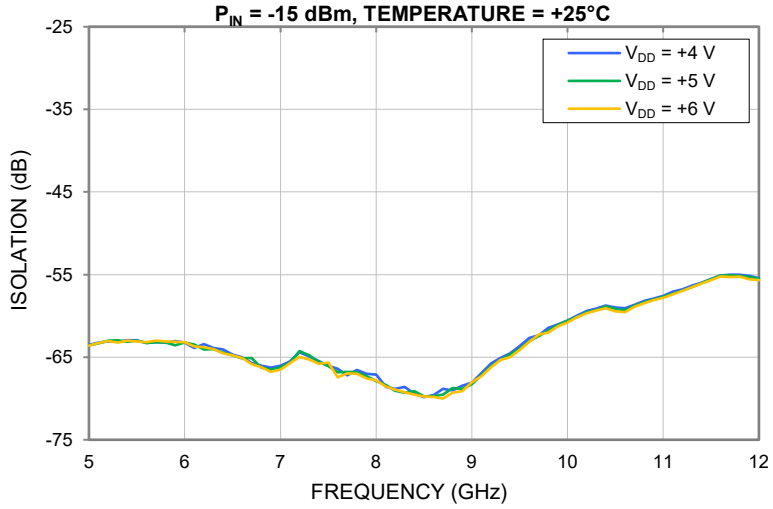


Typical Performance Curves

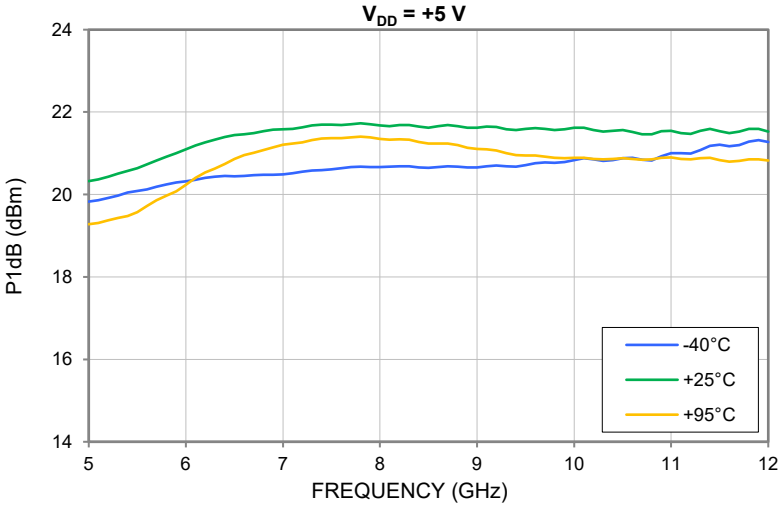
ISOLATION vs.TEMPERATURE
P_{IN} = -15 dBm, V_{DD} = +5 V



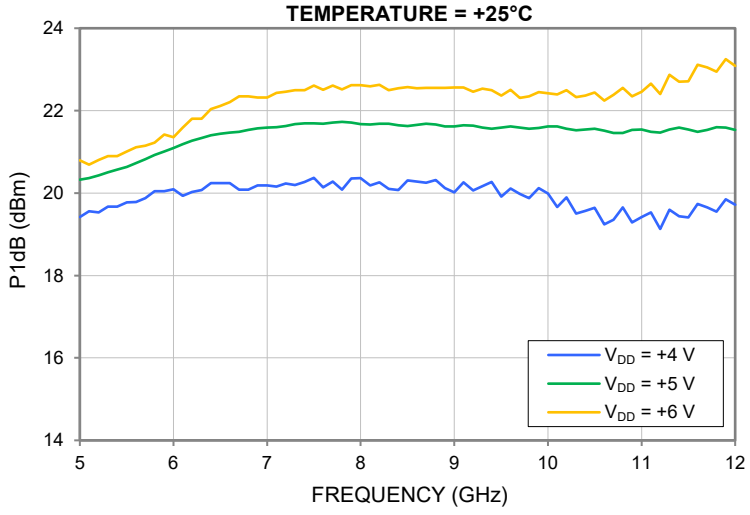
ISOLATION vs. DEVICE VOLTAGE
P_{IN} = -15 dBm, TEMPERATURE = +25°C



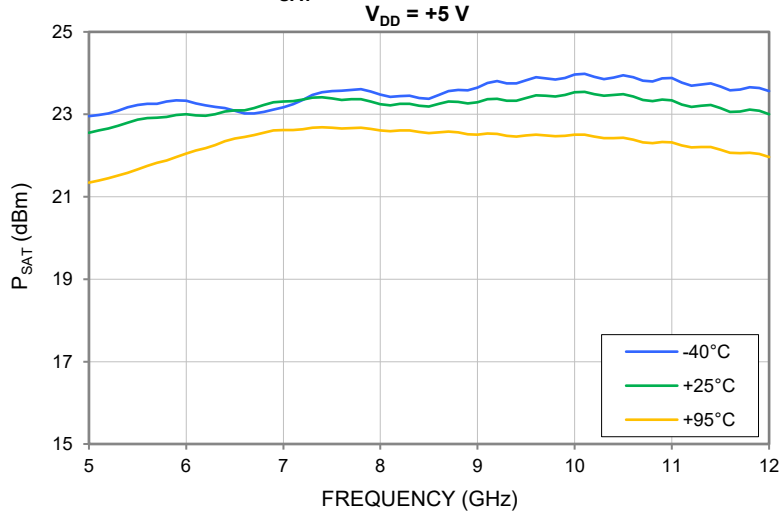
P1dB vs. TEMPERATURE
V_{DD} = +5 V



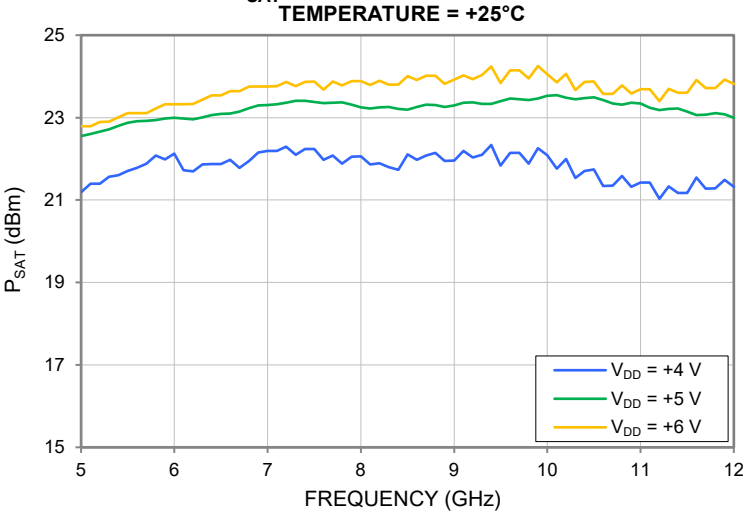
P1dB vs. DEVICE VOLTAGE
TEMPERATURE = +25°C



P_{SAT} vs. TEMPERATURE
V_{DD} = +5 V

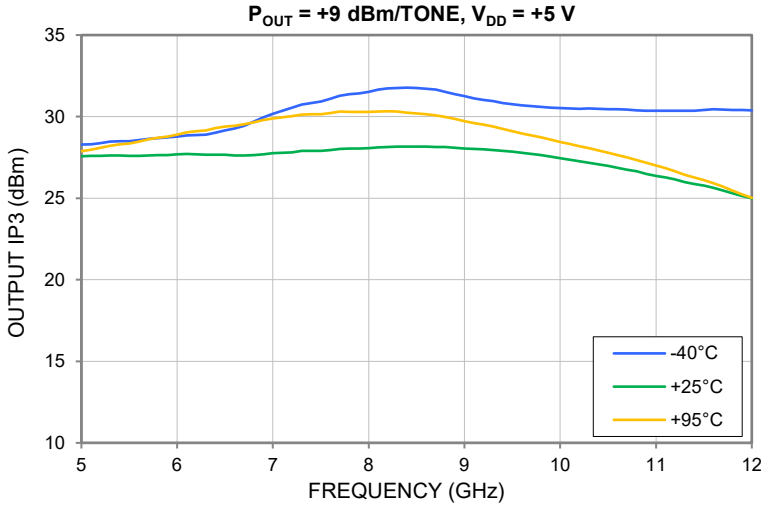


P_{SAT} vs. DEVICE VOLTAGE
TEMPERATURE = +25°C

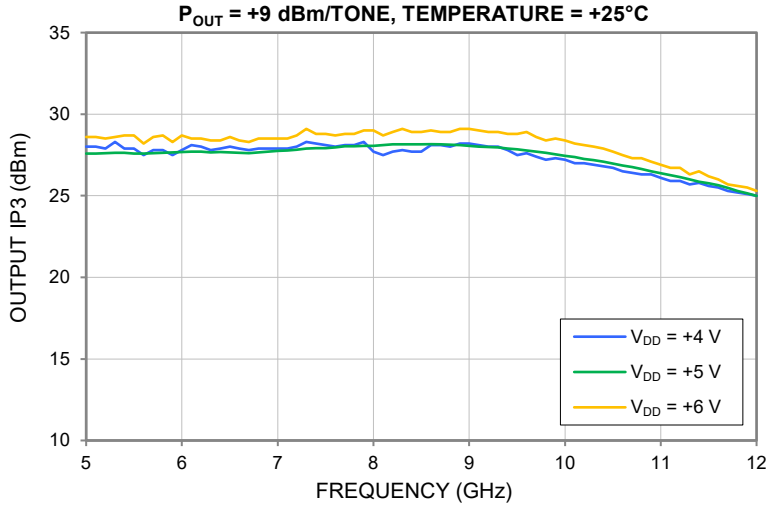


Typical Performance Curves

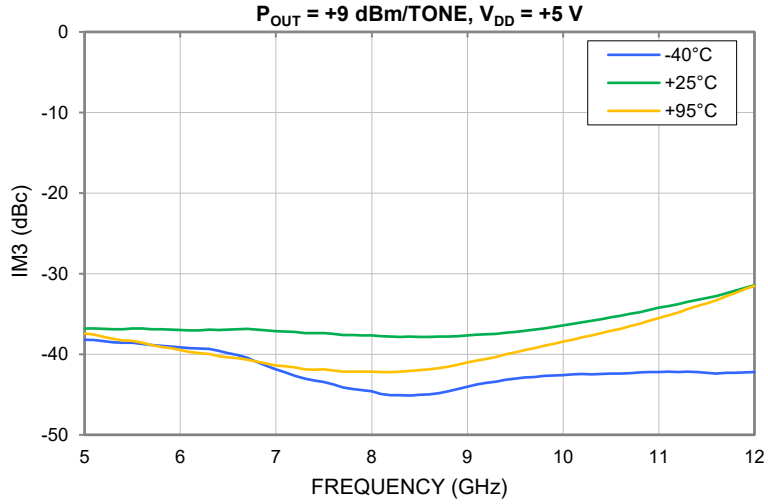
OUTPUT IP3 vs. TEMPERATURE
P_{OUT} = +9 dBm/TONE, V_{DD} = +5 V



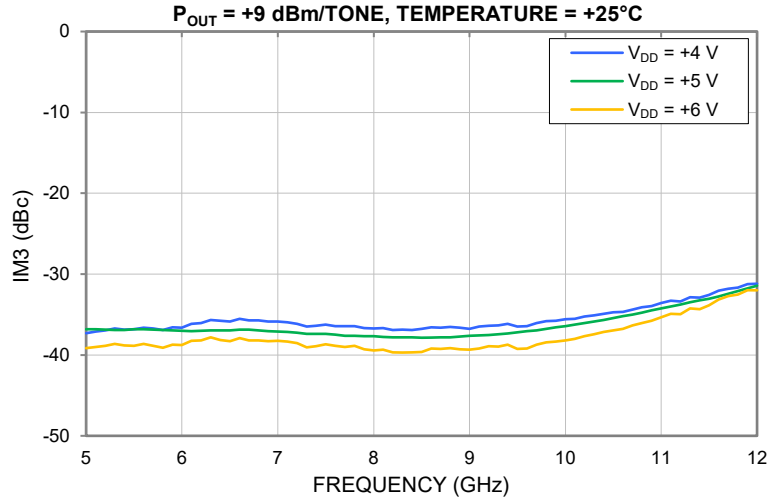
OUTPUT IP3 vs. DEVICE VOLTAGE
P_{OUT} = +9 dBm/TONE, TEMPERATURE = +25°C



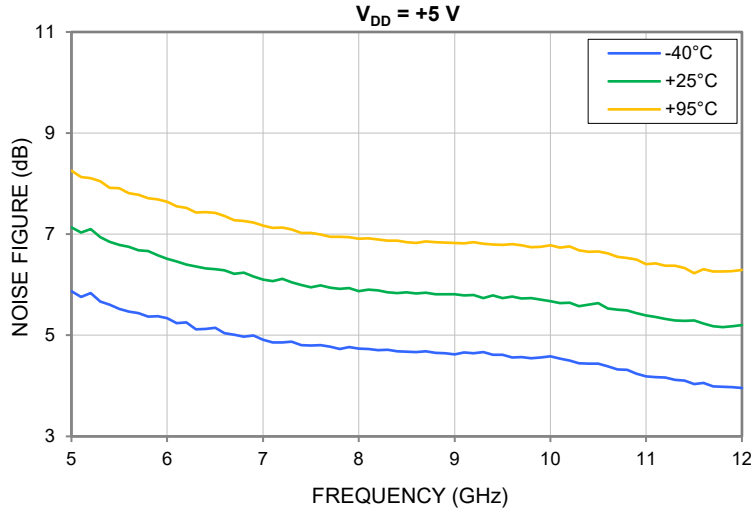
IM3 vs. TEMPERATURE
P_{OUT} = +9 dBm/TONE, V_{DD} = +5 V



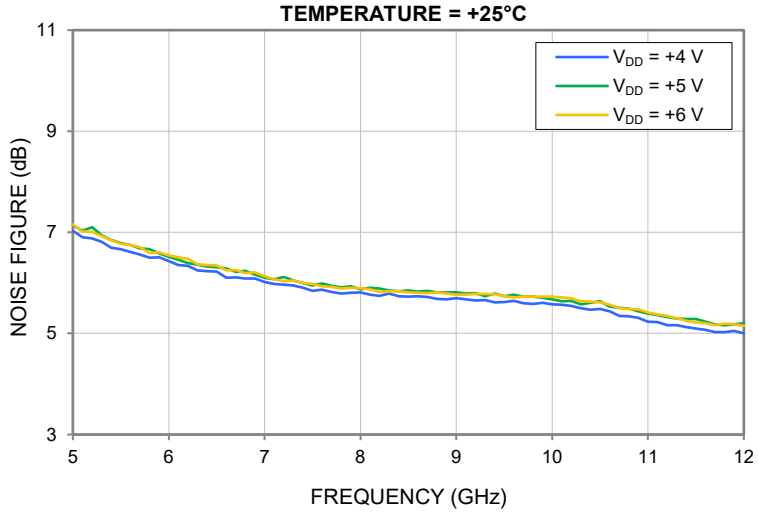
IM3 vs. DEVICE VOLTAGE
P_{OUT} = +9 dBm/TONE, TEMPERATURE = +25°C



NOISE FIGURE vs. TEMPERATURE
V_{DD} = +5 V

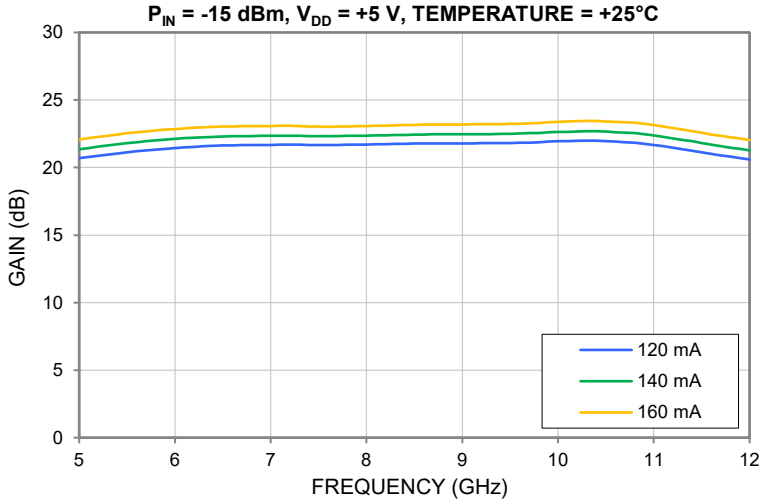


NOISE FIGURE vs. DEVICE VOLTAGE
TEMPERATURE = +25°C

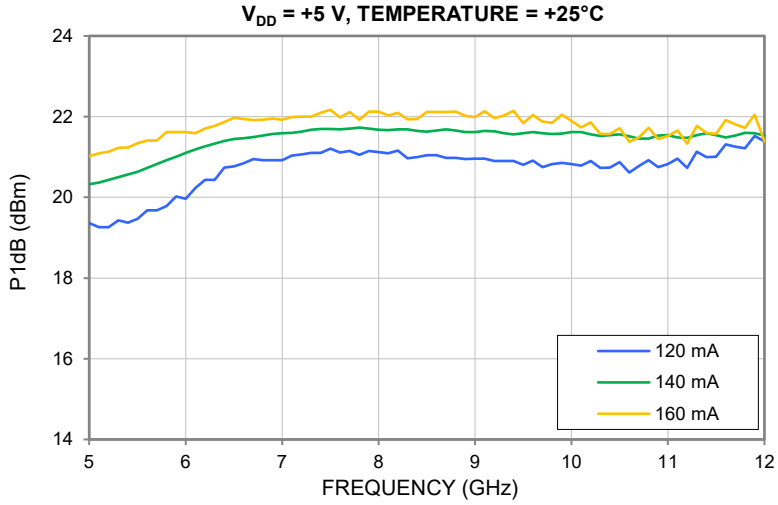


Typical Performance Curves

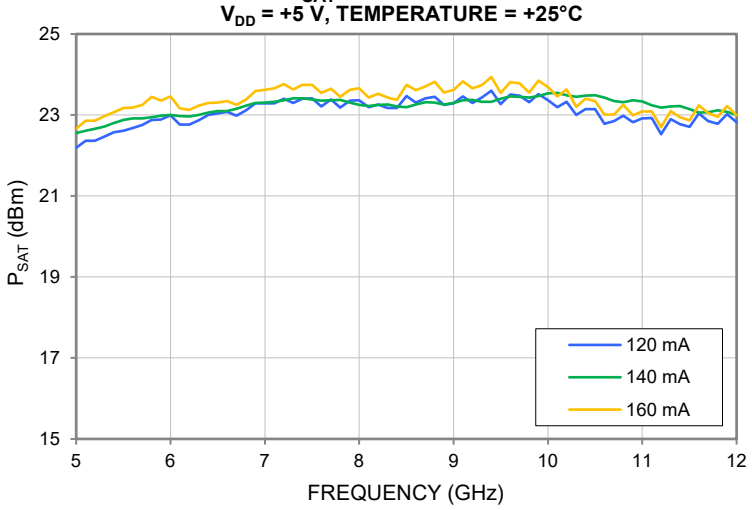
GAIN vs. CURRENT
P_{IN} = -15 dBm, V_{DD} = +5 V, TEMPERATURE = +25°C



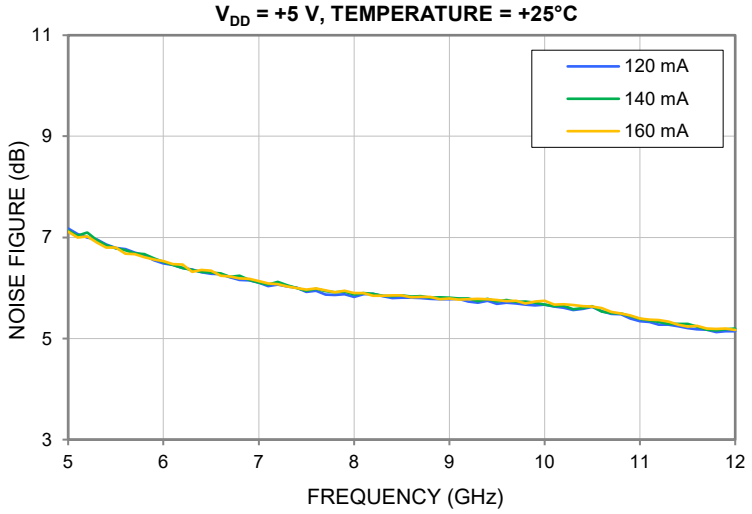
P1dB vs. CURRENT
V_{DD} = +5 V, TEMPERATURE = +25°C



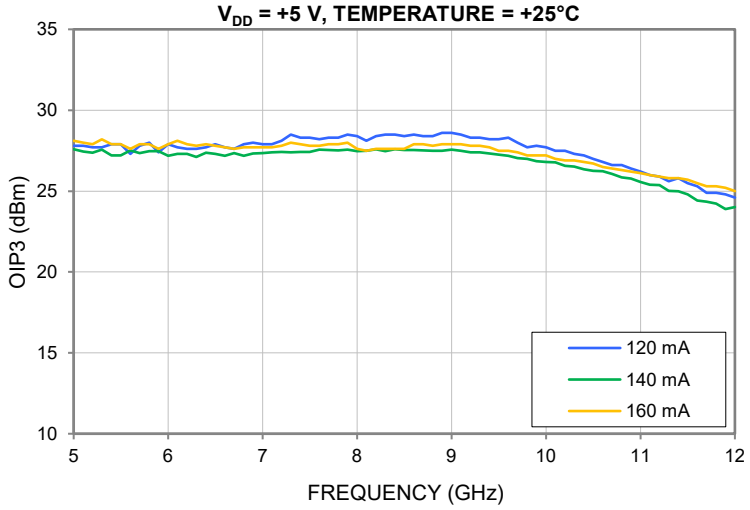
P_{SAT} vs. CURRENT
V_{DD} = +5 V, TEMPERATURE = +25°C



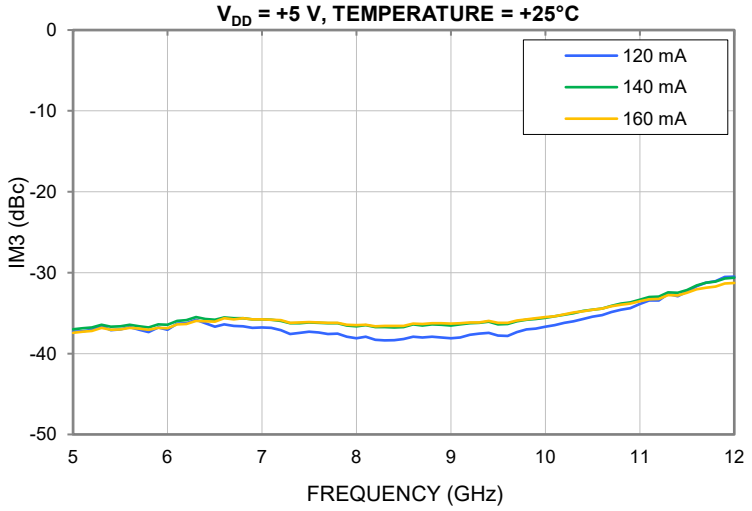
NOISE FIGURE vs. CURRENT
V_{DD} = +5 V, TEMPERATURE = +25°C



OIP3 vs. CURRENT
V_{DD} = +5 V, TEMPERATURE = +25°C

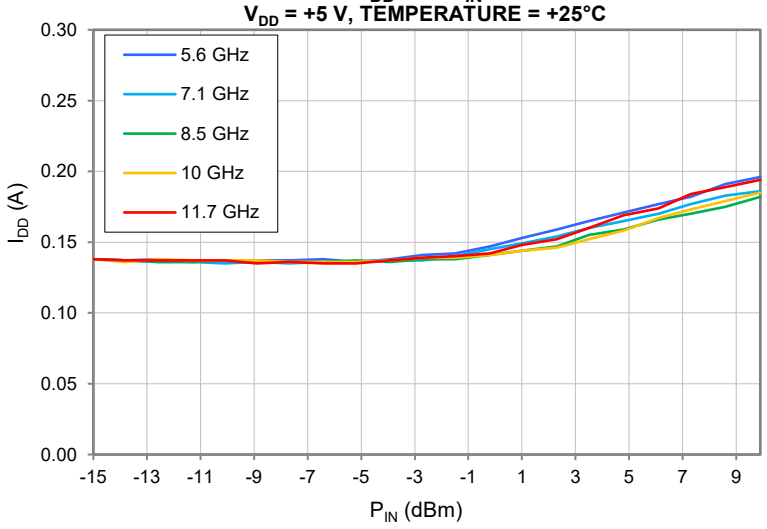


IM3 vs. CURRENT
V_{DD} = +5 V, TEMPERATURE = +25°C

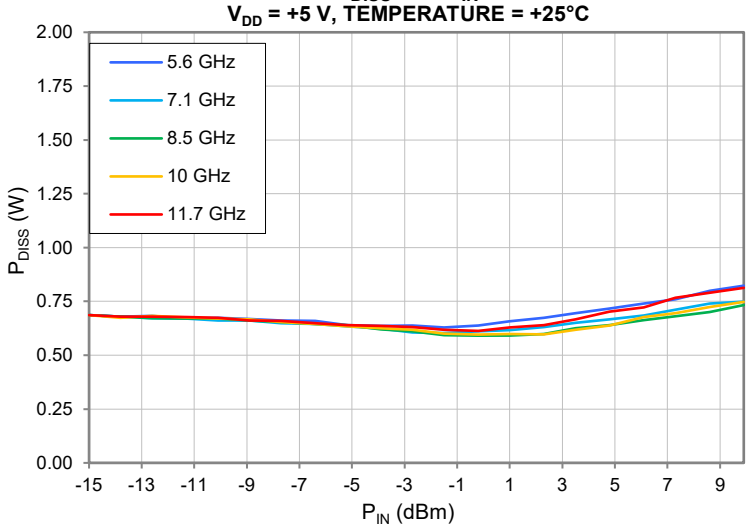


Typical Performance Curves

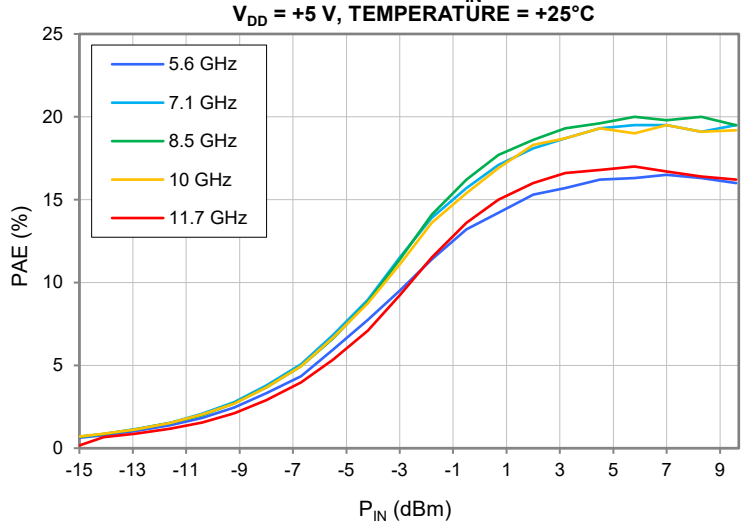
I_{DD} vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +25°C



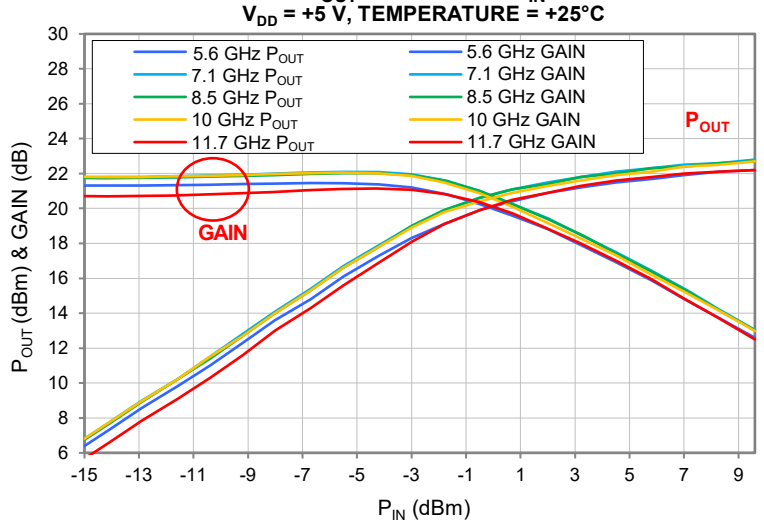
P_{DISS} vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +25°C



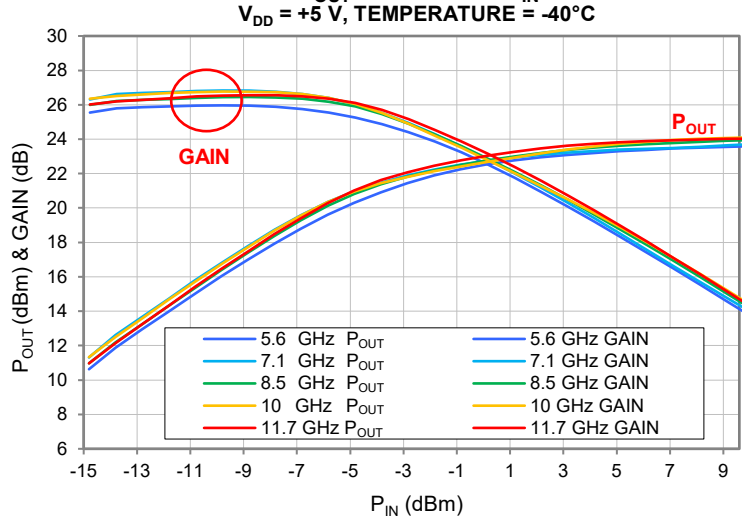
PAE vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +25°C



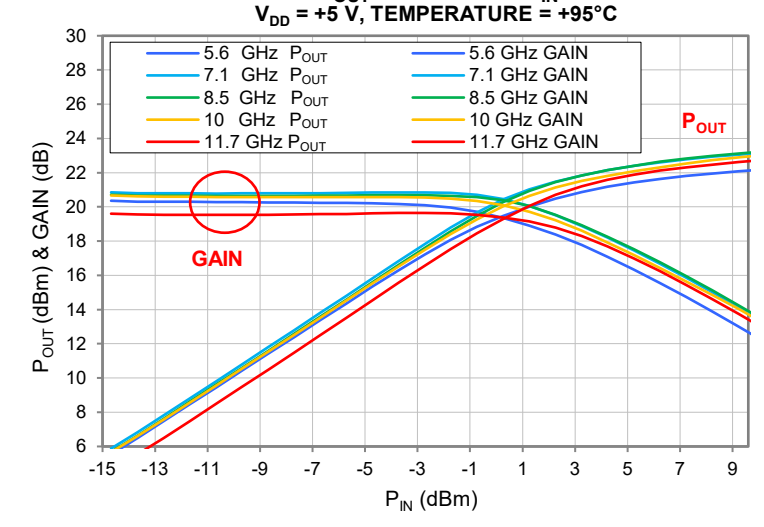
P_{OUT} & GAIN vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +25°C



P_{OUT} & GAIN vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = -40°C

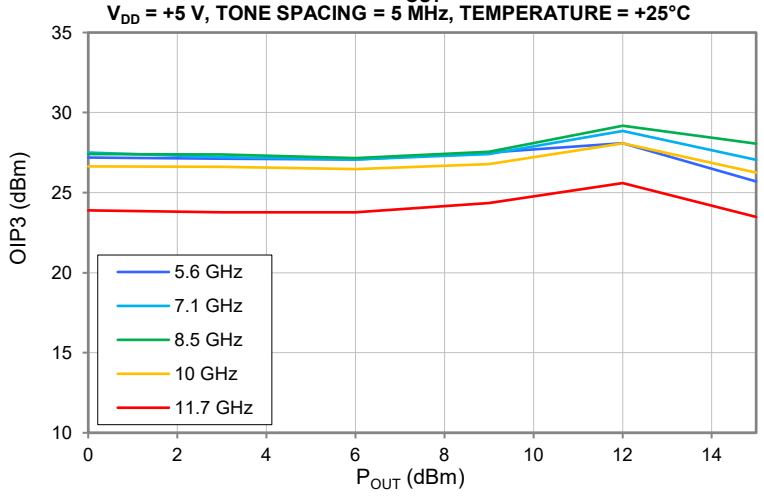


P_{OUT} & GAIN vs. P_{IN}
V_{DD} = +5 V, TEMPERATURE = +95°C

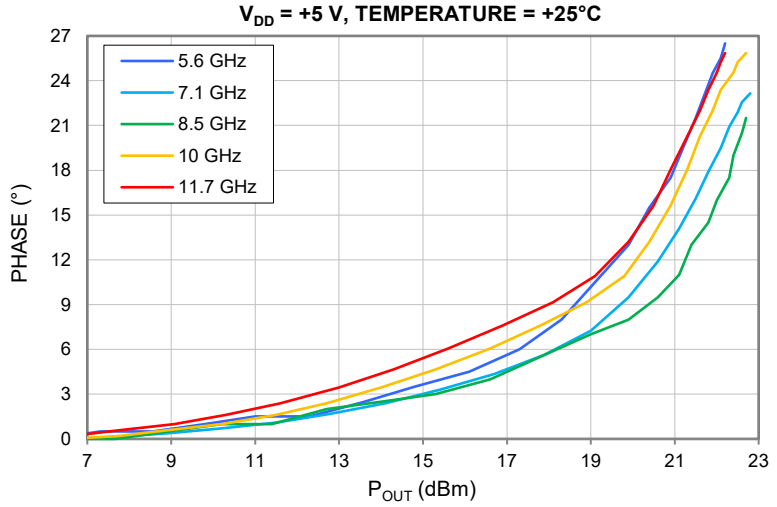


Typical Performance Curves

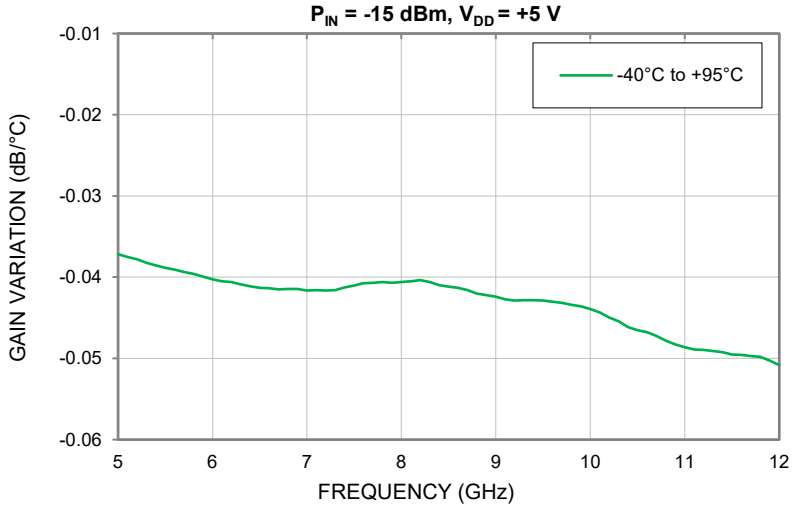
OIP3 vs. P_{OUT}/TONE
V_{DD} = +5 V, TONE SPACING = 5 MHz, TEMPERATURE = +25°C



AM - PM
V_{DD} = +5 V, TEMPERATURE = +25°C



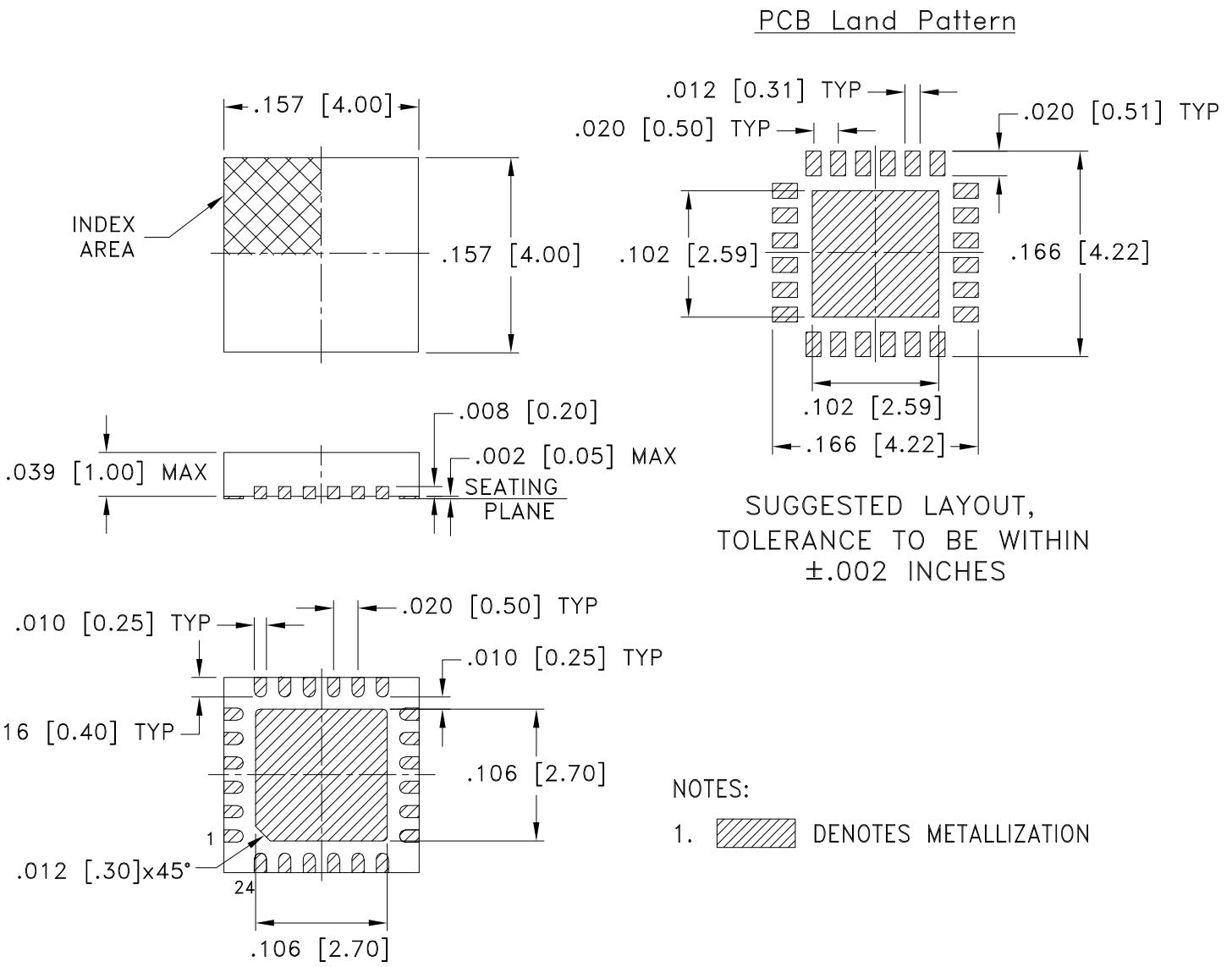
GAIN VARIATION vs. TEMPERATURE
P_{IN} = -15 dBm, V_{DD} = +5 V



Case Style DG

Outline Dimensions

DG1847



Weight: .04 grams

Dimensions are in inches [mm]. Tolerances: 2 Pl.±.01; 3 Pl.±.005 Inches

Notes:

1. Case material: Plastic.
2. Termination finish:

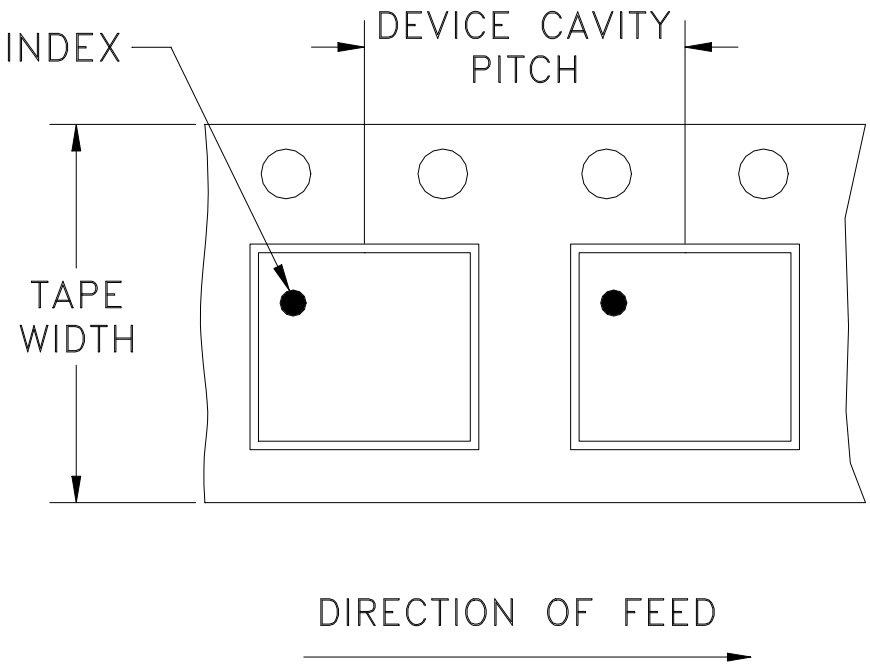
For RoHS Case Styles: Tin-Silver alloy plate over Nickel barrier or Matte-Tin or NiPdAu All models, (+) suffix. See model Data sheet.

For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging TR-F68

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
12	8	7	Small quantity standard	20
				50
				100
				200
				500
		7	Standard	1000
		13	Standard	2000
				3000
				4000

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

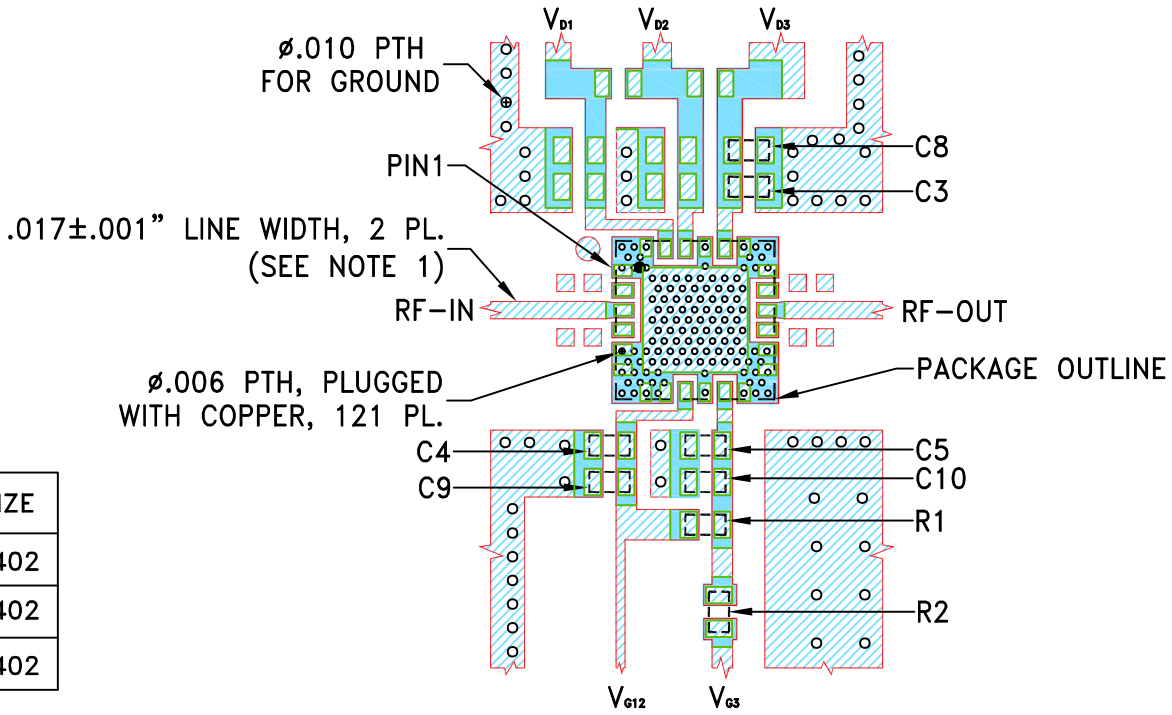
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THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	ECO-023026	NEW RELEASE	09/26/24	ITG	IL

SUGGESTED MOUNTING CONFIGURATION FOR DG1847 CASE STYLE



COMPONENT	SIZE
C3-C5	0402
C8-C10	0402
R1, R2	0402

NOTES:

1. TRACE WIDTH & GAP PARAMETERS ARE SHOWN FOR ROGERS RO4003C LoPro FOIL, DIELECTRIC THICKNESS: .0087±.001"; COPPER: 1 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
2. CHIP COMPONENT FOOT PRINTS SHOWN FOR REFERENCE. FOR COMPONENT VALUES REFER TO TB-AVA-6123MPC+.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	ITG	09/26/24
TOLERANCES ON:	CHECKED	GF	09/26/24
2 PL DECIMALS ±	APPROVED	IL	09/26/24
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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ASHEETA1.DWG REV:A DATE:01/12/95

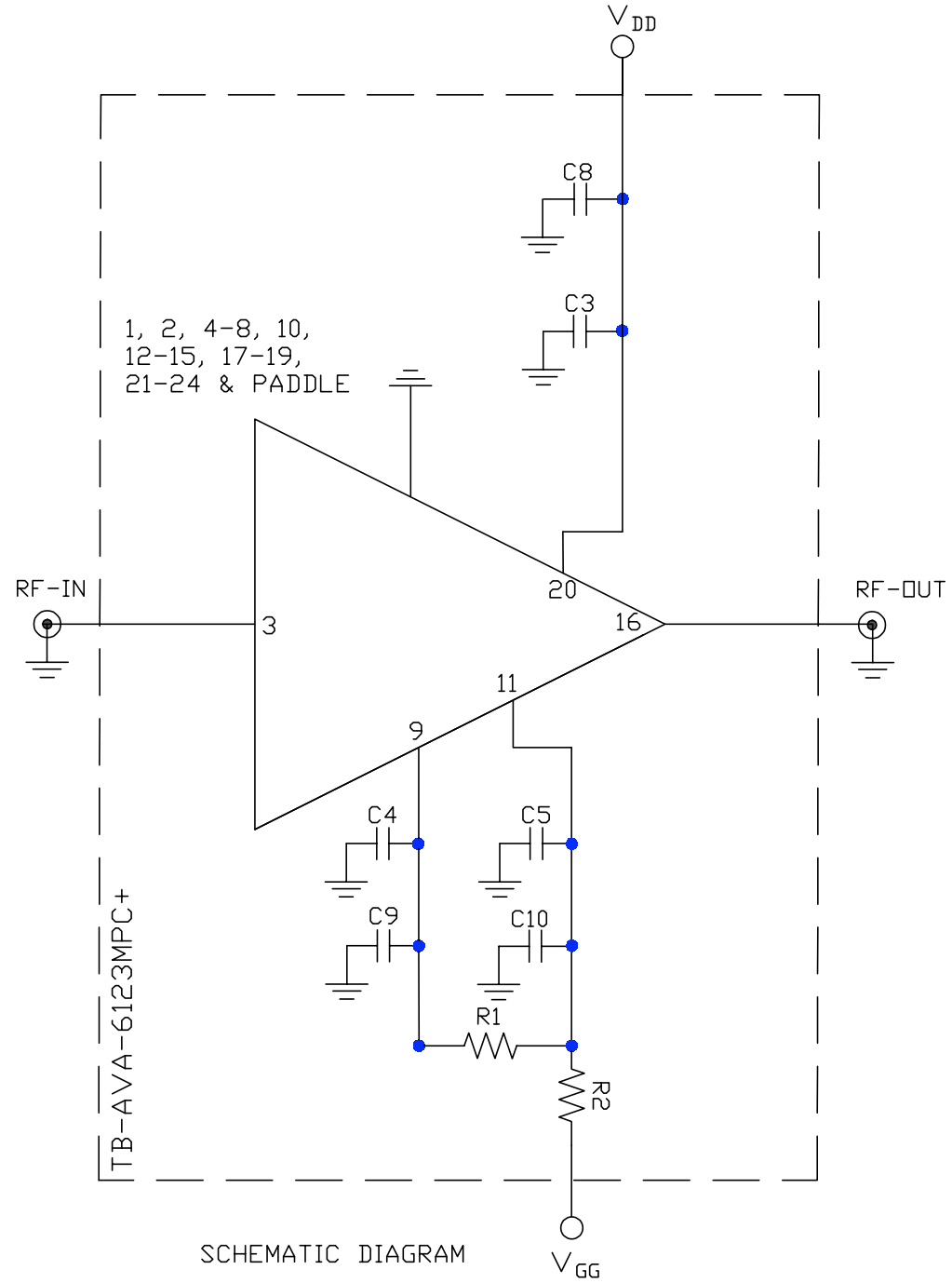
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PL, DG1847, TB-AVA-6123MPC+

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-796	OR

FILE:	SCALE:	SHEET:
98PL796	5:1	1 OF 1

Evaluation Board and Circuit



SCHEMATIC DIAGRAM

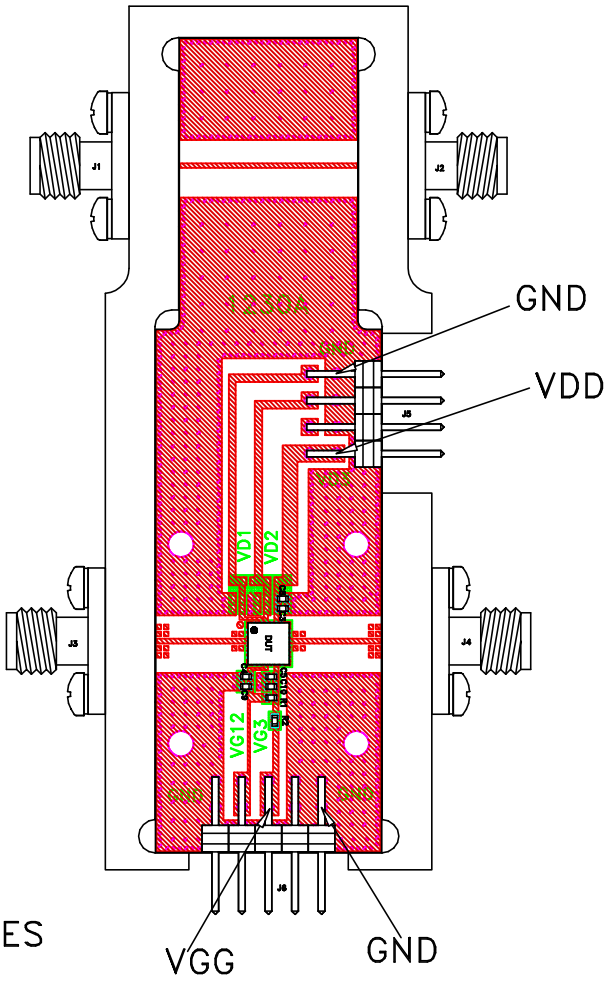
Component	Size	Value	PartNumber	Manufacturer
R1, R2	0402	100Ω	RK73H1ETTP1000F	KOA SPEER ELECTRONICS
C3–C5	0402	0.001µF	GRM1555C1H102JA01D	MURATA
C8–C10	0402	0.1µF	GRM155R71E104KE14D	MURATA

Notes:
1. 2.92mm Female Connectors.
2. PCB Material: Roger RO4003C LOPRO or equivalent, Thickness=0.0087±.001 inch

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TEST BIASING SEQUENCES



POWER ON/OFF SEQUENCES

Caution: Permanent damage to the device will occur if the Power ON and Power OFF sequences are not followed.

POWER ON

1. Set VGG= −2V. Apply VGG
2. Set VDD= +5V. Apply VDD
3. Increase VGG to obtain desired IDD=140mA
4. Apply RF Signal

POWER OFF

1. Turn OFF RF Signal
2. Adjust VGG down to −2V
3. Turn OFF VDD
4. Turn OFF VGG

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ASHEETA2.DWG REV:A DATE: 01/12/94

ALL DIMENSIONS ARE IN INCHES EXCEPT OTHERWISE SPECIFIED

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	TB-AVA-6123MPC-20+	A

FILE:	SCALE:	SHEET:
WTB-AVA-6123MPC+	4:1	5 OF 5

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Environmental Specifications **ENV08T1**

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 or -45° to 85° C or -55° to 105° C or -40° to 105° C or -40° to 95° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C or -65° to 150° Ambient Environment	Individual Model Data Sheet
HTOL	1000 hours at 125°C	MIL-STD-883, Method 1005, Condition B
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Mechanical Shock	1.5Kg, 0.5 ms, 5 shock pulses, Y1 direction only	MIL-STD-883, Method 2002, Condition B, except Y1 direction only
Vibration (Variable Frequency)	50g peak	MIL-STD-883, Method 2007, Condition B
Autoclave	15 psig, 100% RH, 121°C, 96 hours	JESD22-A102, Condition C
HAST	130°C, 85% RH, 96 hours	JESD22-A110
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Solder Reflow Heat	Sn-Pb Eutetic Process: 240°C peak Pb-Free Process: 260°C peak	J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1
Moisture Sensitivity: Level 1	Bake at 125°C for 24 hours Soak at 85°C/85% RH for 168 hours, Reflow 3 cycles at 260°C peak	J-STD-020

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Specification	Test/Inspection Condition	Reference/Spec
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215

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