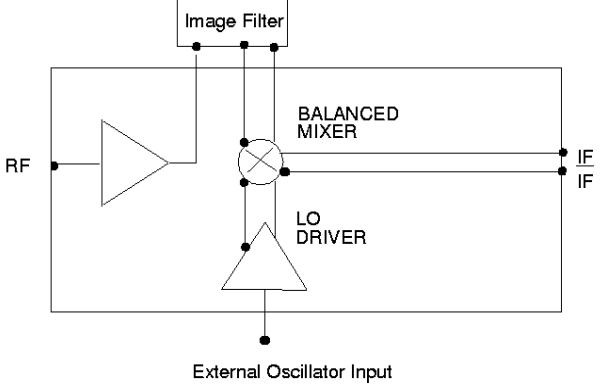


FEATURES	FUNCTIONAL BLOCK DIAGRAM
<ul style="list-style-type: none"> ■ Monolithic Downconverter ■ 3dB Noise Figure ■ 13 dB Conversion Gain ■ Small Surface Mount Package 	

The ANADIGICS wireless receiver IC is a fully monolithic downconverter intended for cellular base station applications in the 800 MHz to 1 GHz frequency range. It is specifically suited for applications where an external oscillator is required. The AWR0901 provides better than 13 dB of gain and noise figures of less than 3.5 dB over any band within the 800 MHz to 1 GHz range. Its high dynamic range balanced mixer makes it ideal for cellular infrastructure applications.

ABSOLUTE MAXIMUM RATINGS

PARAMETER	MIN.	MAX.	UNITS
V_{DD}/V_{IF}	0	+ 7	V
V_{LO}	-5	+ 7	V
V_{RF}	-10	+ 0.5	V
Case Temperature	- 55	+ 85	°C
Storage Temperature	- 55	+ 100	°C
Input Power RF		+ 10	dBm
Input Power LO		+ 10	dBm

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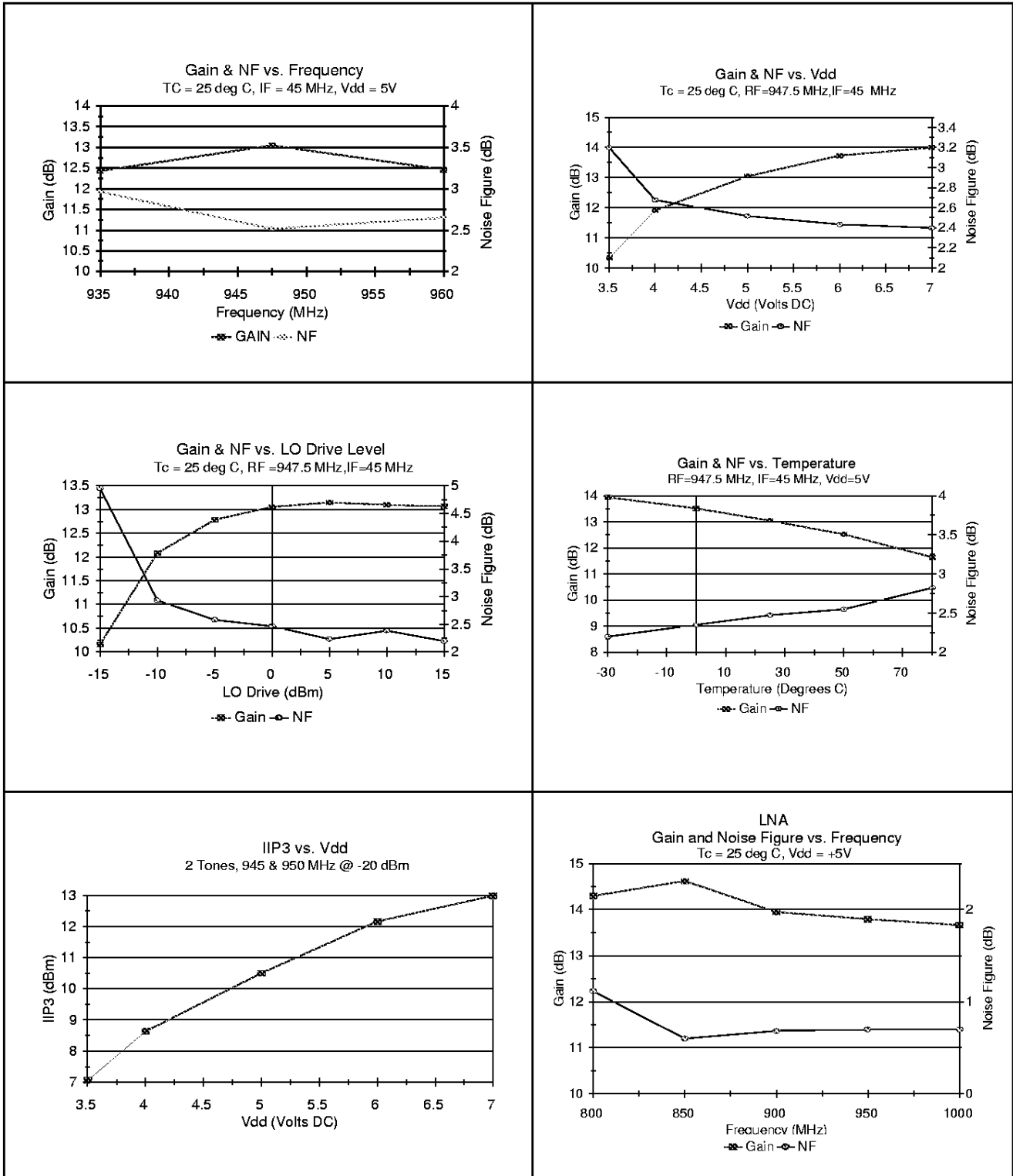
Electrical Specs ($V_{DD} = +5V$; $V_{SS} = -5V$, RF = 947.5 MHz, LO = 992.5 MHz, IF = 45 MHz, $T_c = 25^\circ C$)

PARAMETER	MIN.	TYP.	MAX.	UNITS
Frequency Range RF LO IF	800 700 45		1000 1100 100	MHz
Conversion Gain ¹		13		dB
Noise Figure ¹		3.0		dB
Input 3rd Order Intercept (IIP ₃)		+ 10		dBm
Half IF (2X2 Spur) @ - 30 dBm input level		- 70		dBc
LO Drive Level	- 10	- 5	0	dBm
LO to RF Leakage		- 40		dBm
Input Impedance	See Smith Chart			
Output Impedance	See Smith Chart			
Operating Temperature Range	-30		+70	°C
Positive Supply Voltage	+ 4.5	+ 5.0	+ 5.5	Volts
Power supply current (+ 5V)		180		mA
Negative Supply Voltage		- 5.0		Volts
Negative Supply Current (- 5V)		40		mA

1. As measured in ANADIGICS test fixture with external image filter (loss \approx 2dB). Choise of band depends on the external image filter.

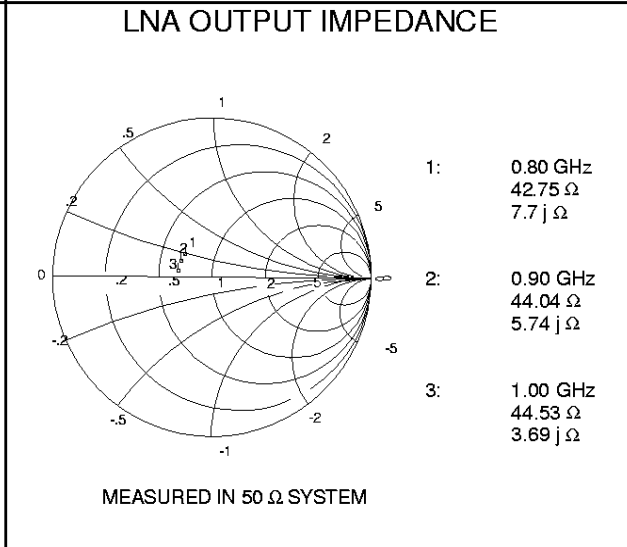
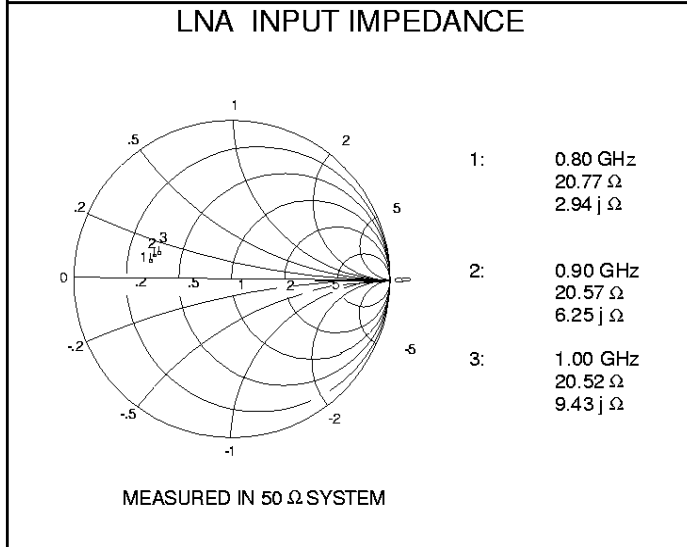
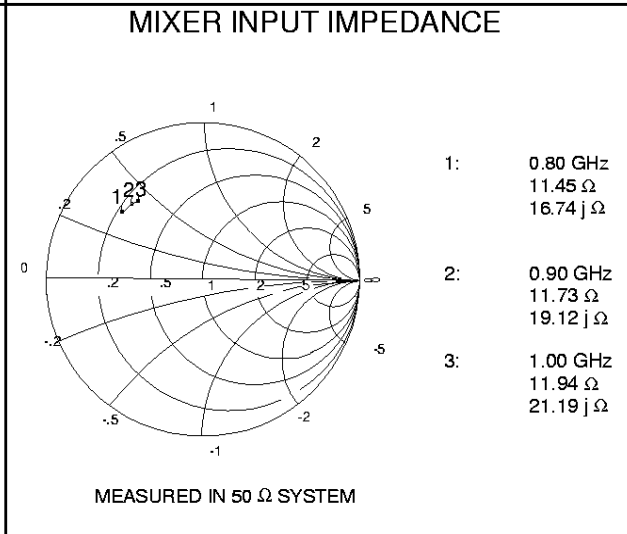
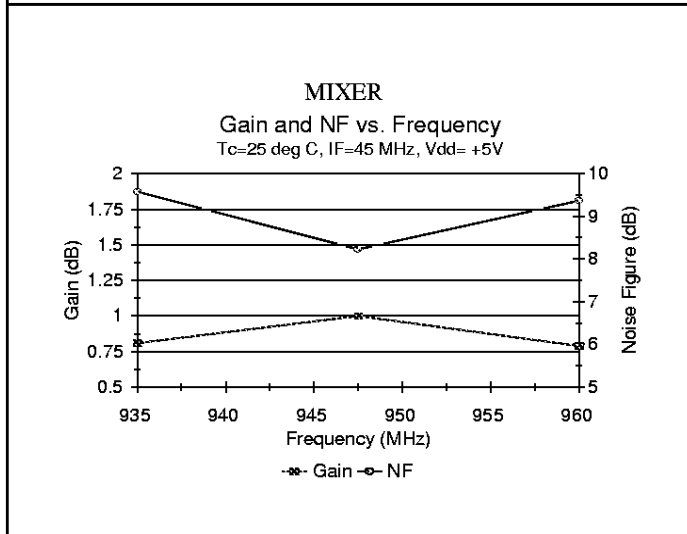
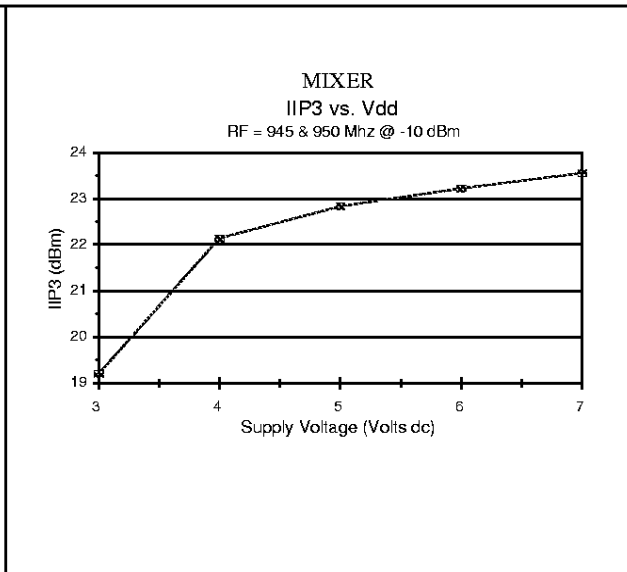
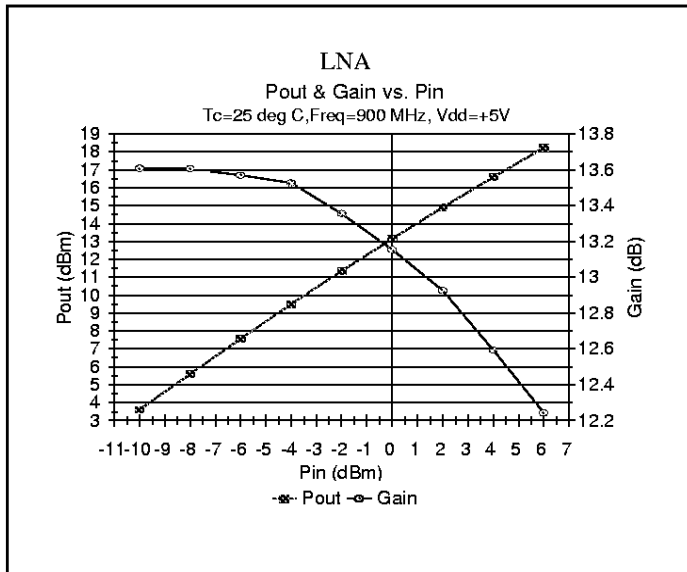
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AWR0901 - TYPICAL PERFORMANCE

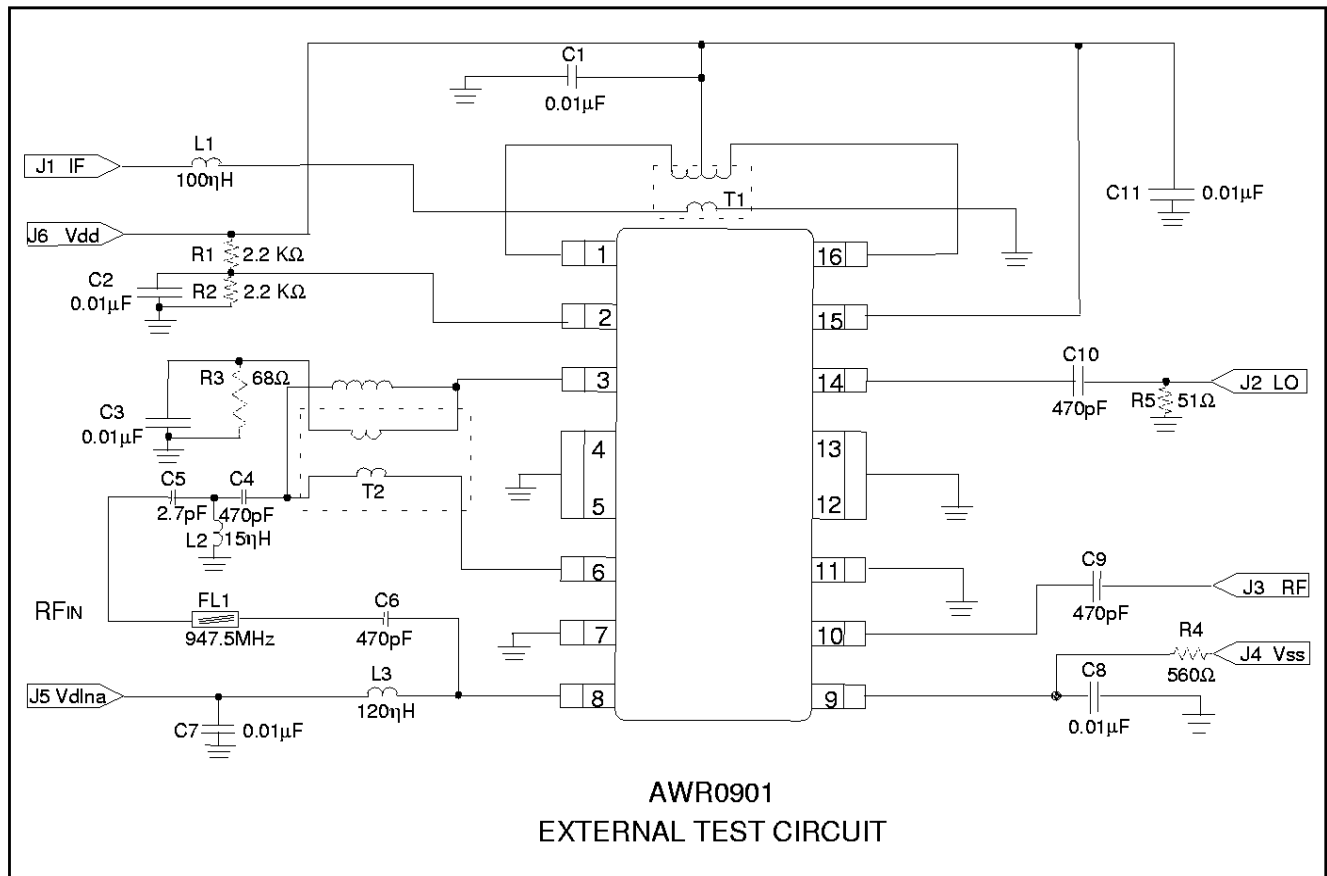
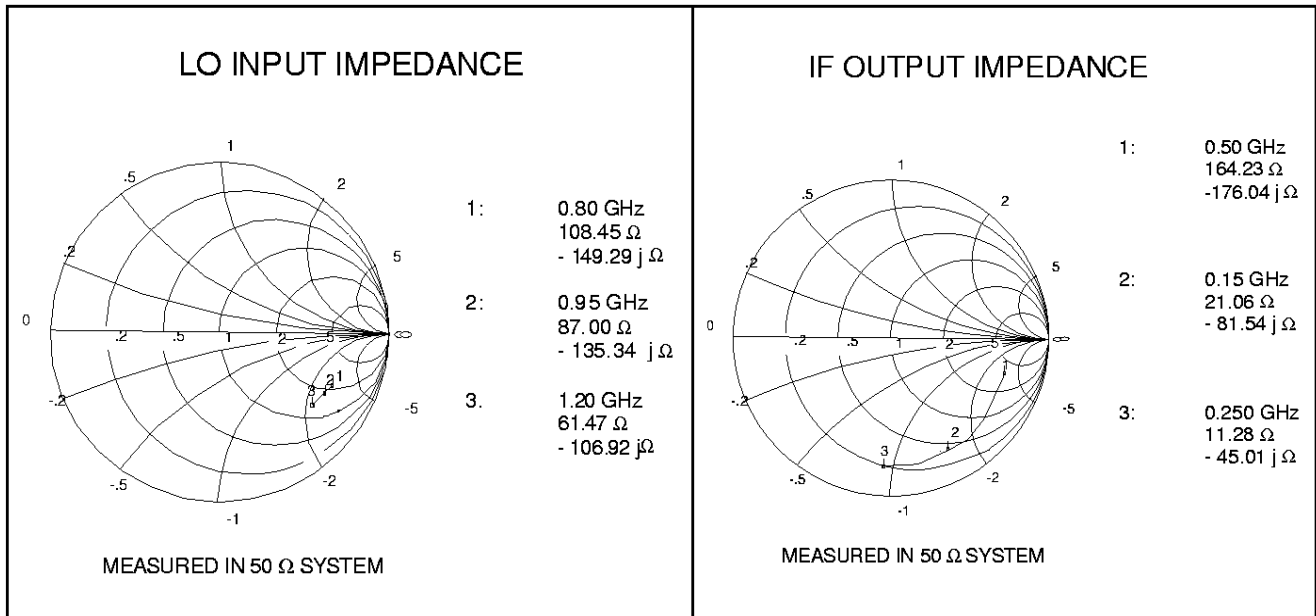


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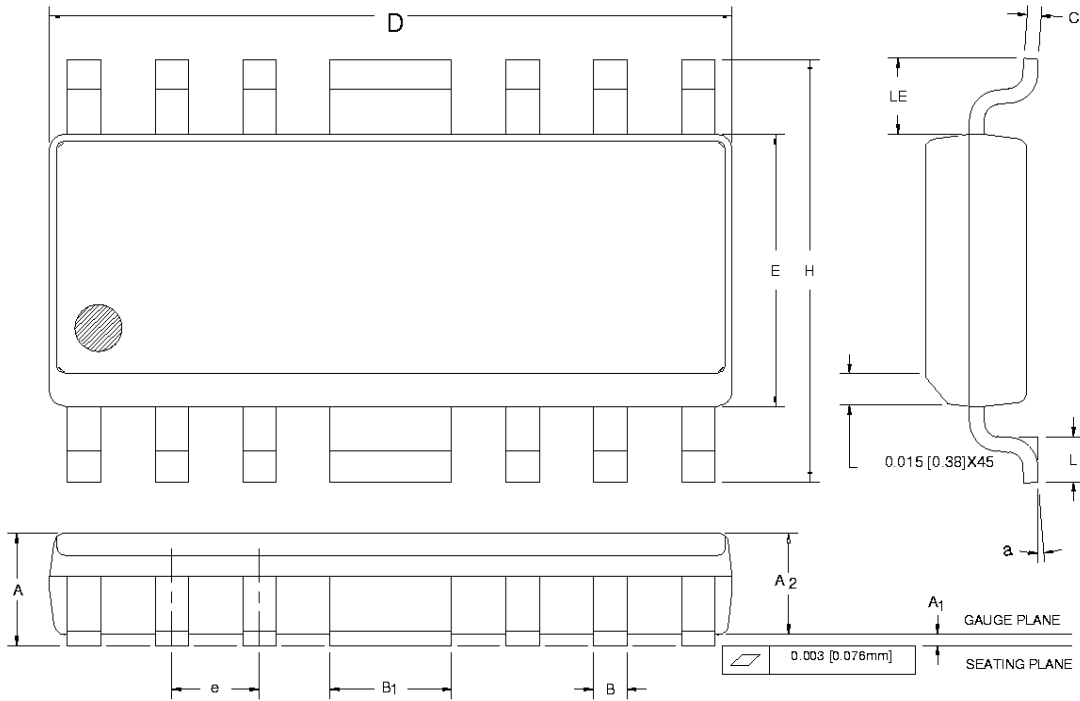
AWR0901 - TYPICAL PERFORMANCE



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S _V M _B Q _L	INCHES		MILLIMETERS		NOTE
	MIN.	MAX.	MIN.	MAX.	
A	0.058	0.068	1.47	1.73	
A ₁	0.004	0.010	0.10	0.25	
A ₂	0.055	0.065	1.40	1.65	
B	0.013	0.020	0.33	0.50	
B ₁	0.062	0.070	1.58	1.78	
C	0.008	0.010	0.20	0.25	4
D	0.380	0.400	9.66	10.16	2
E	0.150	0.160	3.81	4.06	3
e	0.050 BSC		1.27 BSC		
H	0.226	0.244	5.74	6.20	
L	0.016	0.040	0.41	1.02	
LE	0.030	—	0.76	—	
a	0	8	0	8	

NOTES:

1. CONTROLLING DIMENSION: INCHES
2. DIMENSION "D" DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS AND GATE BURRS SHALL NOT EXCEED 0.006 [0.15mm] PER SIDE.
3. DIMENSION "E" DOES NOT INCLUDE INTER-LEAD FLASH OR PROTRUSIONS. INTER-LEAD FLASH AND PROTRUSIONS SHALL NOT EXCEED 0.010 [0.25mm] PER SIDE.
4. LEAD THICKNESS AFTER PLATING TO BE 0.013 [0.33mm] MAXIMUM.

SPECIFICATION: 98000-006
 SUBJECT: PUBLISHED OUTLINE,
 16 LEAD BATWING SOIC PKG.

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Package:

The AWR0901 uses the standard ANADIGICS SOIC-16 batwing with the following pinning:

PIN	SIGNAL	DESCRIPTION
1	IF	In-phase IF output
2	VB	Mixer bias voltage
3	Mix-IN	In-phase mixer input
4	GND	Batwing ground
5	GND	Batwing ground
6	/ Mix-IN	Out-of phase mixer input
7	GND	Ground
8	LNA-OUT	LNA output + 5V
9	V _{SS}	LNA current set with external resistor to V _{SS} supply - 5 V
10	LNA-IN	LNA input
11	GND	Ground
12	GND	Batwing ground
13	GND	Batwing ground
14	LO	LO input
15	V _{DD}	V _{DD} supply
16	/ IF	Out-of-phase IF output

CHART 1

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