TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AGC230

20 TO 250 MHz TO-8 GAIN CONTROL AMPLIFIER

Typical Values	AGC230
Gain	**46 dB**
High AGC Range	**50.0 dB**
HighControl Range	**0 to +5 Volts**
Low Noise Figure	**5.0 dB**

High Performance Thin Film
Standard Size TO-8 Package

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)	**10-300 MHz**	**20-250 MHz**	**20-250 MHz**
Gain (Min.) @ V contr. = 0 Volts	46.0 dB	42.0 dB	40.0 dB
Gain (Max.) @ V contr.=+5 Volts		-5.0 dB	-1.0 dB
—			
Gain Flatness (Max.) @ V contr. = 0 Volts			
20-100 MHz	±0.5 dB	±1.0 dB	±1.5 dB
100-250 MHz	±1.5 dB	±2.0 dB	±2.5 dB
Noise Figure (Max.) @ V contr. = 0 Volts	5.0 dB	6.0 dB	6.5 dB
SWR (Max.) Input/Output	< 1.6:1	2.0:1	2.0:1
Power Output (Min.) @1dB comp. @V contr. = 0 Volts	+8.5 dBm	+7.5 dBm	+7.0 dBm
Response Time Full AGC	10 µsec	—	—
20 dB AGC	5 µsec		

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
^ AGC Voltage: 0 to +5 Volts

INTERMODULATION PERFORMANCE

Typical @ 25 °C Vcontrol = 0 Volts	AGC230
Second Order Harmonic Intercept Point	+39 dBm
Second Order Two Tone Intercept Point	+33 dBm
Third Order Two Tone Intercept Point	+21 dBm

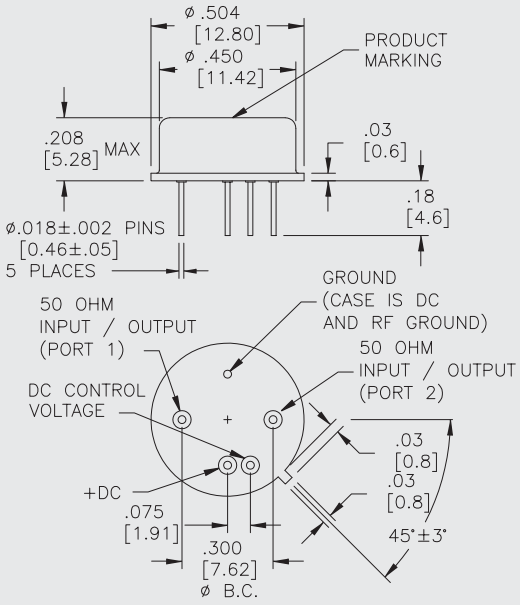
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+18 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Maximum Control Voltage	+7.0 Volts
Burn-in Temperature	+125 °C
Thermal Resistance[1] (θjc)	+12 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+12.0 °C

[1] Thermal resistance is based on total power dissipation.

AGC230

TO-8 Package for Gain Control Amplifiers

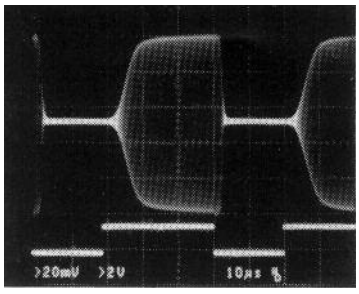


Connectorized attenuator case available.

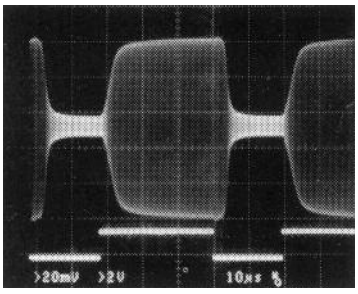
DIMENSIONS ARE IN INCHES [MILLIMETERS]

SWITCHING SPEED

Typical Switching Speed at 25 °C



Full AGC, 100 MHz



20 dB AGC, 100 MHz

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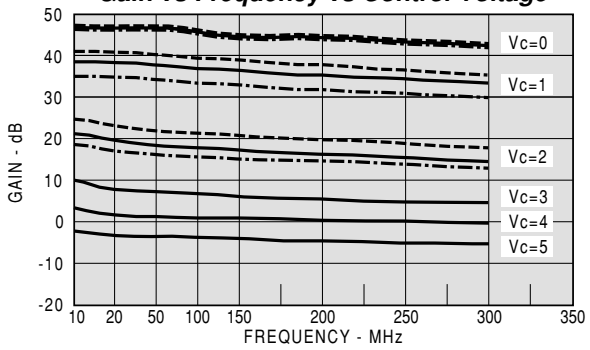
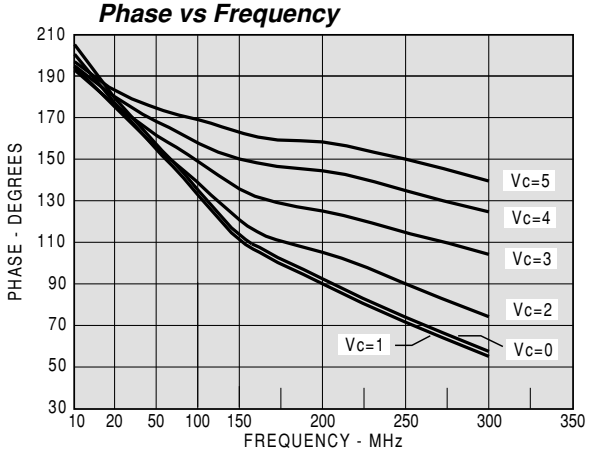
TYPICAL PERFORMANCE

KEY: +25 °C ——
+85 °C —·—
-55 °C – – –

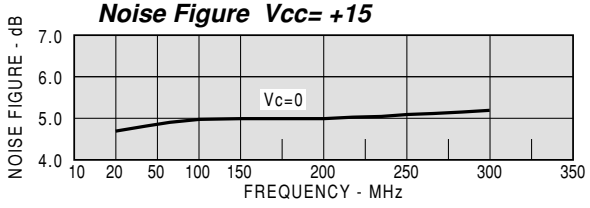
Gain vs Frequency vs Control Voltage



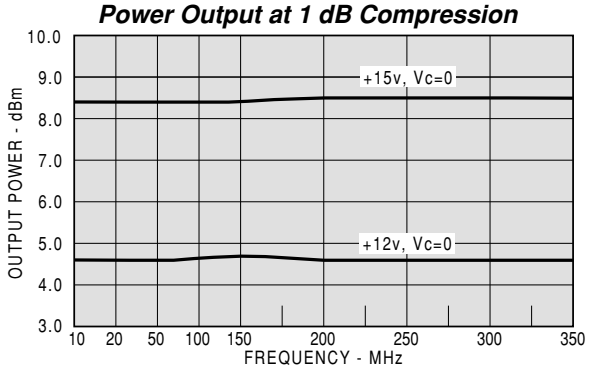
Phase vs Frequency



Noise Figure Vcc= +15



Power Output at 1 dB Compression



TYPICAL AUTOMATIC TEST DATA

MODEL: AGC230 Vcc = +15V Icc = 61.00 mA Vcontrol = 0.0V

FREQ MHZ	VSWR IN	VSWR OUT	GAIN DB	S21 MAG	S21 ANG
10	1.3	1.1	47.7	243.8	-154.6
20	1.2	1.0	47.6	240.9	-177.9
50	1.1	1.1	47.6	239.7	159.6
100	1.1	1.1	46.9	220.8	134.6
150	1.1	1.1	46.1	200.7	107.3
200	1.1	1.1	45.3	183.3	88.9
250	1.1	1.1	44.1	159.7	69.6
300	1.1	1.1	43.4	148.3	52.8

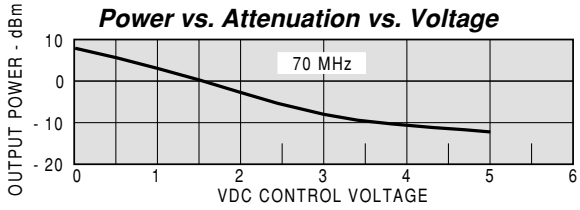
MODEL: AGC230 Vcc = +15V Icc = 61.01 mA Vcontrol = 2.0 V

FREQ MHZ	VSWR IN	VSWR OUT	GAIN DB	S21 MAG	S21 ANG
10	1.4	1.5	22.8	13.9	-167.9
20	1.3	1.6	21.3	11.6	169.0
50	1.2	1.6	19.8	9.8	153.1
100	1.2	1.6	18.6	8.5	135.9
150	1.3	1.6	17.9	7.9	113.4
200	1.3	1.6	17.3	7.4	98.9
250	1.3	1.6	16.3	6.5	81.6
300	1.2	1.6	15.7	6.1	67.0

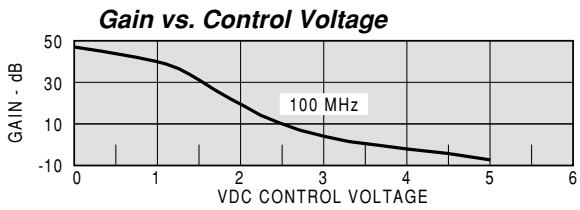
MODEL: AGC230 Vcc = +15V Icc = 61.02 mA Vcontrol = 5.0 V

FREQ MHZ	VSWR IN	VSWR OUT	GAIN DB	S21 MAG	S21 ANG
10	1.8	1.7	-3.8	0.6	-167.1
20	1.7	1.7	-5.1	0.6	168.8
50	1.8	1.7	-7.8	0.4	164.8
100	1.7	1.7	-8.2	0.4	165.9
150	1.8	1.7	-7.8	0.4	146.5
200	1.9	1.7	-7.4	0.4	149.0
250	1.7	1.7	-7.0	0.4	139.8
300	1.8	1.7	-6.6	0.5	135.9

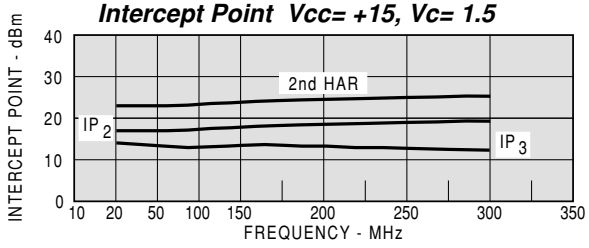
Power vs. Attenuation vs. Voltage



Gain vs. Control Voltage



Intercept Point Vcc= +15, Vc= 1.5



Intercept Point Vcc= +15, Vc= 0