T-74-09-01

8/92

COUGAR COMPONENTS

B-74-09-51

2225-K Martin Avenue, Santa Clara, CA 95050 (408) 492-1400
FAX (408) 492-1500

AGC525 10 to 500 MHz TO-8 Gain Control Amplifier

(Typical Values)	AGC230
Medium Gain	25.5 dB
Medium AGC Range	30.0 dB
Control Range	0 to +5 Volts
Low Noise Figure	5.0 dB

High Performance Thin Film
Standard Size TO-8

Specifications

Parameter	Typical	Guaranteed* 0 to 50 °C	Guaranteed* - 55 to 85 °C
Frequency (Min.)	**10-600 MHz**	**10-500 MHz**	**10-500 MHz**
Gain (Min.) Vc = 0	25.5 dB	24.5 dB	24.0 dB
Gain Flatness (Max.)	± 0.5 dB	± 0.7 dB	± 0.8 dB
AGC Range (Min.)	30 dB	26 dB	–
Noise Figure (Max.)	5.0 dB	6.0 dB	6.5 dB
SWR (Max.)	< 1.6:1	2.0:1	2.0:1
Power Output @1dB comp. (Min.)	+ 11.0 dBm	+ 10.0 dBm	+ 9.5 dBm
Response Time Full AGC	< 10 µsec	–	–
DC Current (Max.) Bias	45 mA	48 mA	51 mA
DC Current (Max.) Vc^	0 to 10 mA	–	–

*Measured in a 50-ohm system at +15 Vdc and 0.0 Control Voltage unless otherwise specified.
^AGC Voltage: 0 to +5 Volts.

Intermodulation Performance

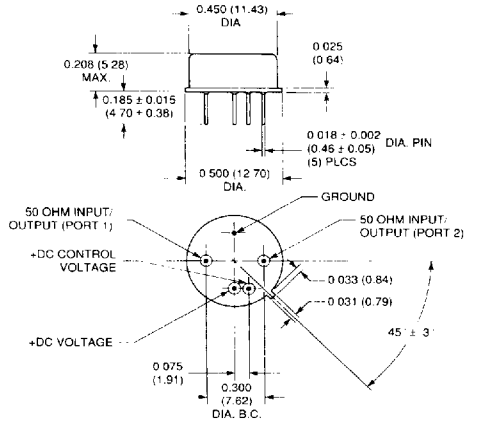
(Typical at 25° C, at Vc = 0, at 200 MHz)	AGC525
Second Order Harmonic Intercept Point	+36 dBm
Second Order Two Tone Intercept Point	+30 dBm
Third Order Two Tone Intercept Point	+20 dBm

Absolute Maximum Ratings

Ambient Operating Temperature	-55 to 115° C
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
Q Series Burn-in Temperature	+125° C

Outline Drawings

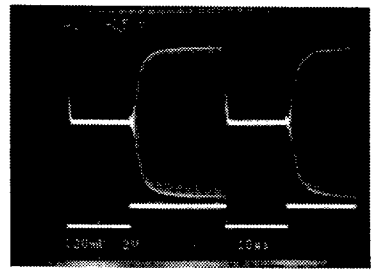
TO-8 Package for Gain Control Amplifier



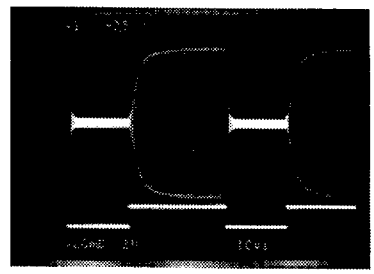
DIMENSIONS ARE IN INCHES (MILLIMETERS)

Connectorized attenuator case available; see GC2001 data sheet.

Typical Switching Speed at 25° C



Full AGC, 100 MHz



Half AGC, 100 MHz

E 9008334 0000213 068

AGC525

Typical Performance

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

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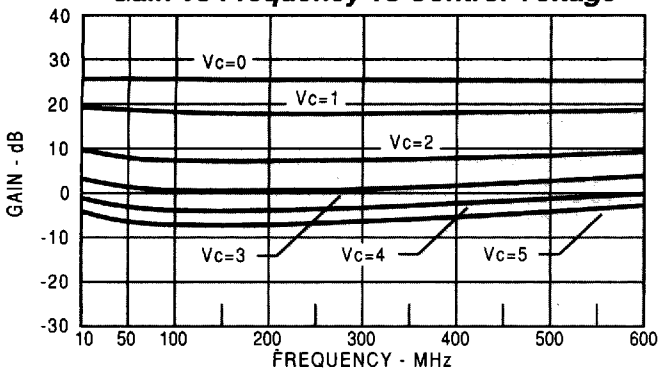
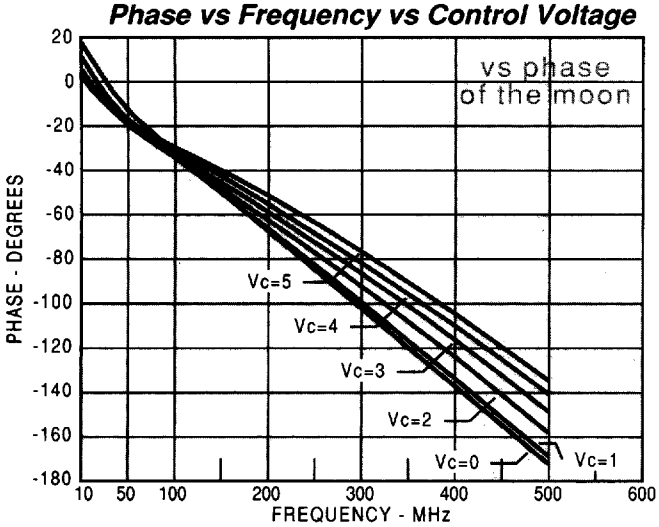
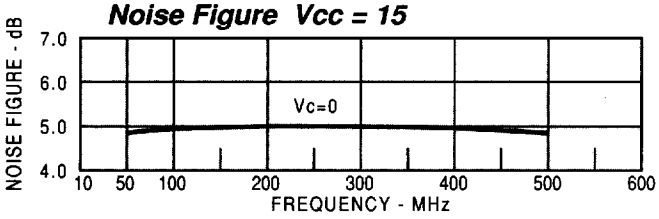
Gain vs Frequency vs Control Voltage



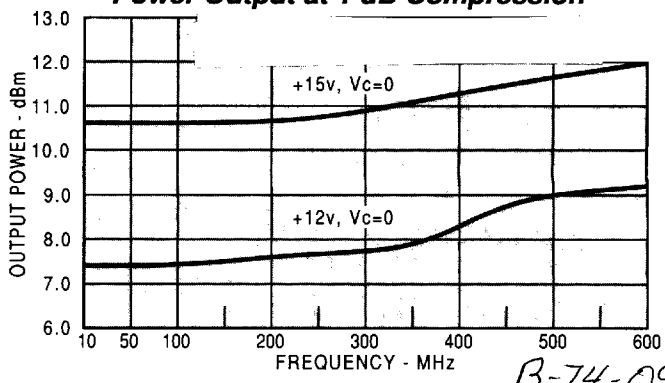
Phase vs Frequency vs Control Voltage



Noise Figure Vcc = 15



Power Output at 1 dB Compression



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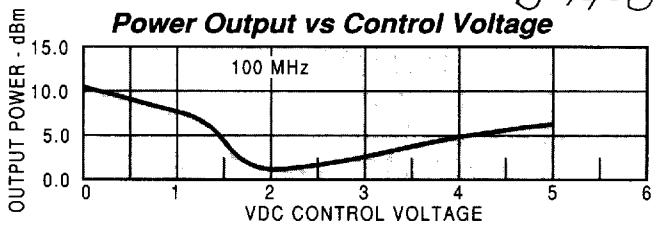
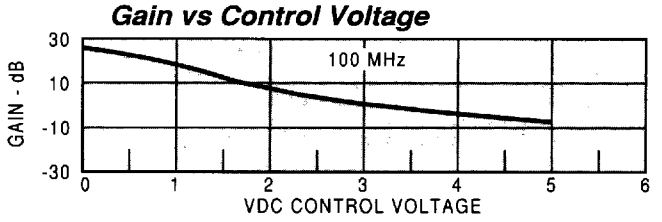
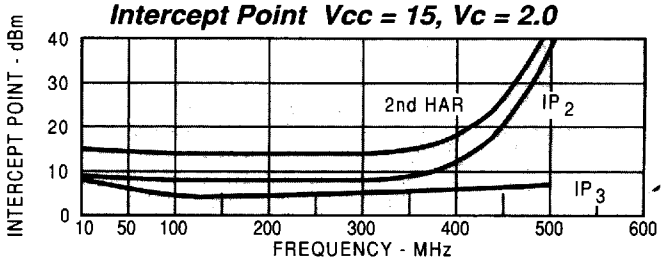
Power Output vs Control Voltage



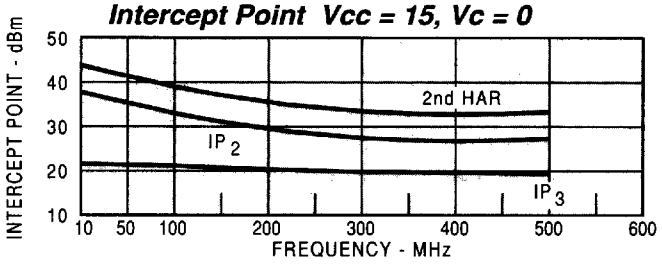
Gain vs Control Voltage



Intercept Point Vcc = 15, Vc = 2.0



Intercept Point Vcc = 15, Vc = 0



Typical Automatic Test Data

MODEL: AGC525 Vcc= +15Vd DATE: 31JUL92
LOT: ENG TEMP= +25C FREQ= 5 - 500 MHz

LOT: ENG S/N: 004 Icc= 44.63 mA Vcontrol= 0.0 Volts

FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	S21 MAG	S21 ANG
5.0	1.6	1.3	24.9	17.6	39.8
10.0	1.4	1.2	25.5	18.8	17.6
50.0	1.3	1.1	25.4	18.7	-13.4
100.0	1.3	1.1	25.4	18.6	-31.7
200.0	1.3	1.1	25.5	18.8	-65.7
300.0	1.4	1.0	25.6	19.0	-100.0
400.0	1.5	1.1	25.8	19.6	-135.6
500.0	1.6	1.2	25.9	19.6	-172.4

Gmax= 25.9 Gmin= 24.9 Gflat= .96 INvswr max= 1.6 OUTvswr max= 1.3

LOT: ENG S/N: 004 Icc= 44.64 mA Vcontrol= 2.0 Volts

FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	S21 MAG	S21 ANG
5.0	1.4	1.5	10.7	3.4	27.9
10.0	1.3	1.6	10.0	3.2	4.8
50.0	1.1	1.6	7.9	2.5	-20.2
100.0	1.1	1.6	7.4	2.4	-34.8
200.0	1.0	1.6	7.3	2.3	-63.6
300.0	1.0	1.5	7.5	2.4	-93.3
400.0	1.0	1.5	8.3	2.6	-125.1
500.0	1.0	1.5	8.9	2.8	-159.8

Gmax= 10.7 Gmin= 7.3 Gflat= 3.44 INvswr max= 1.4 OUTvswr max= 1.6

LOT: ENG S/N: 004 Icc= 44.64 mA Vcontrol= 5.0 Volts

FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	S21 MAG	S21 ANG
5.0	1.6	1.6	-2.9	.7	23.8
10.0	1.4	1.7	-4.2	.6	1.4
50.0	1.4	1.8	-6.5	.5	-18.8
100.0	1.4	1.8	-7.3	.4	-30.5
200.0	1.4	1.7	-7.4	.4	-54.5
300.0	1.4	1.7	-7.0	.4	-78.6
400.0	1.4	1.6	-5.5	.5	-106.7
500.0	1.4	1.6	-4.4	.6	-137.3

Gmax= -2.9 Gmin= -7.4 Gflat= 4.51 INvswr max= 1.6 OUTvswr max= 1.8

COUGAR COMPONENTS

613CC

E [redacted] 9008334 0000214 TT4 [redacted]