

AGC525

10 TO 500 MHz TO-8 GAIN CONTROL AMPLIFIER

Typical Values	AGC525
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 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed		
		0 to 50 °C	-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.)	Input/Output	< 1.6:1	2.0:1	2.0:1
Power Output (Min.)	@ 1dB comp.	+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 @ 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

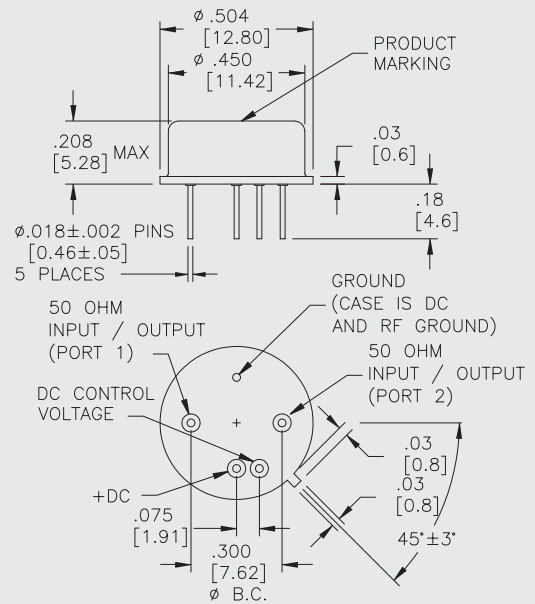
ABSOLUTE MAXIMUM RATINGS

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)	+17 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+12.0 °C

¹ Thermal resistance is based on total power dissipation.

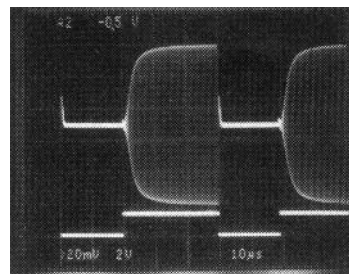
AGC525

TO-8 Package for Gain Control Amplifiers

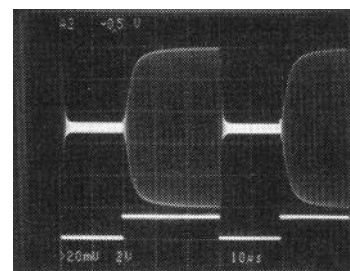


SWITCHING SPEED

Typical Switching Speed at 25 °C



Full AGC, 100 MHz

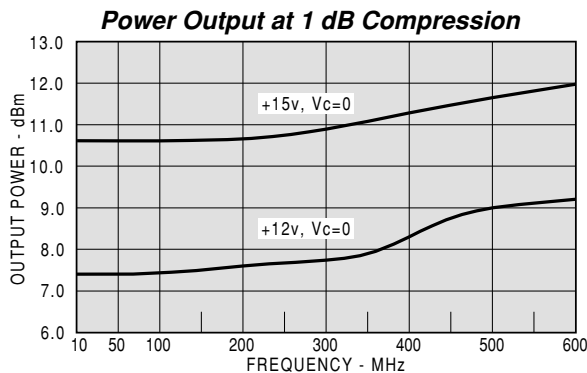
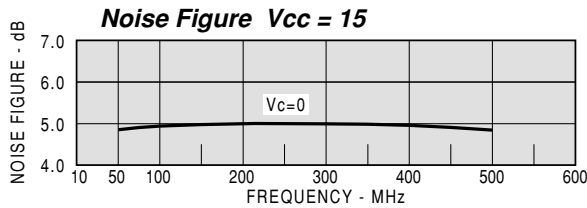
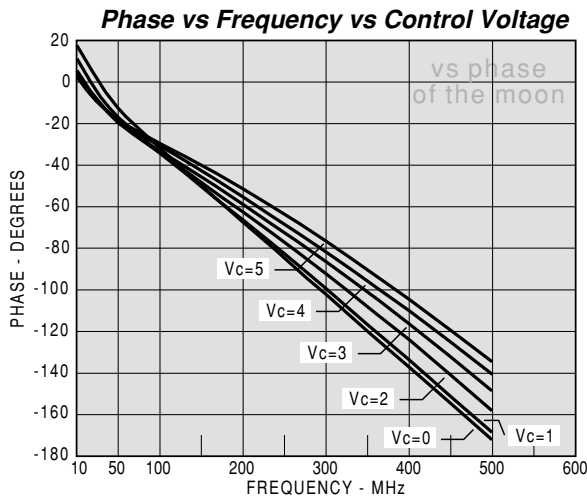
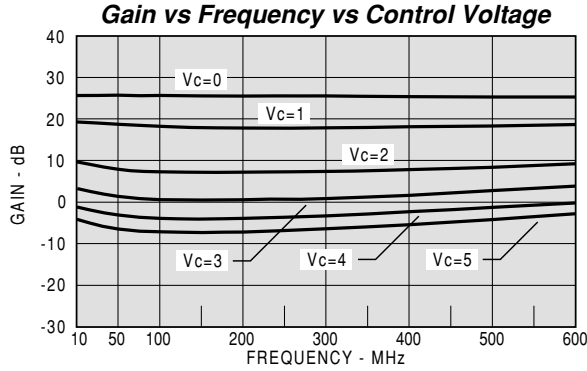


Half AGC, 100 MHz

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA

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



MODEL: AGC525 Vcc = +15V Icc = 44.63 mA Vcontrol = 0.0V

FREQ MHz	VSWR IN	VSWR OUT	GAIN DB	S21 MAG	S21 ANG
5	1.6	1.3	24.9	17.6	39.8
10	1.4	1.2	25.5	18.8	17.6
50	1.3	1.1	25.4	18.7	-13.4
100	1.3	1.1	25.4	18.6	-31.7
200	1.3	1.1	25.5	18.8	-65.7
300	1.4	1.0	25.6	19.0	-100.0
400	1.5	1.1	25.8	19.6	-135.6
500	1.6	1.2	25.9	19.6	-172.4

Gmax = 25.9 Gmin = 24.9 Gflat = 0.96 INvswr max = 1.6 OUTvswr max = 1.3

MODEL: AGC525 Vcc = +15V Icc = 44.64 mA Vcontrol = 2.0V

FREQ MHz	VSWR IN	VSWR OUT	GAIN DB	S21 MAG	S21 ANG
5	1.4	1.5	10.7	3.4	27.9
10	1.3	1.6	10.0	3.2	4.8
50	1.1	1.6	7.9	2.5	-20.2
100	1.1	1.6	7.4	2.4	-34.8
200	1.0	1.6	7.3	2.3	-63.6
300	1.0	1.5	7.5	2.4	-93.3
400	1.0	1.5	8.3	2.6	-125.1
500	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

MODEL: AGC525 Vcc = +15V Icc = 44.64 mA Vcontrol = 5.0V

FREQ MHz	VSWR IN	VSWR OUT	GAIN DB	S21 MAG	S21 ANG
5	1.6	1.6	-2.9	0.7	23.8
10	1.4	1.7	-4.2	0.6	1.4
50	1.4	1.8	-6.5	0.5	-18.8
100	1.4	1.8	-7.3	0.4	-30.5
200	1.4	1.7	-7.4	0.4	-54.5
300	1.4	1.7	-7.0	0.4	-78.6
400	1.4	1.6	-5.5	0.5	-106.7
500	1.4	1.6	-4.4	0.6	-137.3

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

