AGR21010E
10 W, 2000 MHz, N-Channel E-Mode, Lateral MOSFET

Introduction

The AGR21010E is a broadband general-purpose, high-voltage, gold-metalized, laterally diffused metal oxide semiconductor (LDMOS) RF power transistor suitable for cellular, personal communications system (PCS), digital communication system (DCS), and universal mobile telecommunication system (UMTS) base station power amplifier applications with frequencies up to 2600 MHz. The AGR21010E is also suitable for GSM/EDGE, time division multiple access (TDMA), code division multiple access (CDMA), wideband code division multiple access (WCDMA), single and multicarrier applications.

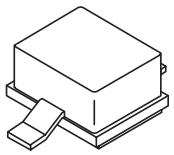


Figure 1. AGR21010EU Package

Features

- Continuous wave (CW) performance characterized in frequency 921 MHz to 960 MHz band @ 26 V:
  — Output power: 10 W minimum @ P_{1dB}.
  — Power gain: 21 dB.
  — Efficiency: 61% @ P_{1dB}.
  — Edge ACP @ 2 W.
  — Return loss: –12 dB.
- CW performance characterized in frequency 1930 MHz to 1990 MHz band @ 28 V:
  — Output power: 10 W minimum @ P_{1dB}.
  — Power gain: 16 dB.
  — Efficiency: 58% @ P_{1dB}.
  — IM3: –32 dBc, 10 W PEP.
  — Return loss: –10 dB.
- CW performance characterized in frequency 2110 MHz to 2170 MHz band @ 28 V:
  — Output power: 10 W minimum @ P_{1dB}.
  — Power gain: 15 dB.
  — Efficiency: 57% @ P_{1dB}.
  — IM3: –31 dBc, 10 W PEP.
  — Return loss: –10 dB.
- High-reliability gold-metalization process.
- Low hot carrier injection (HCI) induced bias drift over 20 years.
- High gain, efficiency, and linearity.
- Integrated ESD protection.
- Device can withstand a 10:1 voltage standing wave ratio (VSWR) with 10 W CW output power.
- Large signal impedance parameters available.

Table 1. Thermal Characteristics

Parameter	Sym	Value	Unit
Thermal Resistance, Junction to Case: AGR21010EU	$R_{\theta JC}$	4.5	°C/W

Table 2. Absolute Maximum Ratings*

Parameter	Sym	Value	Unit
Drain-source Voltage	V_{DSS}	65	Vdc
Gate-source Voltage	V_{GS}	–0.5, 15	Vdc
Total Dissipation at T_C = 25 °C AGR21010EU	P_D	38.9	W
Derate Above 25 °C AGR21010EU	—	0.22	W/°C
Operating Junction Temperature	T_J	200	°C
Storage Temperature Range	T_{STG}	–65, 150	°C

* Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Table 3. ESD Rating*

Device	Minimum Threshold		Class	
	HBM	CDM	HBM	CDM
AGR21010E	—	—	1	TBD

* Although electrostatic discharge (ESD) protection circuitry has been designed into this device, proper precautions must be taken to avoid exposure to ESD and electrical overstress (EOS) during all handling, assembly, and test operations. Agere employs both a human-body model (HBM) and a charged-device model (CDM) qualification requirement in order to determine ESD-susceptibility limits and protection design evaluation. ESD voltage thresholds are dependent on the circuit parameters used in each of the models, as defined by JEDEC's JESD22-A114 (HBM) and JESD22-C101 (CDM) standards.

Caution: MOS devices are susceptible to damage from electrostatic charge. Reasonable precautions in handling and packaging MOS devices should be observed.

Electrical Characteristics

Recommended operating conditions apply unless otherwise specified: T_C = 30 °C.

Table 4. dc Characteristics, 921 MHz—960 MHz

Parameter	Symbol	Min	Typ	Max	Unit
Off Characteristics					
Drain-source Breakdown Voltage (V_{GS} = 0, I_D = 25 µA)	$V_{(BR)DSS}$	65	—	—	Vdc
Gate-source Leakage Current (V_{GS} = 5 V, V_{DS} = 0 V)	I_{GSS}	—	—	0.3	µAdc
Zero Gate Voltage Drain Leakage Current (V_{DS} = 26 V, V_{GS} = 0 V)	I_{DSS}	—	—	0.9	µAdc
On Characteristics					
Forward Transconductance (V_{DS} = 10 V, I_D = 1 A)	G_{FS}	—	0.65	—	S
Gate Threshold Voltage (V_{DS} = 10 V, I_D = 43 µA)	$V_{GS(TH)}$	—	3.3	4.8	Vdc
Gate Quiescent Voltage (V_{DS} = 26 V, I_D = 100 mA)	$V_{GS(Q)}$	—	3.7	—	Vdc
Drain-source On-voltage (V_{GS} = 10 V, I_D = 0.5 A)	$V_{DS(ON)}$	—	0.56	—	Vdc

Table 5. RF Characteristics, 921 MHz—960 MHz

Parameter	Symbol	Min	Typ	Max	Unit
Dynamic Characteristics					
Reverse Transfer Capacitance (V_{DS} = 26 V, V_{GS} = 0, f = 1.0 MHz)	C_{RSS}	—	0.25	—	pF
Output Capacitance (V_{DS} = 26 Vdc, V_{GS} = 0, f = 1.0 MHz)	C_{OSS}	—	5.15	—	pF
Input Capacitance (V_{DS} = 26 Vdc, V_{GS} = 0, f = 1.0 MHz)	C_{ISS}	—	18.2	—	pF
Functional Tests (in Agere Systems Supplied Test Fixture)[1]					
Power Gain (V_{DS} = 26 V, P_{OUT} = 2 W, I_{DQ} = 100 mA)	G_{PS}	—	21	—	dB
Drain Efficiency (V_{DS} = 26 V, P_{OUT} = P_{1dB}, I_{DQ} = 100 mA)	η	—	61	—	%
EDGE Linearity Characterization (P_{OUT} = 2 W, f = 940.5 MHz, V_{DS} = 26 V, I_{DQ} = 100 mA):					
Modulation spectrum @ ±400 kHz (Alt1)		—	–58	—	dBc
Modulation spectrum @ ±600 kHz (Alt2)		—	–71	—	dBc
Output Power (V_{DS} = 26 V, 1 dB gain compression, I_{DQ} = 100 mA)	P_{1dB}	10	11	—	W
Input Return Loss	IRL	–12	—	—	dB
Ruggedness (V_{DS} = 26 V, P_{OUT} = 10 W, I_{DQ} = 100 mA, VSWR = 10:1, all angles)	ψ	No degradation in output power.			

1. Across band, 921 MHz—960 MHz.

Electrical Characteristics (continued)

Recommended operating conditions apply unless otherwise specified: T_C = 30 °C.

Table 6. dc Characteristics, 1930 MHz—1990 MHz

Parameter	Symbol	Min	Typ	Max	Unit
Off Characteristics					
Drain-source Breakdown Voltage (V_{GS} = 0, I_D = 25 µA)	$V_{(BR)DSS}$	65	—	—	Vdc
Gate-source Leakage Current (V_{GS} = 5 V, V_{DS} = 0 V)	I_{GSS}	—	—	0.3	µAdc
Zero Gate Voltage Drain Leakage Current (V_{DS} = 26 V, V_{GS} = 0 V)	I_{DSS}	—	—	0.9	µAdc
On Characteristics					
Forward Transconductance (V_{DS} = 10 V, I_D = 1 A)	G_{FS}	—	0.65	—	S
Gate Threshold Voltage (V_{DS} = 10 V, I_D = 43 µA)	$V_{GS(TH)}$	—	3.3	4.8	Vdc
Gate Quiescent Voltage (V_{DS} = 26 V, I_D = 100 mA)	$V_{GS(Q)}$	—	3.7	—	Vdc
Drain-source On-voltage (V_{GS} = 10 V, I_D = 0.5 A)	$V_{DS(ON)}$	—	0.56	—	Vdc
Dynamic Characteristics					
Reverse Transfer Capacitance (V_{DS} = 28 V, V_{GS} = 0, f = 1.0 MHz)	C_{RSS}	—	0.3	—	pF
Output Capacitance (V_{DS} = 28 Vdc, V_{GS} = 0, f = 1.0 MHz)	C_{OSS}	—	5.0	—	pF
Input Capacitance (V_{DS} = 28 Vdc, V_{GS} = 0, f = 1.0 MHz)	C_{ISS}	—	18.2	—	pF

Table 7. RF Characteristics, 1930 MHz—1990 MHz

Parameter	Symbol	Min	Typ	Max	Unit
Functional Tests (in Agere Systems Supplied Test Fixture)[1]					
Power Gain (V_{DS} = 28 V, P_{OUT} = 5 W, I_{DQ} = 100 mA)	G_{PS}	—	16	—	dB
Drain Efficiency (V_{DS} = 28 V, P_{OUT} = P_{1dB}, I_{DQ} = 100 mA)	η	—	58	—	%
Output Power (V_{DS} = 28 V, 1 dB gain compression, I_{DQ} = 100 mA)	P_{1dB}	10	11	—	W
Third-order Intermodulation Distortion (100 kHz spacing, V_{DS} = 28 V, P_{OUT} = 10 WPEP, I_{DQ} = 100 mA)	IM3	—	–32	—	dBc
Input Return Loss	IRL	–10	—	—	dB
Ruggedness (V_{DS} = 28 V, P_{OUT} = 10 W, I_{DQ} = 100 mA, VSWR = 10:1, all angles)	ψ	No degradation in output power.			

1. Across band, 1930 MHz—1990 MHz.

Electrical Characteristics (continued)

Recommended operating conditions apply unless otherwise specified: T_C = 30 °C.

Table 8. dc Characteristics, 2110 MHz—2170 MHz

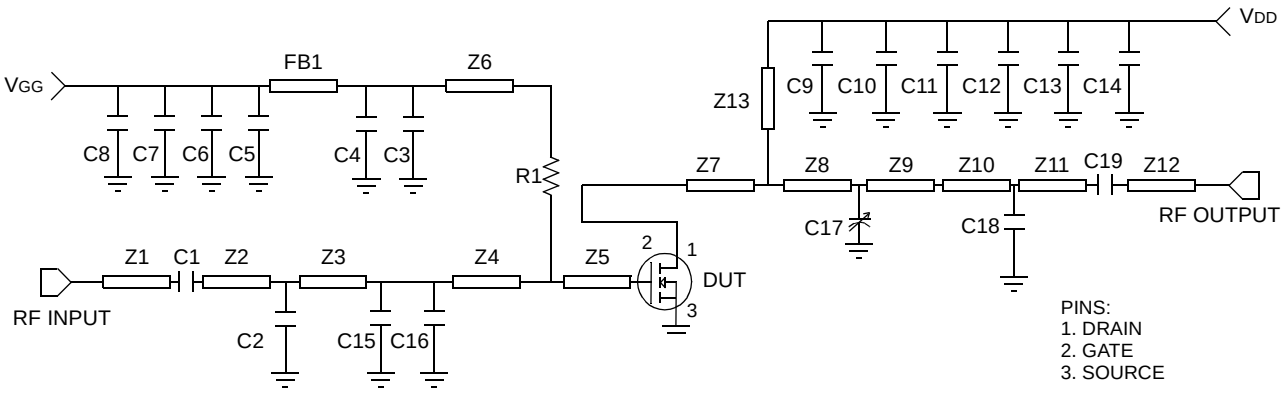
Parameter	Symbol	Min	Typ	Max	Unit
Off Characteristics					
Drain-source Breakdown Voltage (V_{GS} = 0, I_D = 25 µA)	$V_{(BR)DSS}$	65	—	—	Vdc
Gate-source Leakage Current (V_{GS} = 5 V, V_{DS} = 0 V)	I_{GSS}	—	—	0.3	µAdc
Zero Gate Voltage Drain Leakage Current (V_{DS} = 26 V, V_{GS} = 0 V)	I_{DSS}	—	—	0.9	µAdc
On Characteristics					
Forward Transconductance (V_{DS} = 10 V, I_D = 1 A)	G_{FS}	—	0.65	—	S
Gate Threshold Voltage (V_{DS} = 10 V, I_D = 43 µA)	$V_{GS(TH)}$	—	3.3	4.8	Vdc
Gate Quiescent Voltage (V_{DS} = 26 V, I_D = 100 mA)	$V_{GS(Q)}$	—	3.7	—	Vdc
Drain-source On-voltage (V_{GS} = 10 V, I_D = 0.5 A)	$V_{DS(ON)}$	—	0.56	—	Vdc
Dynamic Characteristics					
Reverse Transfer Capacitance (V_{DS} = 28 V, V_{GS} = 0, f = 1.0 MHz)	C_{RSS}	—	0.3	—	pF
Output Capacitance (V_{DS} = 28 Vdc, V_{GS} = 0, f = 1.0 MHz)	C_{OSS}	—	5.0	—	pF
Input Capacitance (V_{DS} = 28 Vdc, V_{GS} = 0, f = 1.0 MHz)	C_{ISS}	—	18.2	—	pF

Table 9. RF Characteristics, 2110 MHz—2170 MHz

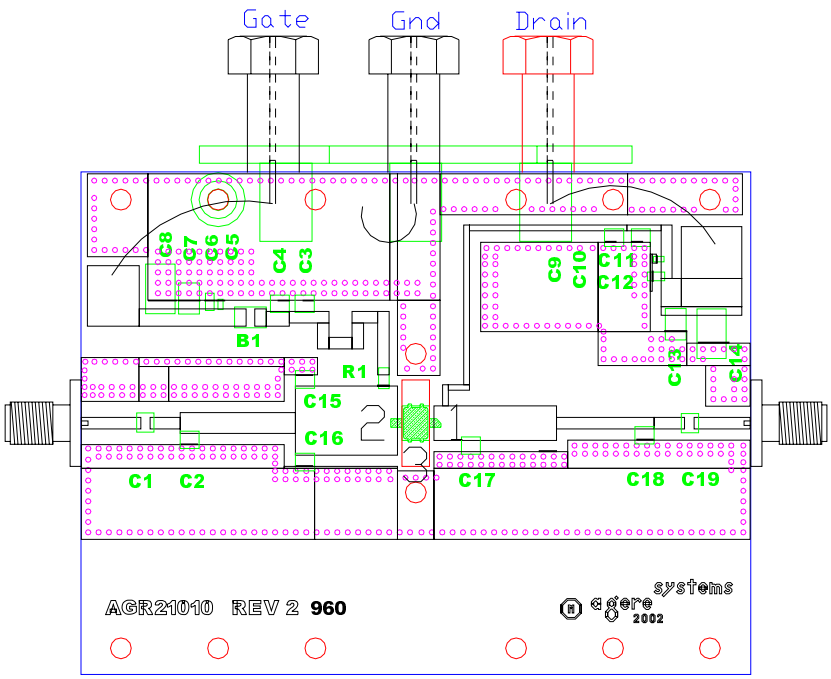
Parameter	Symbol	Min	Typ	Max	Unit
Functional Tests (in Agere Systems Supplied Test Fixture)[1]					
Power Gain (V_{DS} = 28 V, P_{OUT} = 5 W, I_{DQ} = 100 mA)	G_{PS}	—	15	—	dB
Drain Efficiency (V_{DS} = 28 V, P_{OUT} = P_{1dB}, I_{DQ} = 100 mA)	η	—	57	—	%
Output Power (V_{DS} = 28 V, 1 dB gain compression, I_{DQ} = 100 mA)	P_{1dB}	10	11	—	W
Third-order Intermodulation Distortion (100 kHz spacing, V_{DS} = 28 V, P_{OUT} = 10 WPEP, I_{DQ} = 100 mA)	IM3	—	–31	—	dBc
Input Return Loss	IRL	–10	—	—	dB
Ruggedness (V_{DS} = 28 V, P_{OUT} = 10 W, I_{DQ} = 100 mA, VSWR = 10:1, all angles)	ψ	No degradation in output power.			

1. Across band, 2110 MHz—2170 MHz.

Test Circuit Illustrations for AGR21010E, 921 MHz—960 MHz



A. Schematic



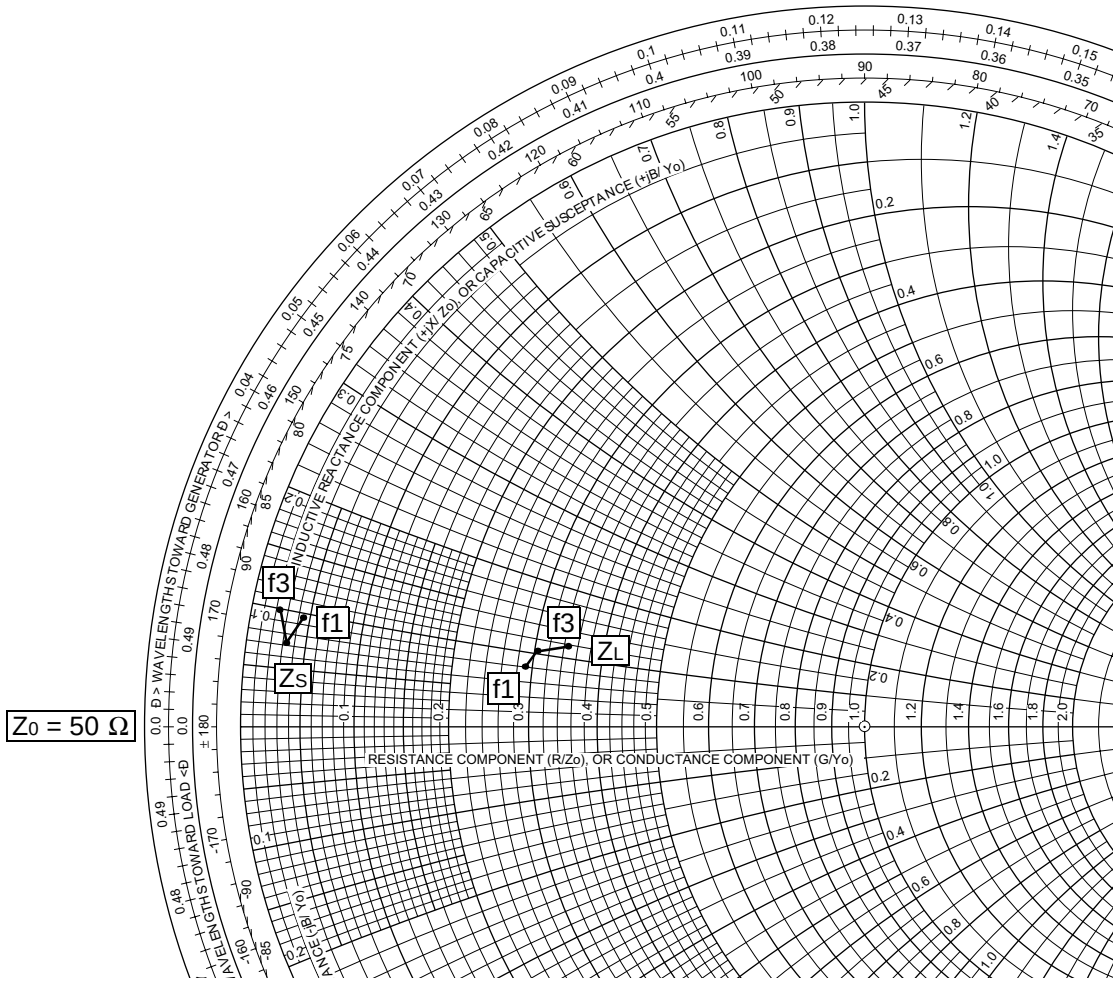
Parts List:

- Microstrip:
  Z1 0.340 in. x 0.066 in.
  Z2 0.230 in. x 0.120 in.
  Z3 0.640 in. x 0.120 in.
  Z4 1.448 in. x 0.400 in.
  Z5 0.080 in. x 0.400 in.
  Z6 0.947 in. x 0.075 in.
  Z7 0.037 in. x 0.200 in.
  Z8 0.138 in. x 0.200 in.
  Z9 0.480 in. x 0.200 in.
  Z10 0.510 in. x 0.066 in.
  Z11 0.225 in. x 0.066 in.
  Z12 0.310 in. x 0.066 in.
  Z13 1.930 in. x 0.040 in.
- *ATC®* chip capacitor:
  C1, C3, C9, C19: 47 pF 100B470JW250X
  C18: 4.7 pF 100B3R9BW250X
  C16: 0.5 pF 100B0R5FW250X
  C15: 15 pF 100B120FW500X
  C4, C10: 100 pF 100B101FW250X.
- *Kemet®* 1206 size chip capacitor:
  C7, C13: 1.0 µF C1812105K5RACTR.
- Ceramic capacitors:
  C5, C11: 0.01 µF
  C6, C12: 0.1 µF.
- *Johanson Giga-Trim®* variable capacitor:
  C2: 0.8 pF to 8.0 pF, C17 0.6 pF to 4.6 pF.
- 1206 size chip resistor: R1 50 Ω.
- *Fair-Rite®*; ferrite bead: FB1 2743019446.
- *Taconic®* ORCER RF-35: board material, 1 oz. copper, 30 mil thickness, $\varepsilon r = 3.5$.
- *Sprague® tantalum surface-mount chip capacitor: C8, C14: 22 µF, 35 V.*
- *Murata®* 0805 size chip capacitor:
  C5, C11: 0.01 µF GRM40X7R103K100AL.

B. Component Layout

Figure 2. AGR21010E Test Circuit, 921 MHz—960 MHz

Typical Performance Characteristics, 921 MHz—960 MHz



MHz (f)	ZS Ω (complex source impedance)	ZL Ω (complex optimum load impedance)
921 (f1)	2.01 + j4.67	14.42 + j4.55
940.5 (f2)	2.0 + j4.73	15.38 + j5.07
960 (f3)	1.61+ j4.93	17.28 + j5.71

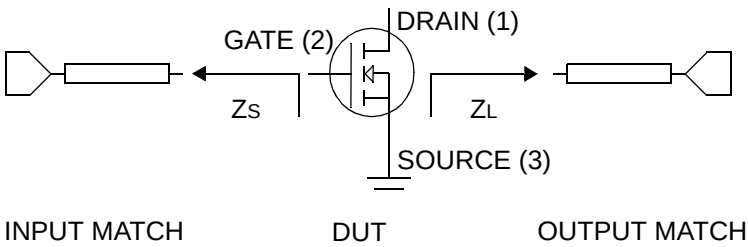


Figure 3. Series Equivalent Input and Output Impedances, 921 MHz—960 MHz

Typical Performance Characteristics, 921 MHz—960 MHz (continued)

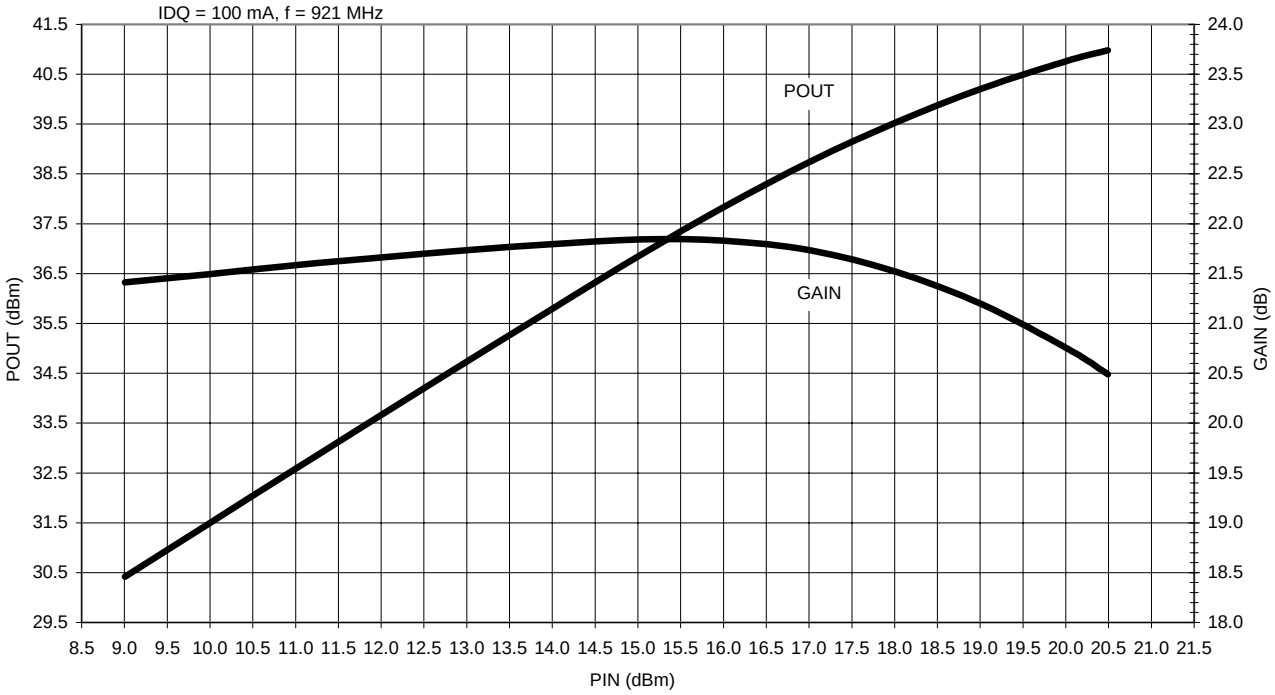


Figure 4. Gain and POUT vs. PIN (f = 921 MHz)

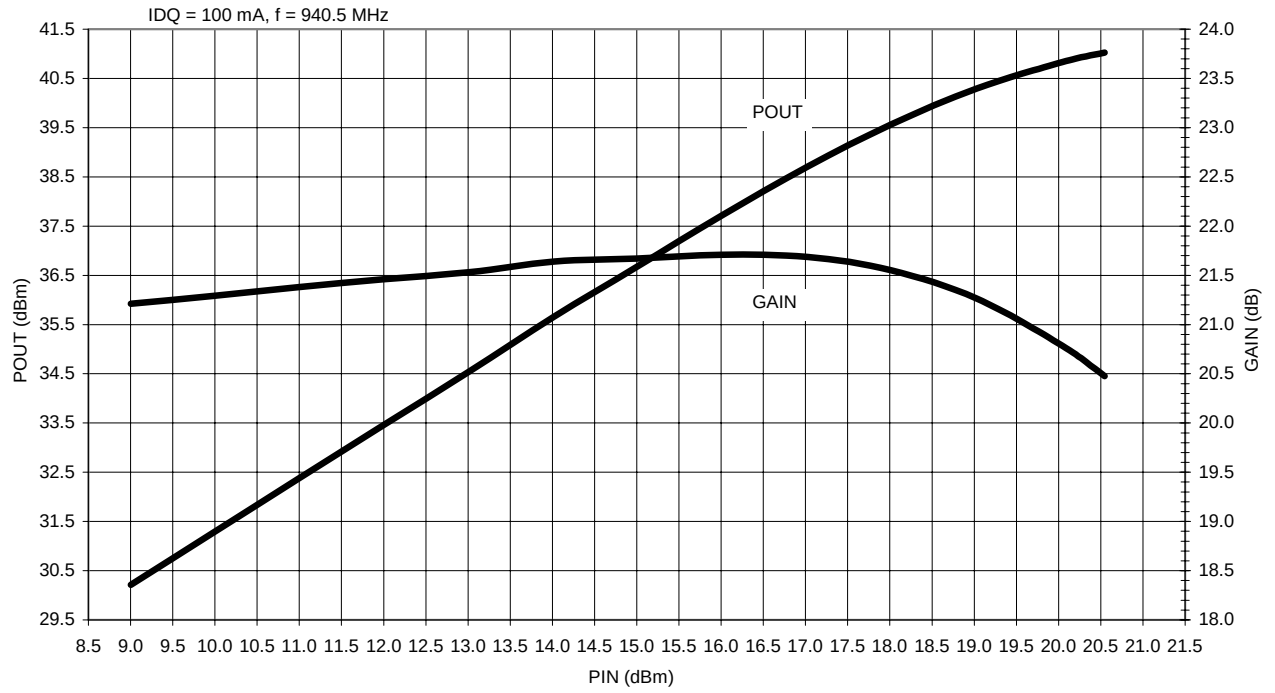


Figure 5. Gain and POUT vs. PIN (f = 940.5 MHz)

Typical Performance Characteristics, 921 MHz—960 MHz (continued)

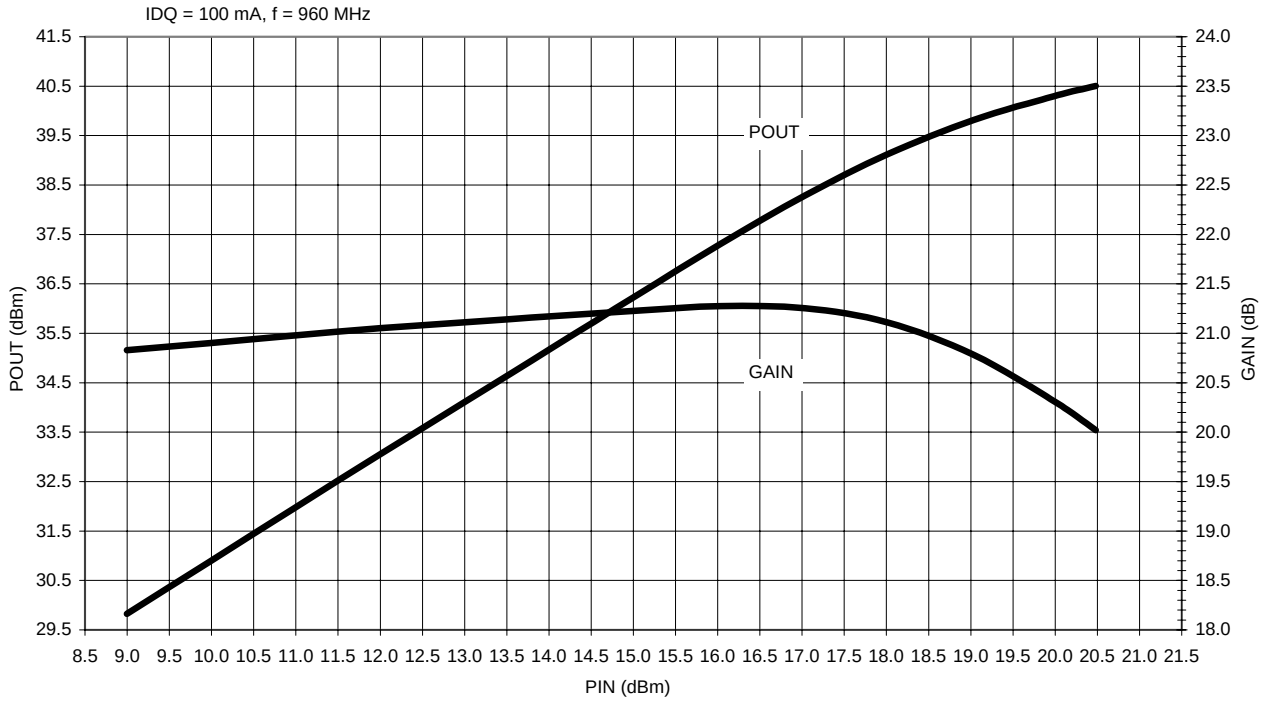


Figure 6. Gain and POUT vs. PIN (f = 960 MHz)

EDGE (Enhanced Data for Global Evolution) Characterization, 921 MHz—960 MHz

ACPR DATA POINTS AS ILLUSTRATED IN THE PERFORMANCE GRAPH											
PIN (dBm)	POUT (dBm)	Gain (dB)	Ids (A)	Drain Eff. (%)	ACP Up (dBc)	ACP Low (dBc)	Alt1 Up (dBc)	Alt1 Low (dBc)	Alt2 Up (dBc)	Alt2 Low (dBc)	Pdc (w)
0.93	20.83	19.9	0.116	4.016	–37.92	–37.119	–70.688	–69.807	–80.331	–80.216	3.0
1.48	21.46	19.98	0.12	4.492	–37.825	–37.039	–70.429	–69.498	–80.27	–80.185	3.1
1.98	21.96	19.98	0.12	5.04	–37.744	–36.929	–70.057	–69.085	–80.209	–80.04	3.1
2.51	22.51	20.00	0.128	5.37	–37.714	–36.921	–69.773	–68.647	–80.305	–80.233	3.3
3.02	23.07	20.05	0.135	5.756	–37.554	–36.738	–69.24	–68.171	–80.217	–80.474	3.5
3.54	23.63	20.09	0.139	6.365	–37.449	–36.662	–68.73	–67.505	–79.871	–80.242	3.6
4.02	24.19	20.17	0.143	7.043	–37.306	–36.501	–68.114	–66.936	–80.082	–80.251	3.7
4.53	24.76	20.23	0.147	7.818	–37.169	–36.379	–67.526	–66.43	–80.312	–80.085	3.8
5.02	25.33	20.31	0.159	8.257	–37.045	–36.24	–67.011	–65.783	–80.156	–79.869	4.1
5.53	25.91	20.38	0.171	8.788	–36.897	–36.097	–66.244	–65.139	–79.804	–79.831	4.4
6.02	26.49	20.47	0.178	9.603	–36.717	–35.894	–65.595	–64.486	–79.928	–79.758	4.6
6.53	27.08	20.55	0.186	10.539	–36.541	–35.697	–64.929	–63.852	–79.278	–79.7	4.8
6.95	27.59	20.64	0.194	11.374	–36.408	–35.584	–64.35	–63.325	–79.373	–79.193	5.0
7.47	28.18	20.71	0.202	12.525	–36.256	–35.42	–63.702	–62.705	–78.646	–78.753	5.3
7.97	28.77	20.8	0.218	13.316	–36.078	–35.222	–63.038	–62.223	–77.814	–77.978	5.7
8.46	29.37	20.91	0.222	15.019	–35.931	–35.041	–62.475	–61.65	–76.878	–76.994	5.8
8.98	29.98	21.00	0.249	15.383	–35.799	–34.895	–61.933	–61.118	–76.077	–76.28	6.5
9.48	30.56	21.08	0.259	16.894	–35.622	–34.743	–61.327	–60.555	–75.174	–75.447	6.7
9.96	31.15	21.19	0.275	18.226	–35.531	–34.597	–60.805	–60.071	–74.551	–74.652	7.2
10.47	31.73	21.26	0.292	19.618	–35.361	–34.448	–60.332	–59.577	–73.78	–73.848	7.6
10.96	32.31	21.35	0.311	21.051	–35.229	–34.328	–59.87	–59.029	–72.889	–73.073	8.1
11.46	32.88	21.42	0.331	22.553	–35.067	–34.177	–59.628	–58.639	–72.137	–72.257	8.6
12.03	33.55	21.52	0.355	24.536	–34.889	–34.006	–59.375	–58.115	–71.033	–71.129	9.2
12.52	34.11	21.59	0.377	26.284	–34.629	–33.766	–59.055	–57.605	–70.124	–70.295	9.8
13.00	34.67	21.67	0.401	28.111	–34.246	–33.402	–58.421	–56.642	–69.173	–69.509	10.4

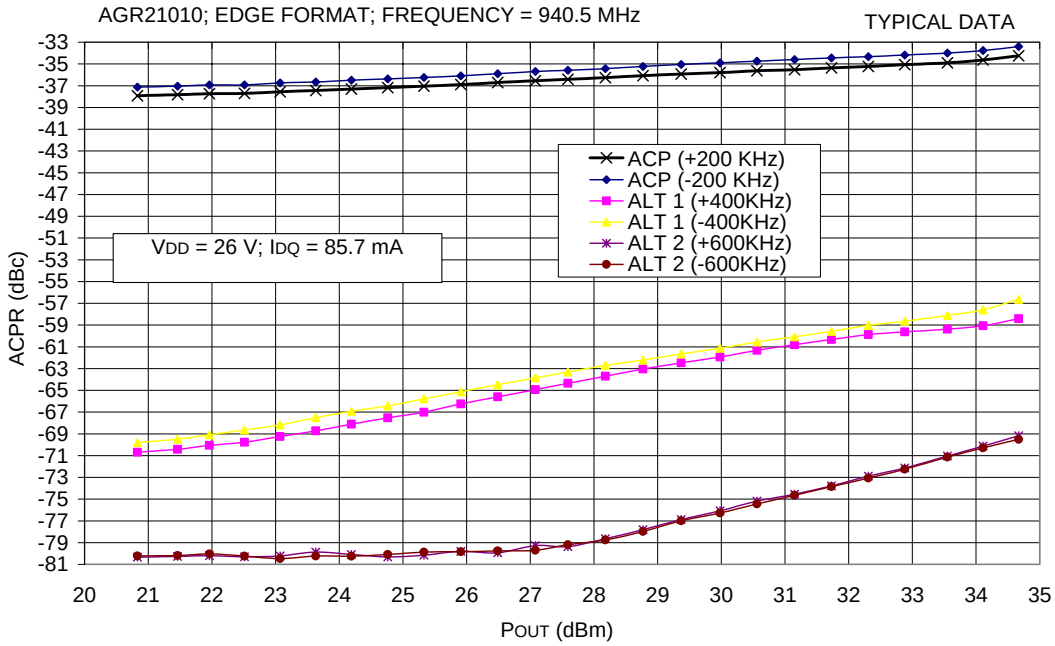
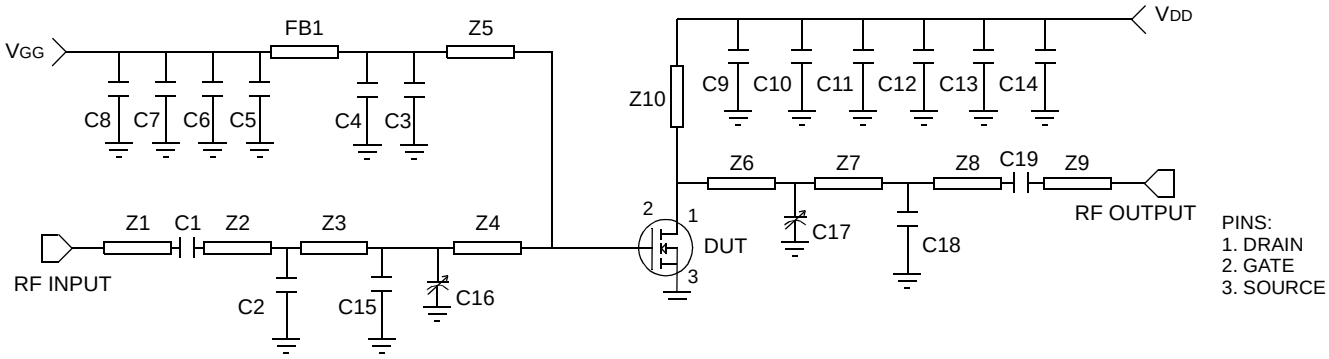
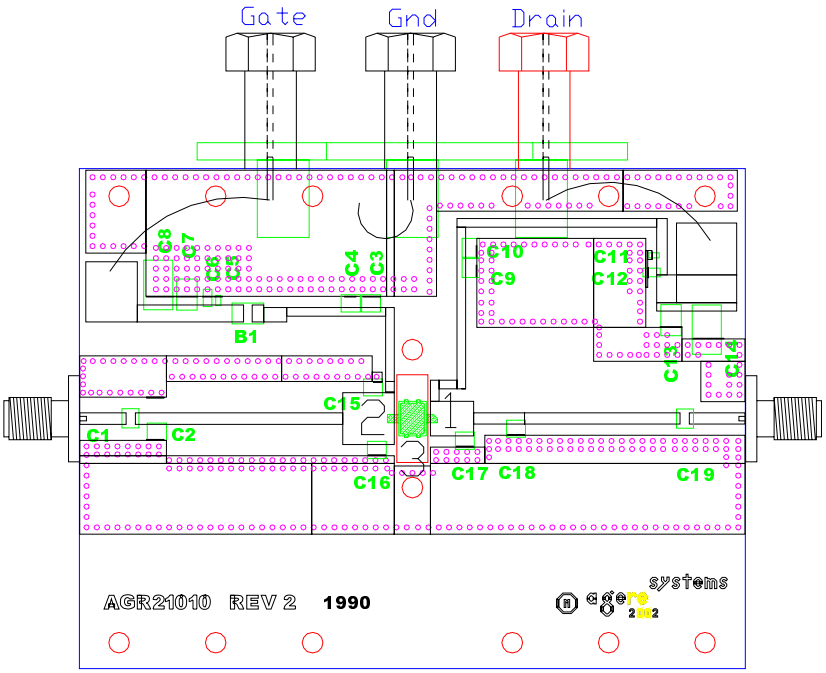


Figure 7. ACPR vs. POUT

Test Circuit Illustrations for AGR21010E, 1930 MHz—1990 MHz



A. Schematic



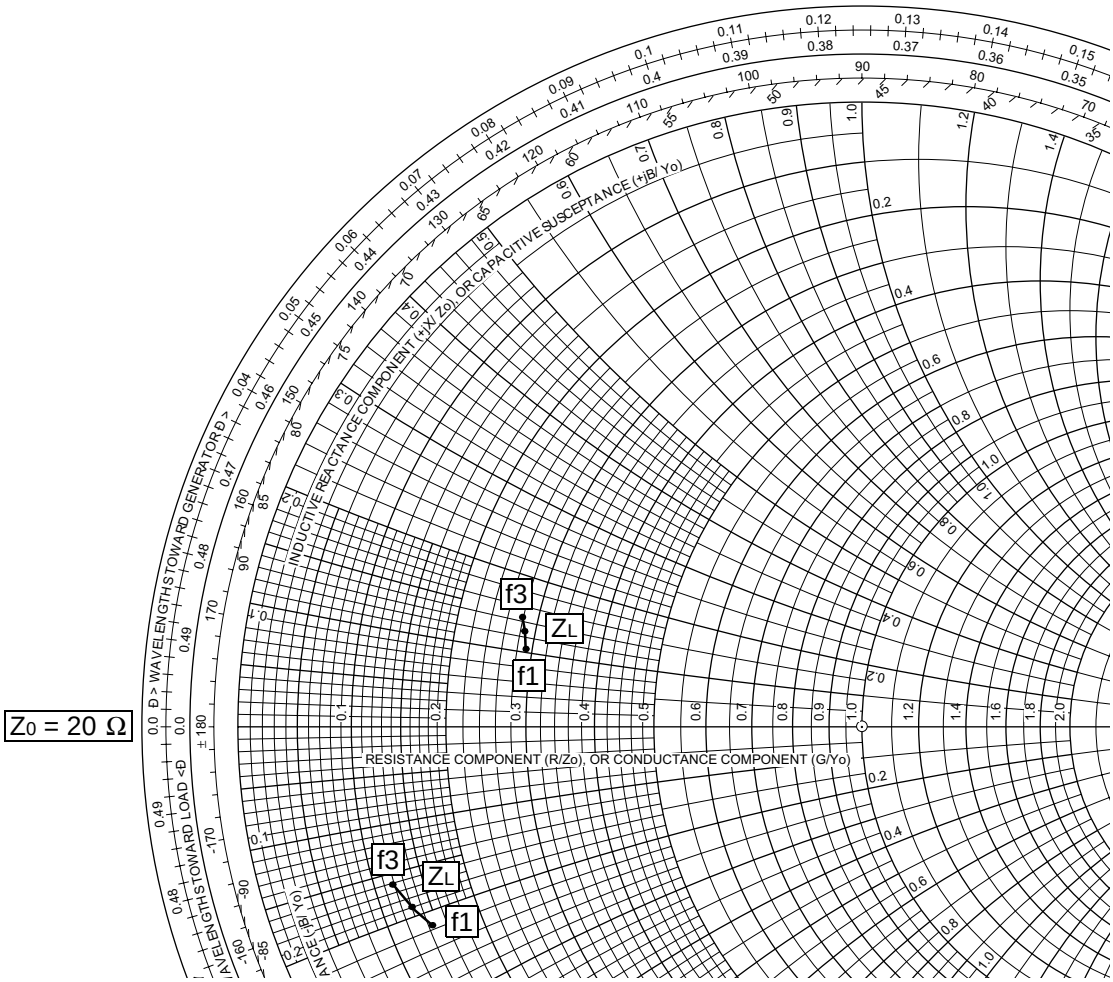
Parts List:

- Microstrip:
  Z1 0.230 in. x 0.066 in.
  Z2 0.040 in. x 0.075 in.
  Z3 1.045 in. x 0.075 in.
  Z4 0.300 in. x 0.300 in.
  Z5 0.458 in. x 0.030 in.
  Z6 0.250 in. x 0.200 in.
  Z7 0.300 in. x 0.200 in.
  Z8 0.865 in. x 0.066 in.
  Z9 0.325 in. x 0.066 in.
  Z10 0.947 in. x 0.050 in.
- *ATC*® chip capacitor:
  C1, C3, C9, C19: 10 pF 100B100FW250X
  C18: 2 pF 100B2R0BW250X
  C4, C10: 100 pF 100B101FW250X
  C15: 1.8 pF 100B1R8FW250X
  C2: 0.7 pF 100B0R7FW250X.
- *Kemet*® 1206 size chip capacitor:
  C7, C13: 1.0 µF C1812105K5RACTR.
- Ceramic capacitors:
  C5, C11: 0.01 µF
  C6, C12: 0.1 µF.
- *Sprague*® tantalum surface-mount chip capacitor: C8, C14: 22 µF, T491X226K035AS.
- *Johanson Giga-Trim*® variable capacitor:
  C16, C17: 0.6 pF to 4.6 pF.
- *Fair-Rite*®; ferrite bead: FB1 2743019446.
- *Taconic*® ORCER RF-35: board material, 1 oz. copper, 30 mil thickness, $\varepsilon r = 3.5$.

B. Component Layout

Figure 8. AGR21010E Test Circuit, 1930 MHz—1990 MHz

Typical Performance Characteristics, 1930 MHz—1990 MHz



MHz (f)	Z_S Ω (complex source impedance)	Z_L Ω (complex optimum load impedance)
1930 (f1)	2.79 – j4.29	5.79 + j3.17
1960 (f2)	2.57 – j3.95	5.71 + j2.76
1990 (f3)	2.39 – j3.24	5.70 + j3.29

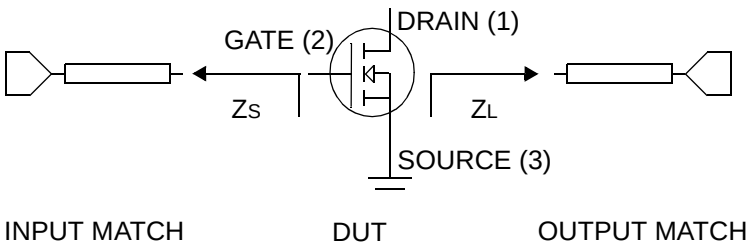


Figure 9. Series Equivalent Input and Output Impedances, 1930 MHz—1990 MHz

Typical Performance Characteristics, 1930 MHz—1990 MHz (continued)

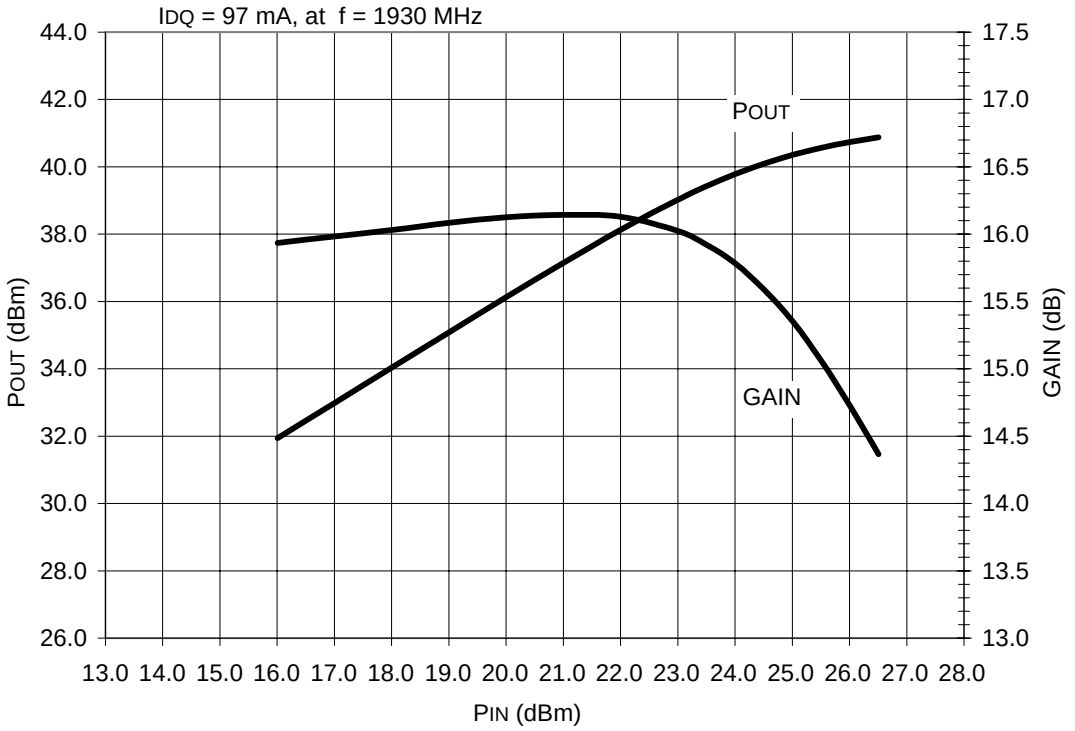


Figure 10. Gain and POUT vs. PIN (f = 1930 MHz)

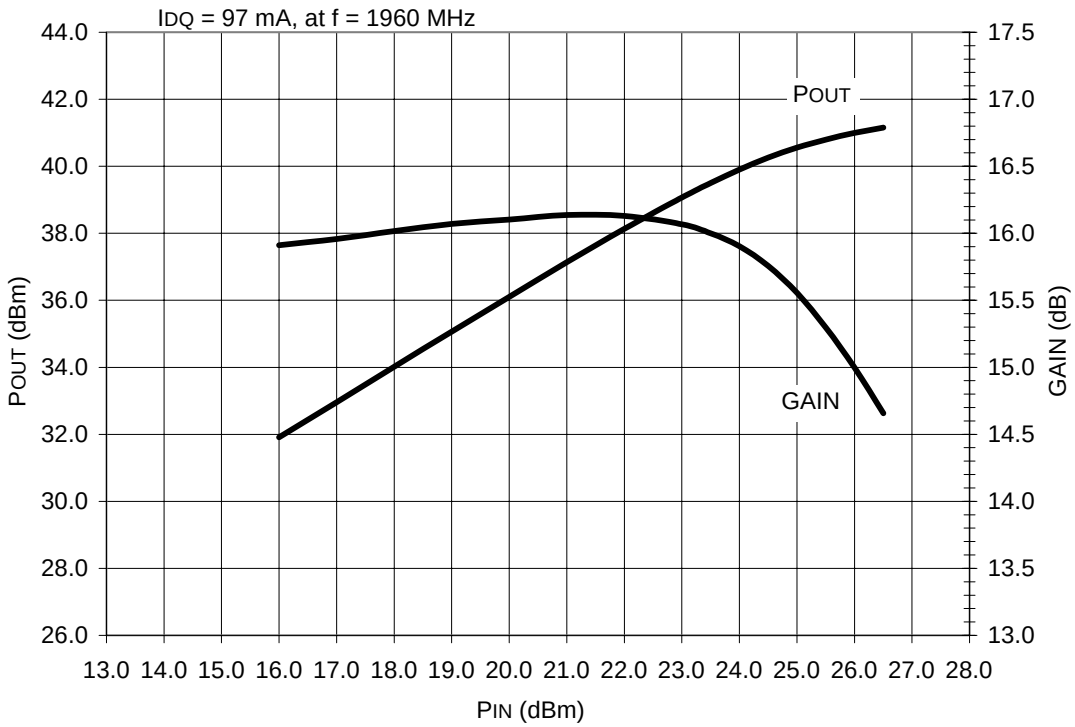


Figure 11. Gain and POUT vs. PIN (f = 1960 MHz)

Typical Performance Characteristics, 1930 MHz—1990 MHz (continued)

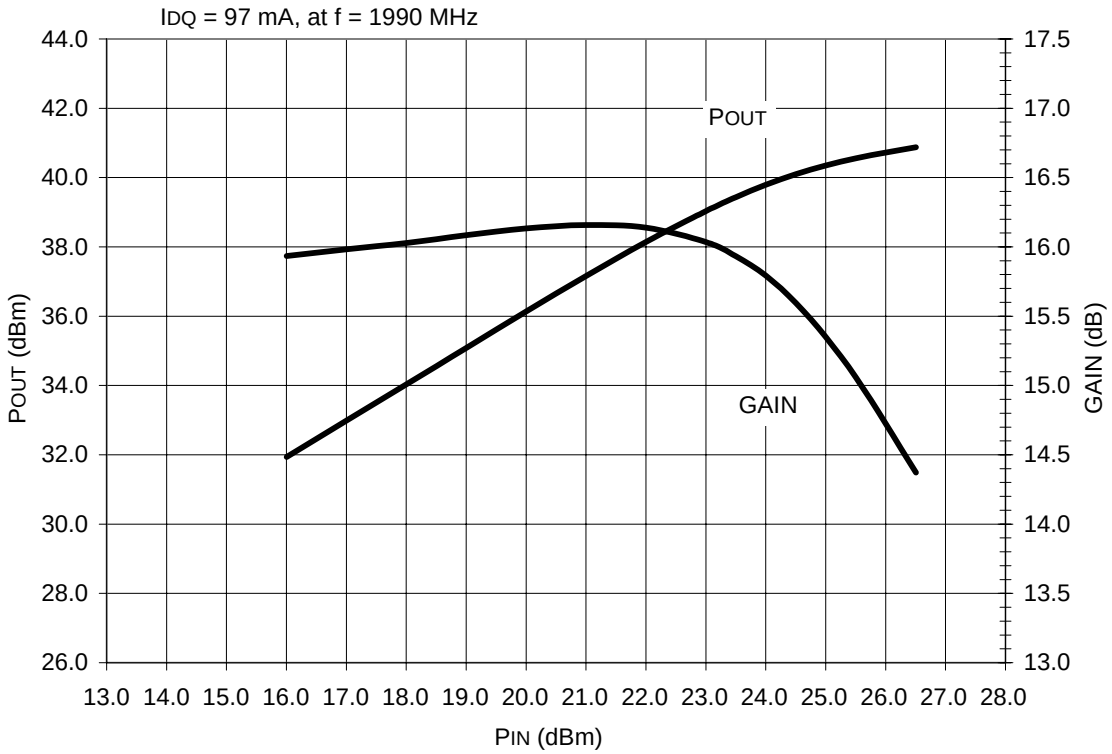
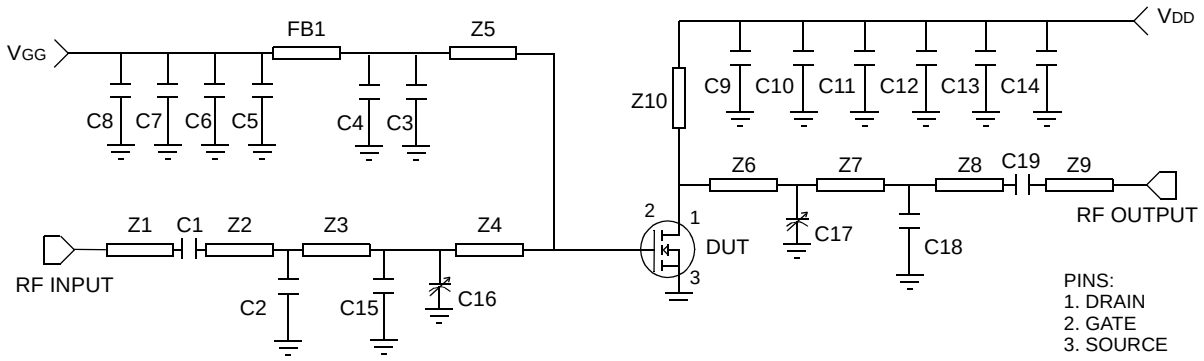


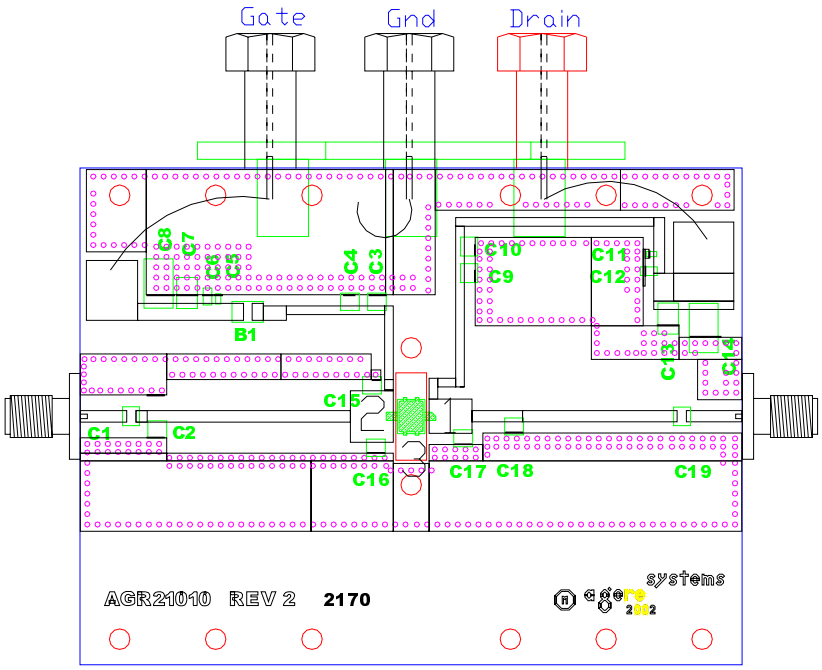
Figure 12. Gain and POUT vs. PIN (f = 1990 MHz)

Test Circuit Illustrations for AGR21010E, 2110 MHz—2170 MHz



A. Schematic

Preliminary Layout



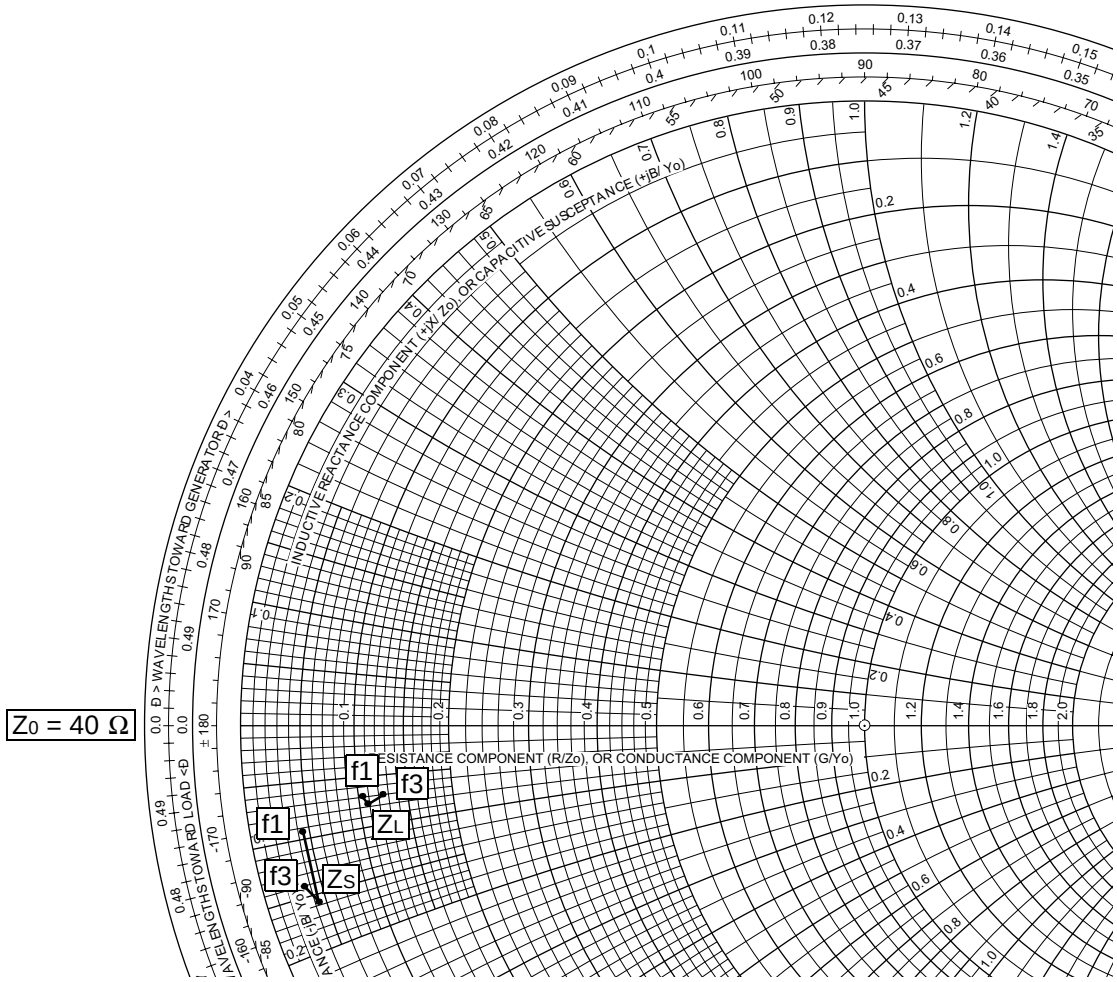
Parts List:

- Microstrip:
  Z1 0.230 in. x 0.066 in.
  Z2 0.040 in. x 0.075 in.
  Z3 1.075 in. x 0.075 in.
  Z4 0.270 in. x 0.300 in.
  Z5 0.420 in. x 0.050 in.
  Z6 0.250 in. x 0.200 in.
  Z7 0.310 in. x 0.200 in.
  Z8 0.855 in. x 0.066 in.
  Z9 0.325 in. x 0.066 in.
  Z10 0.835 in. x 0.050 in.
- *ATC*® chip capacitor:
  C3, C9: 8.2 pF 100B8R2FW250X
  C1, C19: 8.2 pF 100B8R2FW250X
  C18: 2 pF 100B2R0BW250X
  C4, C10: 100 pF 100B101FW250X
  C15: 1.8 pF 100B1R8FW250X
  C2: 1.0 pF 100B1R0FW250X.
- *Kemet*® 1206 size chip capacitor:
  C7, C13: 1.0 µF C1812105K5RACTR.
- Ceramic capacitors:
  C5, C11: 0.01 µF
  C6, C12: 0.1 µF.
- *Sprague*® tantalum surface-mount chip capacitor: C8, C14: 22 µF, T491X226K035AS.
- *Johanson Giga-Trim*® variable capacitor:
  C16, C17: 0.6 pF to 4.6 pF.
- *Fair-Rite*®; ferrite bead: FB1 2743019446.
- *Taconic*® ORCER RF-35: board material, 1 oz. copper, 30 mil thickness, εr = 3.5.

B. Component Layout

Figure 13. AGR21010E Test Circuit, 2110 MHz—2170 MHz

Typical Performance Characteristics, 2110 MHz—2170 MHz



MHz (f)	Z_S Ω (complex source impedance)	Z_L Ω (complex optimum load impedance)
2110 (f1)	1.66 – j6.53	4.45 – j3.27
2140 (f2)	1.95 – j3.79	4.33 – j3.02
2170 (f3)	1.88 – j5.61	4.54 – j4.77

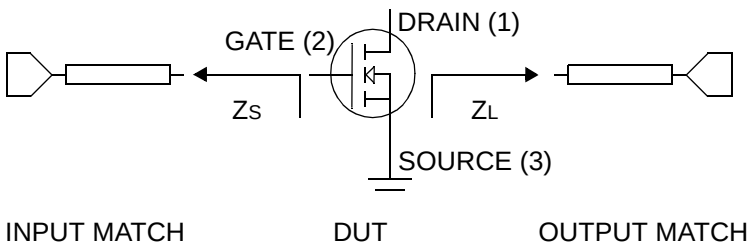


Figure 14. Series Equivalent Input and Output Impedances, 2110 MHz—2170 MHz

Typical Performance Characteristics, 2110 MHz—2170 MHz (continued)

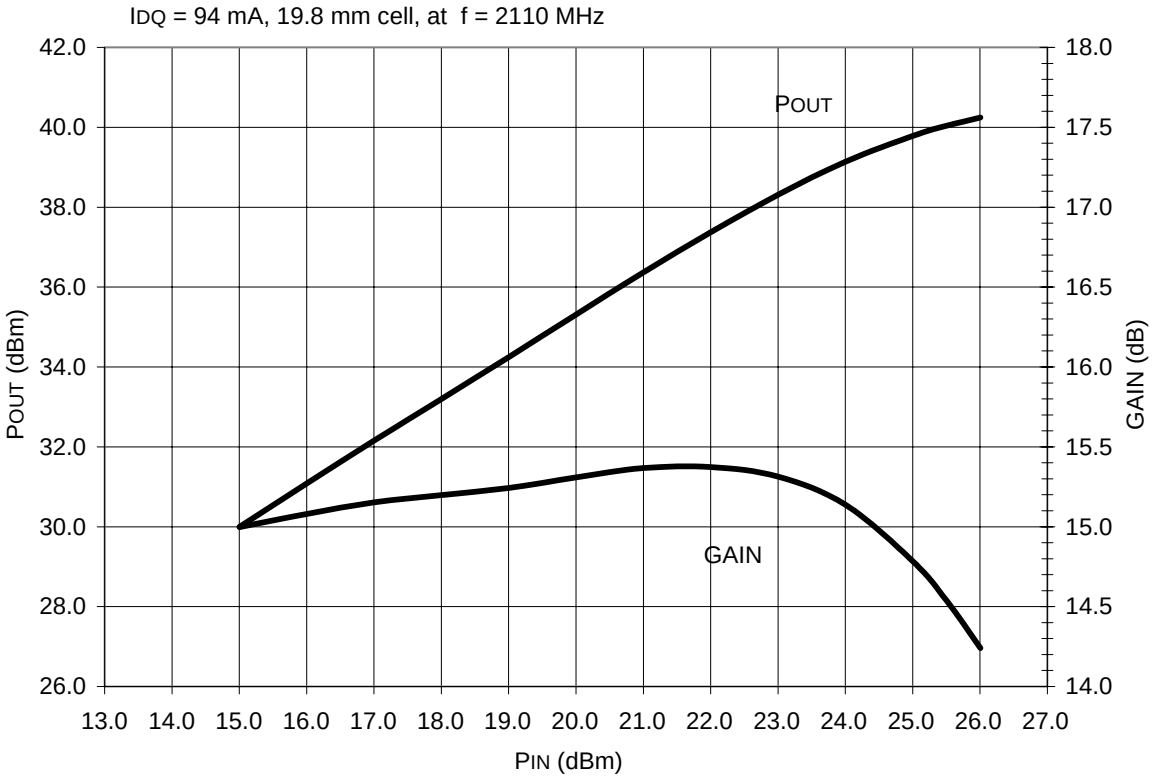


Figure 15. Gain and POUT vs. PIN (f = 2110 MHz)

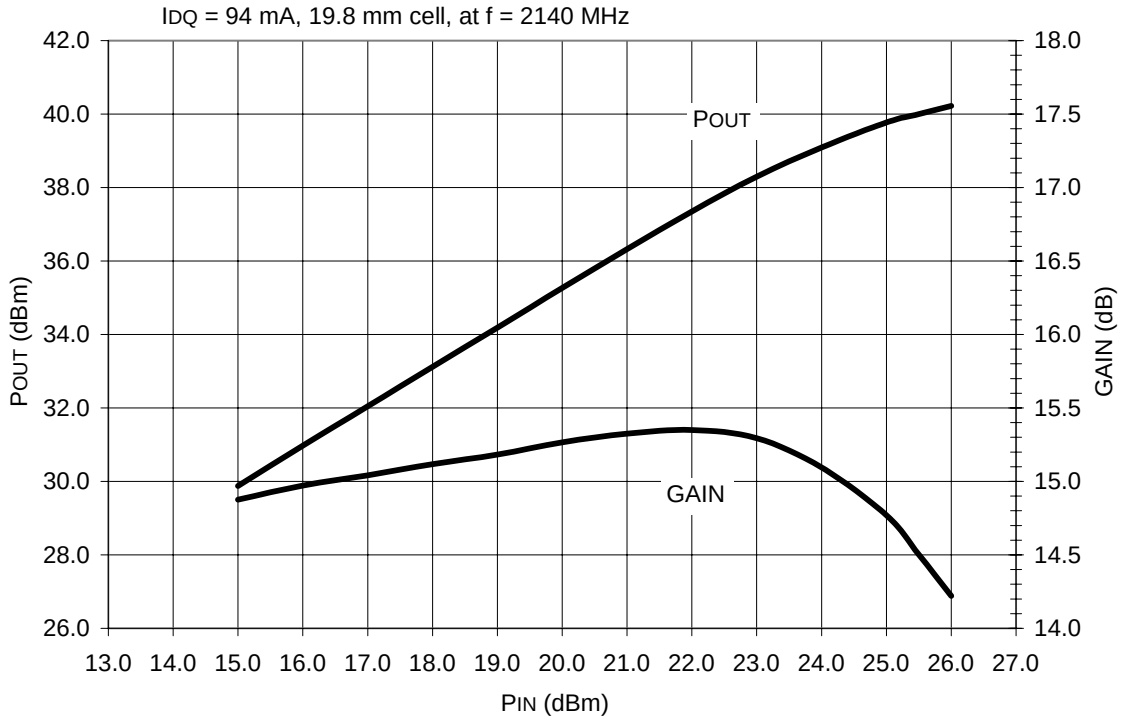


Figure 16. Gain and POUT vs. PIN (f = 2140 MHz)

Typical Performance Characteristics, 2110 MHz—2170 MHz (continued)

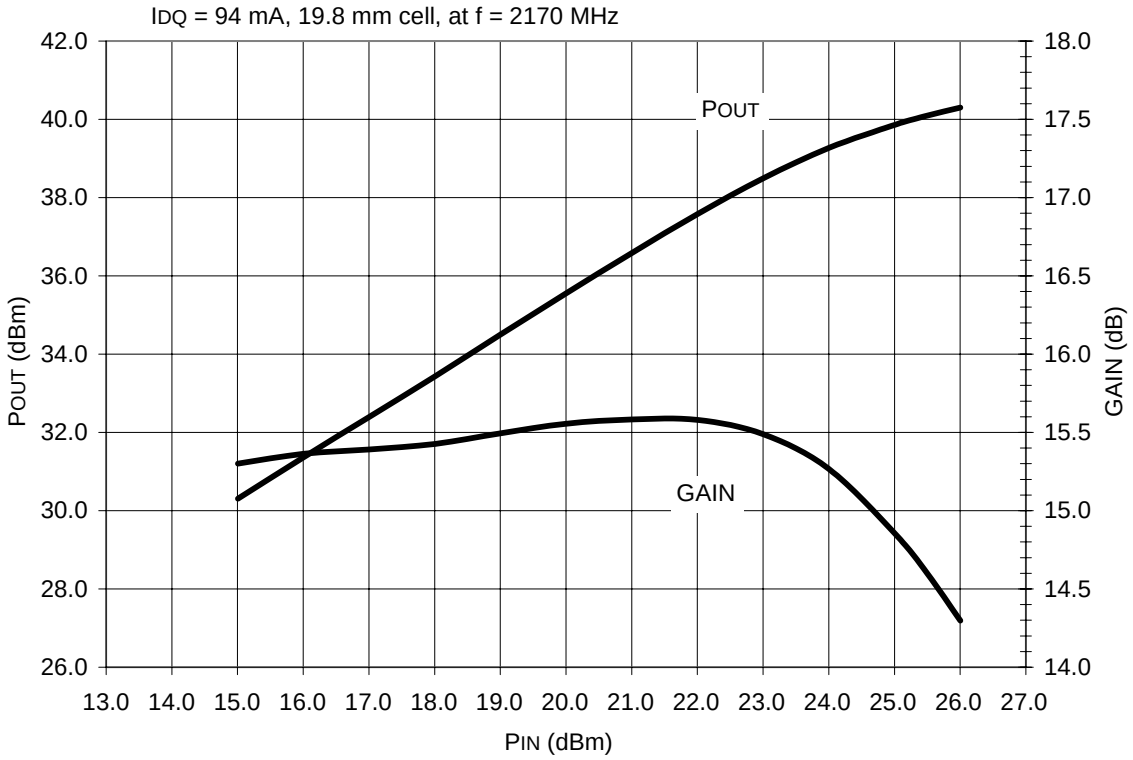
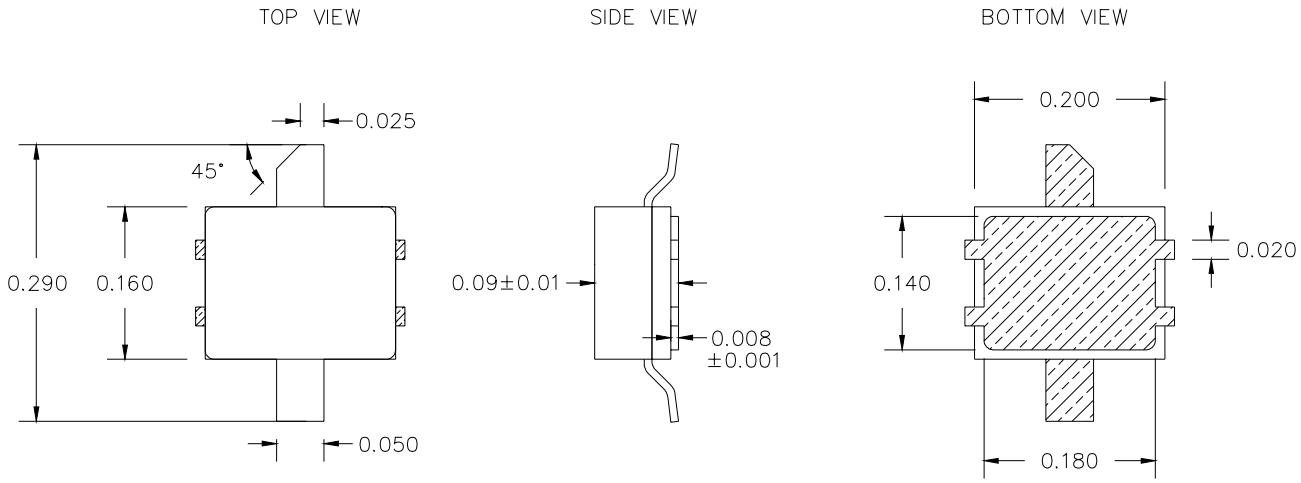


Figure 17. Gain and POUT vs. PIN (f = 2170 MHz)

Package Dimensions

All dimensions are in inches. Tolerances are ±0.005 in. unless specified. Cut lead denotes drain.

AGR21010EU



Ordering Information

Device Code	Package	Availability	Comcode
AGR21010E	AGR21010EU (surface-mount)	Tape and Reel	700047348

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April 2003
DS03-038RFPP (Replaces DS02-381RFPP)