HEWLETT PACKARD

Low Noise Amplifier with Bypass Switch

MGA-72543

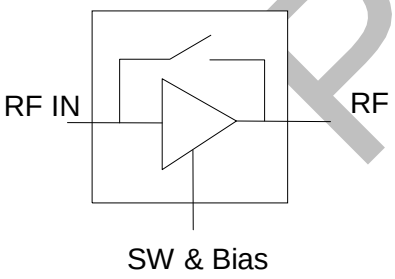
Features

- **Operating Frequency**
  0.1 GHz ~ 6.0GHz
- **Noise Figure : 1.4dB**
- **Gain : 14dB**
- **Bypass Switch on Chip**
  Loss = -2.5 dB (Id < 5 mA)
  IIP3=+35dBm
- **Adjustable Input IP3**
  +2 to +14 dBm
- **2.7 V to 5.0V operation**

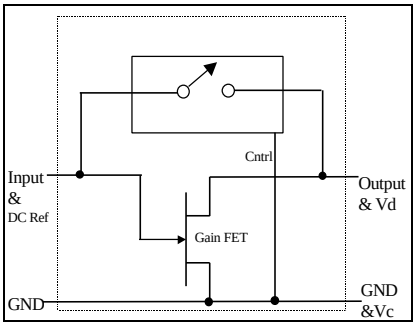
Applications

- **CDMA (IS-95, J-STD-008)**
  Receiver LNA
  Transmit Driver Amp
- **TDMA (IS-136) handsets**

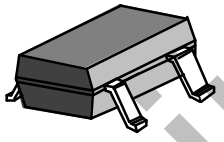
Functional Block Diagram



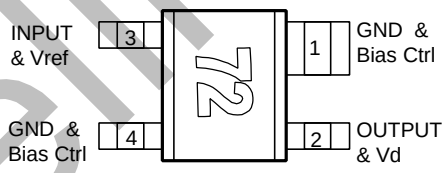
Simplified Schematic



Surface Mount Package
SOT-343/SC-70



Pin Connections and Package Marking



Description

Hewlett-Packard's MGA-72543 is an economical, easy-to-use GaAs MMIC Low Noise Amplifier (LNA), which is designed for an adaptive CDMA receiver LNA and adaptive CDMA transmit driver amplifier.

The MGA-72543 features a minimum noise figure of 1.4 dB and 14 dB associated gain from a single stage, feedback FET amplifier. The output is internally matched to 50 Ω. The input is optimally internally matched for lowest noise figure into 50 Ω. The input may be additionally externally matched for low VSWR through the addition of a single series inductor. When set into the bypass mode, both input and output are internally matched to 50 Ω.

The MGA-72543 offers an integrated solution of LNA with adjustable IIP3. The IIP3 can be fixed to a desired current level for the receiver's linearity requirements. The LNA has a bypass switch function, which sets the current to zero and provides low insertion loss. The bypass mode also boosts dynamic range when high level signal is being received.

For the CDMA driver amplifier applications, the MGA-72543 provides suitable gain and linearity to meet the ACPR requirement when the handset transmits the highest power. When transmitting lower power, the MGA-72543 can be bypassed, saving the drawing current.

The MGA-72543 is a GaAs MMIC, processed on HP's cost effective PHEMT (Pseudomorphic High Electron Mobility Transistor). It is housed in the SOT343 (SC70 4-lead) package.

Absolute Maximum Ratings[1]

	Parameter	Units	Absolute Maximum	Operation Maximum
V_d	Max. Input to Output voltage	V	5.5	4.2
V_c	Max. Input to Ground DC Voltage	V	+.3 -5.5	+.1 -4.2
Id	Supply Current	mA	70	60
Pd	Power Dissipation[2,3]	mW	300mW	250mW
P_{in}	CW RF Input Power	dBm	+20	+13
Tj	Junction temperature	°C	170	150
T_{STG}	Storage temperature	°C	-65 to 150	-40 to +85

Thermal Resistance[2] θ_{jc} = 200 °/W

Notes:
1. Operation of this device in excess of any of these limits may cause permanent damage.
2. T_{case} = 25 °C

Electrical Specifications, Tc= +25 °C, Zo=50 Ω, Id=20mA, Vd=3V, unless noted

Symbol	Parameter and Test Condition		Units	Min.	Typ.	Max.	s
Vc test[1]	f=2.0 GHz Vd=3.0V (Vds=2.5V)	Id= 20 mA	V	0.37	0.51	0.65	0.035
NF test[1]	f=2.0 GHz Vd=3.0V (=Vds+Vc)	Id= 20 mA	dB		1.5	1.8	0.06
Ga test[1]	f=2.0 GHz Vd=3.0V (=Vds+Vc)	Id= 20mA	dB	13.5	14.4	15.5	0.13
IIP3 test[1]	f=2.04 GHz Vd=3.0V (=Vds+Vc)	Id= 20mA	dB	8.5	10.5		0.67
IL test[1]	f=2.0 GHz Vd=3.0V (Vds=0V, Vc=3V)	Id= 0.0mA	dB		2.5	3.5	0.01
Ig test[1]	f=2.0 GHz Vd=3.0V (Vds=0V, Vc=3V)	Id= 0.0mA	uA		2.0		2.0
Nfo[2]	Minimum Noise Figure As measured in Figure 2 Test Circuit (Γopt computed from s-parameter and noise parameter performance as measured in a 50 Ω impedance fixture)	f=1.0 GHz f=1.5 GHz f=2.0 GHz f=2.5 GHz f=4.0 GHz f=6.0 GHz	dB		1.35 1.38 1.42 1.45 1.54 1.70		0.04
Gass[2]	Associated Gain at Nfo As measured in Figure 2 Test Circuit (Γopt computed from s-parameter and noise parameter performance as measured in a 50 Ω impedance fixture)	f=1.0 GHz f=1.5 GHz f=2.0 GHz f=2.5 GHz f=4.0 GHz f=6.0 GHz	dB		14.8 14.2 13.6 13.0 11.2 9.2		0.11
P1dB[1]	Output Power at 1 dB Gain Compression As measured in Figure 1 Test Circuit Frequency=2.04 GHz	Id= 0 mA Id= 5 mA Id= 10 mA Id= 20 mA Id= 40 mA Id = 60 mA	dBm		+15 .3 +3.2 +8.3 +11.2 +14.9 +17.1		0.52
IIP3[1]	Input Third Order Intercept Point As measured in Figure 1 Test Circuit Frequency=2.04 GHz	Id= 0 mA Id= 5 mA Id= 10 mA Id= 20 mA Id= 40 mA Id = 60 mA	dBm		+35 +3.5 +6.2 +10.5 +12.1 +14.8		0.67
ACPR	Adjacent Channel Power Rejection, f=2GHz, offset=1.25MHz, Pout=10dBm (CDMA modulation scheme) f=2GHz, offset=900KHz, Pout=8dBm As measured in Figure 1 Test Circuit	 Id=30mA Id=40mA Id=20mA Id=30mA	dBc		 55 60 57 60		
RLin[1]	Input Return Loss as measured in Fig.1	f=2.0 GHz	dB		-10.2		0.22
RLout[1]	Output Return Loss as measured in Fig.1	f=2.0 GHz	dB		-19.5		1.1
ISOL[1]	Isolation |s12|^2 As measured in Fig.2	f=2.0 GHz	dB		-23.2		0.16

Notes: 1. Standard Deviation and Typical Data as measured in the test circuit in Fig 1. Data based at least 500 part sample size and 3 wafer lots.
2.Typical data computed from s-parameter and noise parameter data measured in a 50 Ω system. Data based on 40 parts from 3 wafer lots

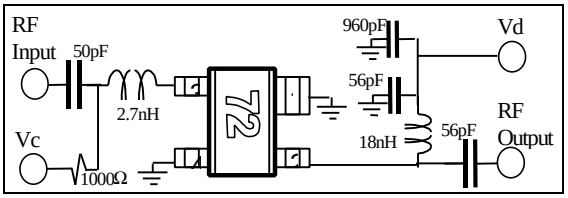


Figure 1. MGA-72543 Production Test Circuit

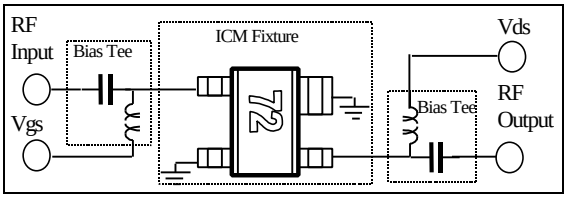


Figure 2. MGA-72543 ICM test circuit for s, noise, and power parameters over frequency.

MGA-72543 Typical Performance, Tc=25C, Zo=50, Vd=3V, Id=20mA unless stated otherwise. All data as measured in Figure 2 test system (Input & Output presented to 50 Ω).

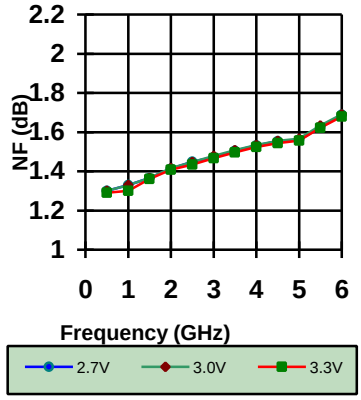


Fig 1. Minimum Noise Figure vs. Frequency and Voltage

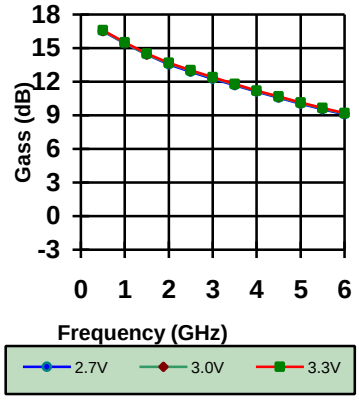


Fig 2 Associated Gain with Fmin vs. Frequency and Voltage

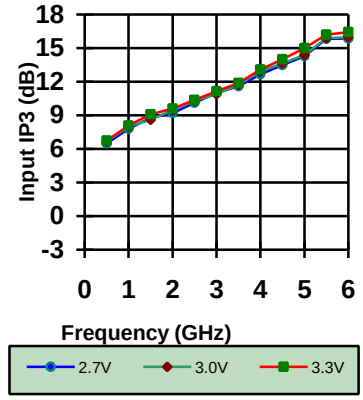


Fig 3. Input Third Order Intercept Point vs. Frequency and Voltage

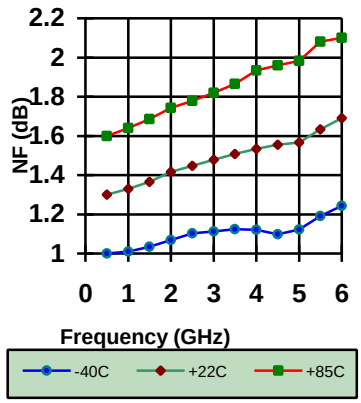


Fig 4. Minimum Noise Figure vs. Frequency and Temperature

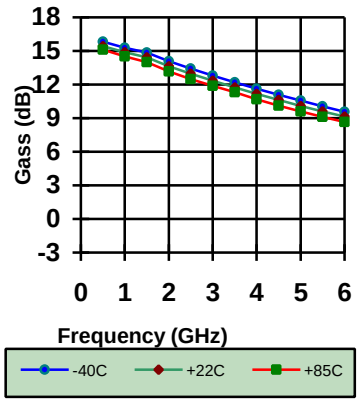


Fig 5. Associated Gain with Fmin vs. Frequency and Temperature

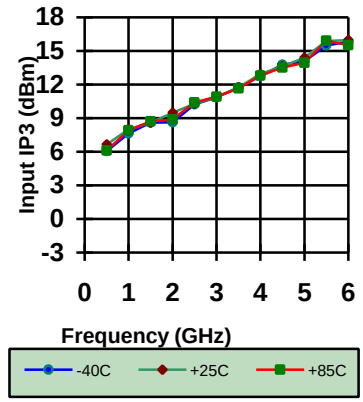


Fig 6. Input Third Order Intercept Point vs. Frequency and Temp.

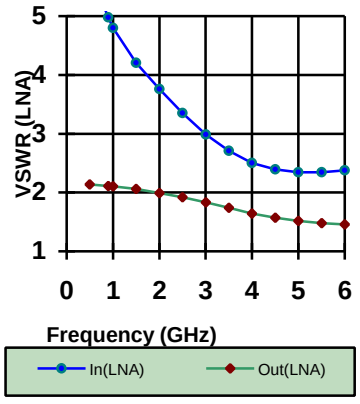


Fig 7 LNA on (Switch off) VSWR vs Frequency

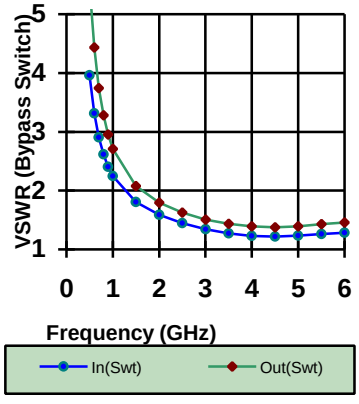


Fig 8. LNA off (Switch on) VSWR vs. Frequency

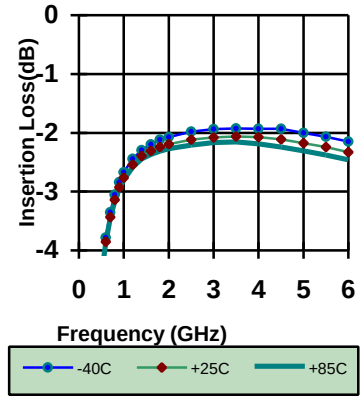


Fig 9. Insertion Loss (Switch on) vs. Frequency and Temperture

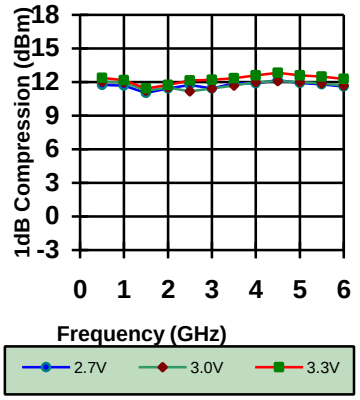


Fig 10. One dB Compression vs. Frequency and Voltage

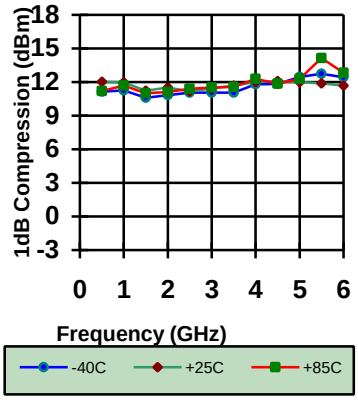


Fig 11. One dB Compression vs. Frequency and Temperature

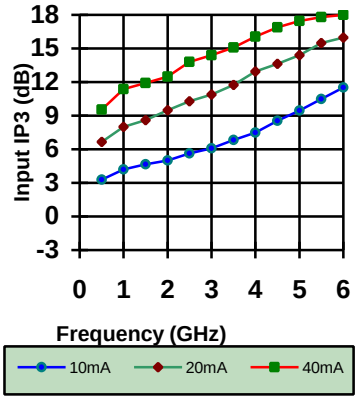


Fig12.Input Third Order Intercept Point vs. Frequency and Current

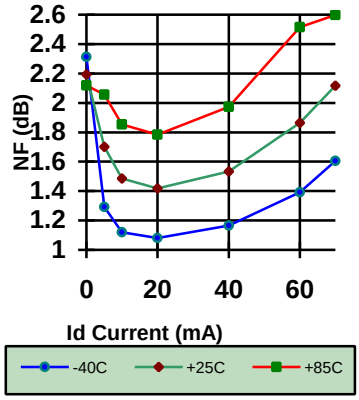


Fig 13. Minimum Noise Figure vs. Current and Temperature

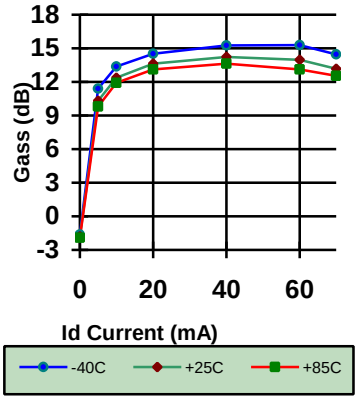


Fig 14. Associated Gain (Fmin) vs. Current and Temperature

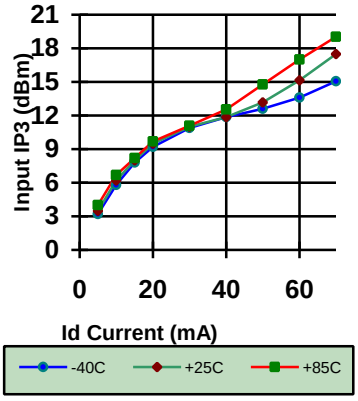


Fig 15Input Third Order Intercept Point vs. Current and Temp.

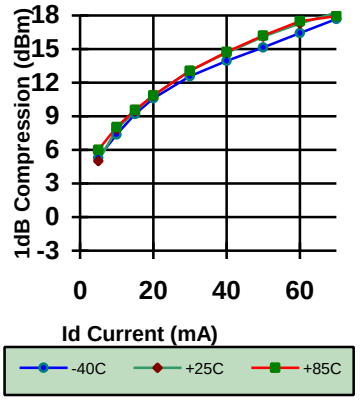


Fig 16 One dB Compression vs. Current and Temperature

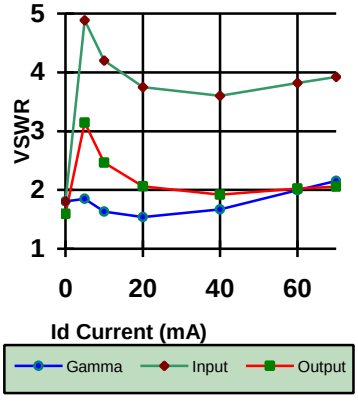


Fig 17. LNA on VSWR and Gamma Opt vs. Current

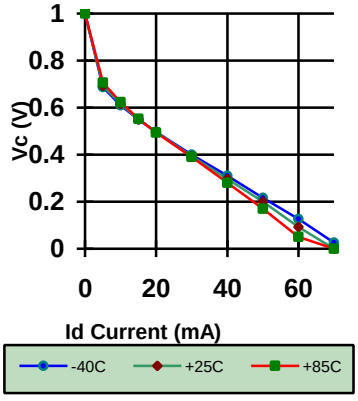


Fig 18. Control Voltage vs. Current and Temperature

SP

MGA-72543 Typical Scattering Parameters & Noise Parameters,

Tc = 25 C, Vd = 3.0 V, Id=0mA, Zo = 50 Ω, Vc= 3.0V (from s & noise parameters in Figure 1 test)

Freq	s11(m)	s11(a)	s21(m)	s21(a)	s12(m)	s12(a)	s22(m)	s22(a)	Ga	Input RL	Output R	GTUmax	Isolation
0.10	0.97	-12.93	0.19	73.68	0.19	73.69	0.96	-16.16	-14.52	-0.26	-0.39	-14.15	-14.52
0.20	0.91	-24.51	0.34	59.99	0.34	60.05	0.86	-29.39	-9.33	-0.79	-1.27	-8.30	-9.32
0.30	0.84	-34.44	0.46	48.98	0.46	49.10	0.77	-39.65	-6.81	-1.48	-2.30	-5.31	-6.81
0.40	0.77	-42.77	0.54	40.06	0.54	40.16	0.68	-47.54	-5.34	-2.29	-3.34	-3.69	-5.34
0.50	0.70	-49.71	0.60	32.60	0.60	32.68	0.61	-53.93	-4.41	-3.08	-4.30	-2.81	-4.41
0.60	0.65	-54.47	0.64	26.02	0.64	26.10	0.54	-59.87	-3.83	-3.76	-5.41	-2.29	-3.83
0.70	0.59	-59.60	0.67	20.38	0.68	20.66	0.49	-63.94	-3.42	-4.57	-6.20	-2.08	-3.41
0.80	0.54	-63.71	0.70	15.86	0.70	15.91	0.45	-67.27	-3.13	-5.29	-6.93	-1.96	-3.12
0.90	0.50	-67.33	0.71	11.62	0.72	11.72	0.42	-70.34	-2.92	-5.96	-7.60	-1.90	-2.90
1.00	0.47	-70.55	0.73	7.84	0.73	7.89	0.39	-72.99	-2.74	-6.59	-8.19	-1.84	-2.74
1.10	0.44	-73.29	0.74	4.38	0.74	4.45	0.36	-75.41	-2.61	-7.14	-8.76	-1.81	-2.62
1.20	0.41	-76.03	0.75	1.23	0.75	1.29	0.34	-77.25	-2.52	-7.69	-9.26	-1.82	-2.52
1.30	0.39	-78.05	0.76	-1.75	0.76	-1.68	0.33	-79.67	-2.44	-8.13	-9.76	-1.80	-2.43
1.40	0.37	-80.12	0.76	-4.60	0.76	-4.46	0.31	-81.50	-2.37	-8.58	-10.22	-1.79	-2.37
1.50	0.35	-82.11	0.77	-7.20	0.77	-7.11	0.29	-83.18	-2.32	-9.02	-10.64	-1.79	-2.32
1.60	0.34	-83.97	0.77	-9.75	0.77	-9.69	0.28	-84.90	-2.29	-9.43	-11.06	-1.80	-2.29
1.70	0.32	-85.68	0.77	-12.20	0.77	-12.14	0.27	-86.40	-2.25	-9.83	-11.45	-1.81	-2.25
1.80	0.31	-87.18	0.77	-14.54	0.77	-14.46	0.26	-87.76	-2.22	-10.20	-11.83	-1.82	-2.22
1.90	0.30	-88.76	0.78	-16.77	0.78	-16.70	0.25	-89.14	-2.20	-10.57	-12.20	-1.83	-2.20
2.00	0.28	-90.34	0.78	-19.03	0.78	-18.95	0.24	-90.46	-2.18	-10.91	-12.57	-1.83	-2.18
2.10	0.27	-91.58	0.78	-21.22	0.78	-21.10	0.23	-91.83	-2.16	-11.22	-12.94	-1.84	-2.16
2.20	0.26	-93.09	0.78	-23.30	0.78	-23.21	0.22	-93.13	-2.14	-11.54	-13.30	-1.84	-2.14
2.30	0.26	-94.30	0.78	-25.32	0.78	-25.30	0.21	-94.45	-2.13	-11.83	-13.66	-1.84	-2.13
2.40	0.25	-95.35	0.78	-27.37	0.78	-27.30	0.20	-95.83	-2.12	-12.12	-14.03	-1.85	-2.11
2.50	0.24	-96.47	0.78	-29.38	0.79	-29.31	0.19	-97.13	-2.10	-12.38	-14.41	-1.85	-2.10
2.60	0.23	-97.52	0.79	-31.37	0.79	-31.31	0.18	-98.47	-2.08	-12.68	-14.77	-1.85	-2.09
2.70	0.23	-98.55	0.79	-33.37	0.79	-33.24	0.17	-99.92	-2.08	-12.92	-15.18	-1.86	-2.08
2.80	0.22	-99.37	0.79	-35.33	0.79	-35.20	0.17	-101.38	-2.07	-13.21	-15.54	-1.87	-2.07
2.90	0.21	-100.29	0.79	-37.27	0.79	-37.18	0.16	-102.99	-2.07	-13.44	-15.93	-1.87	-2.07
3.00	0.21	-101.18	0.79	-39.19	0.79	-39.15	0.15	-104.48	-2.06	-13.69	-16.32	-1.88	-2.07
3.10	0.20	-102.33	0.79	-41.10	0.79	-41.04	0.15	-106.08	-2.05	-13.90	-16.70	-1.88	-2.06
3.20	0.20	-103.05	0.79	-42.97	0.79	-42.95	0.14	-107.85	-2.06	-14.13	-17.12	-1.89	-2.06
3.30	0.19	-104.01	0.79	-44.88	0.79	-44.87	0.13	-109.58	-2.05	-14.28	-17.46	-1.89	-2.06
3.40	0.19	-104.91	0.79	-46.79	0.79	-46.70	0.13	-111.44	-2.06	-14.50	-17.87	-1.90	-2.06
3.50	0.19	-106.06	0.79	-48.65	0.79	-48.58	0.12	-113.20	-2.05	-14.65	-18.21	-1.90	-2.05
3.60	0.18	-106.87	0.79	-50.53	0.79	-50.47	0.12	-115.39	-2.05	-14.79	-18.55	-1.90	-2.05
3.70	0.18	-108.36	0.79	-52.46	0.79	-52.35	0.11	-117.37	-2.06	-14.91	-18.86	-1.92	-2.06
3.80	0.18	-110.17	0.79	-54.39	0.79	-54.23	0.11	-119.70	-2.05	-15.02	-19.14	-1.92	-2.06
3.90	0.18	-111.63	0.79	-56.25	0.79	-56.10	0.11	-121.90	-2.06	-15.10	-19.39	-1.92	-2.06
4.00	0.17	-113.05	0.79	-58.12	0.79	-57.96	0.10	-124.49	-2.06	-15.14	-19.60	-1.92	-2.06
4.50	0.17	-123.17	0.79	-67.45	0.79	-67.33	0.10	-137.77	-2.10	-15.34	-20.05	-1.97	-2.10
5.00	0.18	-135.90	0.78	-76.77	0.78	-76.69	0.10	-149.97	-2.15	-15.13	-19.70	-2.01	-2.15
5.50	0.19	-148.92	0.78	-86.17	0.77	-86.08	0.12	-160.75	-2.21	-14.57	-18.74	-2.06	-2.22
6.00	0.16	-175.60	0.77	-95.29	0.77	-95.20	0.13	-177.71	-2.29	-15.76	-18.06	-2.18	-2.29
6.50	0.20	175.07	0.76	-104.79	0.76	-104.75	0.13	169.88	-2.39	-13.78	-17.77	-2.21	-2.39
7.00	0.23	170.79	0.75	-114.66	0.75	-114.56	0.13	160.27	-2.50	-12.79	-17.74	-2.27	-2.50
7.50	0.24	163.94	0.74	-124.81	0.74	-124.55	0.13	149.67	-2.63	-12.28	-17.45	-2.37	-2.63
8.00	0.25	154.48	0.73	-134.93	0.73	-134.82	0.14	136.63	-2.76	-12.03	-17.12	-2.48	-2.76
8.50	0.26	141.71	0.71	-145.75	0.71	-145.67	0.16	120.99	-2.93	-11.75	-16.17	-2.64	-2.93
9.00	0.27	125.21	0.70	-156.90	0.70	-156.82	0.19	104.30	-3.15	-11.26	-14.37	-2.82	-3.15

MGA-72543 Typical Scattering Parameters & Noise Parameters,

Tc = 25 C, Vd = 3.0 V, Id=5mA, Zo = 50 Ω, Vc= 0.7V (from s & noise parameters in ICM fix)

Freq	s11(m)	s11(a)	s21(m)	s21(a)	s12(m)	s12(a)	s22(m)	s22(a)	Ga	Input RL	Output R	GTUmax	Isolation
0.10	0.82	-8.59	4.01	173.58	0.05	19.30	0.60	-7.53	12.07	-1.68	-4.50	14.57	-26.15
0.50	0.78	-23.75	3.83	161.19	0.05	13.08	0.58	-15.49	11.67	-2.14	-4.76	13.94	-25.38
0.80	0.76	-34.10	3.70	150.93	0.06	15.47	0.56	-23.30	11.35	-2.37	-5.03	13.55	-24.84
0.90	0.75	-37.72	3.65	147.78	0.06	16.34	0.56	-25.65	11.25	-2.49	-5.04	13.38	-24.63
1.00	0.74	-41.27	3.61	144.72	0.06	17.04	0.56	-28.00	11.16	-2.63	-5.04	13.20	-24.41
1.10	0.73	-44.51	3.57	141.60	0.06	17.59	0.56	-30.37	11.05	-2.70	-5.08	13.06	-24.16
1.20	0.72	-48.07	3.52	138.60	0.06	18.05	0.56	-32.35	10.94	-2.83	-5.10	12.88	-23.92
1.30	0.72	-51.12	3.48	135.71	0.07	18.48	0.55	-35.10	10.84	-2.87	-5.16	12.77	-23.68
1.40	0.71	-54.39	3.45	132.80	0.07	18.61	0.55	-37.14	10.74	-2.97	-5.20	12.63	-23.44
1.50	0.70	-57.50	3.40	129.90	0.07	18.60	0.55	-39.35	10.63	-3.07	-5.23	12.47	-23.19
1.60	0.69	-60.74	3.36	126.97	0.07	18.50	0.54	-41.52	10.53	-3.17	-5.30	12.33	-22.96
1.70	0.69	-63.83	3.32	124.15	0.07	18.32	0.54	-43.56	10.43	-3.28	-5.35	12.19	-22.73
1.80	0.68	-66.78	3.29	121.38	0.07	18.13	0.54	-45.46	10.33	-3.38	-5.40	12.05	-22.52
1.90	0.67	-69.90	3.25	118.62	0.08	17.77	0.53	-47.44	10.23	-3.47	-5.47	11.92	-22.31
2.00	0.66	-73.07	3.22	115.85	0.08	17.37	0.53	-49.40	10.14	-3.59	-5.51	11.78	-22.10
2.10	0.66	-76.08	3.18	113.24	0.08	16.98	0.53	-51.27	10.05	-3.67	-5.58	11.66	-21.89
2.20	0.65	-79.19	3.15	110.55	0.08	16.46	0.52	-53.25	9.97	-3.78	-5.64	11.54	-21.69
2.30	0.64	-82.19	3.12	107.91	0.08	15.84	0.52	-55.13	9.87	-3.86	-5.72	11.43	-21.49
2.40	0.63	-85.19	3.08	105.32	0.09	15.37	0.51	-57.10	9.78	-3.95	-5.79	11.31	-21.31
2.50	0.63	-88.28	3.06	102.72	0.09	14.69	0.51	-59.09	9.70	-4.04	-5.88	11.20	-21.14
3.00	0.59	-103.21	2.92	89.83	0.10	10.86	0.48	-69.21	9.31	-4.54	-6.42	10.68	-20.34
3.50	0.56	-118.48	2.80	77.15	0.10	6.50	0.44	-79.84	8.93	-5.02	-7.06	10.20	-19.69
4.00	0.53	-138.16	2.65	61.97	0.11	0.71	0.40	-93.97	8.47	-5.53	-7.85	9.63	-19.06
4.50	0.51	-151.61	2.55	51.99	0.12	-3.25	0.38	-104.09	8.14	-5.80	-8.36	9.24	-18.70
5.00	0.50	-168.54	2.42	39.92	0.12	-8.72	0.36	-116.55	7.68	-6.02	-8.92	8.75	-18.34
5.50	0.49	176.28	2.30	28.25	0.12	-13.43	0.34	-128.66	7.23	-6.11	-9.28	8.29	-18.08
6.00	0.49	159.85	2.18	17.80	0.13	-17.16	0.32	-141.57	6.77	-6.12	-9.81	7.84	-17.82
6.50	0.50	147.62	2.07	6.65	0.13	-22.63	0.31	-153.96	6.32	-5.96	-10.13	7.45	-17.53
7.00	0.49	135.54	1.97	-4.46	0.14	-28.07	0.29	-165.33	5.91	-6.19	-10.65	6.99	-17.32
7.50	0.47	123.40	1.89	-15.33	0.14	-32.09	0.28	-175.97	5.54	-6.49	-11.18	6.55	-17.05
8.00	0.47	108.52	1.82	-26.09	0.15	-37.29	0.26	170.50	5.22	-6.47	-11.77	6.25	-16.55

Freq	Min NF	Gama(m)	Gama(a)	Rn		Gass	Gam RL	Rn(Ohm)		P-1dB	Out IP3	In IP3	
0.80	1.58	0.59	30.82	0.34		12.53	-4.60	17.21		3.4	13.0	3.0	
0.90	1.46	0.53	33.41	0.34		12.19	-5.47	16.84		3.3	12.9	3.2	
1.00	1.43	0.46	37.21	0.32		11.84	-6.74	16.09		3.2	12.8	3.3	
1.50	1.57	0.33	47.46	0.30		10.97	-9.67	14.94		3.2	12.4	3.4	
1.80	1.67	0.31	54.58	0.30		10.64	-10.17	14.78		3.2	11.9	3.5	
1.90	1.66	0.31	57.64	0.29		10.53	-10.31	14.35		3.3	11.8	3.5	
2.00	1.68	0.29	60.21	0.28		10.42	-10.62	14.04		3.2	12.7	3.5	
2.10	1.69	0.29	62.27	0.28		10.33	-10.62	13.96		3.3	12.7	3.5	
2.20	1.72	0.29	65.54	0.27		10.23	-10.90	13.64		3.3	12.8	3.5	
2.30	1.73	0.27	68.87	0.27		10.12	-11.23	13.30		3.4	12.8	3.7	
2.40	1.74	0.28	71.44	0.26		10.03	-11.13	13.12		3.4	12.9	3.8	
2.50	1.74	0.27	74.19	0.26		9.95	-11.22	12.83		3.5	12.9	3.9	
3.00	1.78	0.25	87.05	0.24		9.53	-11.95	11.81		3.4	12.9	4.1	
3.50	1.80	0.23	102.72	0.21		9.13	-12.60	10.44		3.3	13.0	4.1	
4.00	1.83	0.22	121.44	0.18		8.74	-13.10	9.14		3.1	13.3	4.2	
4.50	1.87	0.21	142.67	0.16		8.31	-13.41	8.06		2.4	13.6	4.5	
5.00	1.87	0.22	163.69	0.15		7.87	-13.12	7.28		2.3	14.0	4.8	
5.50	1.94	0.23	-178.90	0.14		7.45	-12.61	7.13		2.4	14.5	6.8	
6.00	1.94	0.26	-149.82	0.15		7.04	-11.76	7.67		2.0	14.2	7.5	

MGA-72543 Typical Scattering Parameters & Noise Parameters,

Tc = 25 C, Vd = 3.0 V, Id=10 mA, Zo = 50 Ω, Vc= 0.6 V (from s & noise parameters in ICM fix)

Freq	s11(m)	s11(a)	s21(m)	s21(a)	s12(m)	s12(a)	s22(m)	s22(a)	Ga	Input RL	Output R	GTUmax	Isolation
0.10	0.79	-9.79	5.30	173.08	0.05	18.64	0.49	-9.30	14.49	-2.06	-6.25	17.28	-26.86
0.50	0.74	-25.60	5.04	160.11	0.05	12.56	0.47	-16.51	14.04	-2.60	-6.58	16.48	-26.16
0.80	0.72	-36.50	4.84	149.51	0.05	15.13	0.45	-24.32	13.69	-2.87	-6.87	15.98	-25.67
0.90	0.71	-40.34	4.77	146.24	0.05	16.06	0.45	-26.71	13.57	-3.00	-6.89	15.78	-25.45
1.00	0.70	-44.10	4.71	143.05	0.05	16.72	0.45	-29.05	13.46	-3.15	-6.89	15.57	-25.25
1.10	0.69	-47.48	4.64	139.82	0.06	17.33	0.45	-31.43	13.33	-3.24	-6.93	15.40	-25.03
1.20	0.68	-51.23	4.58	136.73	0.06	17.79	0.45	-33.38	13.21	-3.38	-6.96	15.19	-24.80
1.30	0.67	-54.42	4.51	133.71	0.06	18.34	0.45	-36.17	13.09	-3.44	-7.02	15.05	-24.56
1.40	0.66	-57.85	4.45	130.70	0.06	18.54	0.44	-38.18	12.97	-3.55	-7.07	14.87	-24.34
1.50	0.66	-61.11	4.39	127.68	0.06	18.63	0.44	-40.36	12.84	-3.67	-7.11	14.69	-24.12
1.60	0.65	-64.50	4.33	124.71	0.06	18.57	0.44	-42.47	12.73	-3.79	-7.19	14.52	-23.89
1.70	0.64	-67.72	4.27	121.82	0.07	18.52	0.43	-44.43	12.60	-3.91	-7.25	14.34	-23.68
1.80	0.63	-70.83	4.21	118.95	0.07	18.35	0.43	-46.25	12.48	-4.03	-7.32	14.16	-23.48
1.90	0.62	-74.08	4.15	116.12	0.07	18.15	0.43	-48.17	12.36	-4.16	-7.39	14.00	-23.28
2.00	0.61	-77.35	4.10	113.33	0.07	17.89	0.42	-49.99	12.25	-4.28	-7.45	13.83	-23.08
2.10	0.60	-80.50	4.04	110.65	0.07	17.55	0.42	-51.79	12.12	-4.38	-7.53	13.68	-22.90
2.20	0.59	-83.77	3.99	107.90	0.07	17.14	0.42	-53.65	12.02	-4.51	-7.61	13.52	-22.70
2.30	0.59	-86.85	3.94	105.22	0.07	16.67	0.41	-55.42	11.91	-4.61	-7.70	13.38	-22.53
2.40	0.58	-89.93	3.89	102.61	0.08	16.33	0.41	-57.28	11.80	-4.72	-7.79	13.23	-22.37
2.50	0.57	-93.12	3.84	99.99	0.08	15.82	0.40	-59.16	11.68	-4.83	-7.88	13.08	-22.19
3.00	0.54	-108.42	3.62	87.06	0.08	12.85	0.37	-68.67	11.16	-5.41	-8.55	12.40	-21.45
3.50	0.50	-124.12	3.42	74.50	0.09	9.42	0.34	-78.71	10.68	-5.97	-9.31	11.78	-20.84
4.00	0.48	-140.76	3.23	62.07	0.10	5.65	0.31	-90.28	10.19	-6.41	-10.11	11.20	-20.30
4.50	0.46	-157.67	3.05	50.02	0.10	1.75	0.29	-102.71	9.70	-6.76	-10.84	10.63	-19.81
5.00	0.45	-174.61	2.88	38.33	0.11	-2.64	0.27	-115.35	9.17	-6.94	-11.46	10.08	-19.38
5.50	0.45	170.46	2.72	27.02	0.11	-6.43	0.26	-127.77	8.68	-6.99	-11.78	9.58	-19.02
6.00	0.45	154.18	2.57	16.71	0.12	-9.65	0.24	-141.14	8.19	-6.90	-12.27	9.11	-18.62
6.50	0.46	142.43	2.43	5.86	0.12	-14.49	0.24	-153.91	7.71	-6.70	-12.52	8.69	-18.20
7.00	0.45	130.78	2.31	-4.97	0.13	-19.19	0.22	-165.37	7.27	-6.92	-13.04	8.20	-17.86
7.50	0.44	119.07	2.21	-15.50	0.14	-22.89	0.21	-176.07	6.87	-7.20	-13.54	7.75	-17.39
8.00	0.44	104.55	2.12	-26.00	0.15	-28.20	0.20	169.13	6.55	-7.10	-14.02	7.45	-16.72

Freq	Min NF	Gama(m)	Gama(a)	Rn		Gass	Gam RL	Rn(Ohm)		P-1dB	Out IP3	In IP3	
0.80	1.33	0.45	36.90	0.23		14.45	-6.96	11.52		9.3	17.9	4.1	
0.90	1.33	0.43	37.41	0.24		14.27	-7.27	11.84		9.3	17.8	4.2	
1.00	1.34	0.38	41.68	0.24		14.00	-8.30	12.25		9.3	17.7	4.3	
1.50	1.41	0.27	51.46	0.24		13.10	-11.42	11.94		8.8	17.5	5.0	
1.80	1.44	0.25	55.89	0.23		12.71	-11.95	11.35		8.5	17.4	5.1	
1.90	1.45	0.25	59.89	0.22		12.58	-12.21	11.02		8.4	17.2	5.2	
2.00	1.47	0.24	62.17	0.22		12.45	-12.58	10.85		8.3	17.3	5.2	
2.10	1.47	0.23	65.54	0.21		12.32	-12.66	10.67		8.3	17.5	4.5	
2.20	1.49	0.23	68.31	0.21		12.21	-12.83	10.55		8.3	17.6	4.8	
2.30	1.52	0.22	71.46	0.21		12.08	-13.27	10.26		8.4	17.7	5.0	
2.40	1.51	0.22	73.68	0.20		11.98	-13.10	10.23		8.4	17.8	5.4	
2.50	1.50	0.22	77.60	0.20		11.86	-13.21	10.02		8.5	17.9	5.6	
3.00	1.55	0.20	91.74	0.19		11.32	-13.98	9.33		8.7	18.1	6.1	
3.50	1.56	0.18	109.55	0.17		10.81	-14.79	8.31		8.8	18.3	6.8	
4.00	1.58	0.17	130.76	0.15		10.31	-15.24	7.46		9.0	19.1	7.9	
4.50	1.60	0.17	153.77	0.14		9.82	-15.23	6.92		9.3	19.4	8.7	
5.00	1.62	0.19	176.68	0.13		9.32	-14.59	6.51		9.6	19.8	9.1	
5.50	1.68	0.21	-166.81	0.13		8.86	-13.61	6.58		10.0	20.2	11.0	
6.00	1.67	0.25	-136.00	0.15		8.45	-11.99	7.33		9.8	19.8	11.6	

MGA-72543 Typical Scattering Parameters & Noise Parameters,

Tc = 25 C, Vd = 3.0 V, Id=20 mA, Zo = 50 Ω, Vc= 0.5 V (from s & noise parameters in ICM fix)

0.10	0.76	-10.70	6.35	172.66	0.04	18.12	0.40	-11.11	16.06	-2.37	-7.95	18.95	-27.52
0.50	0.71	-27.03	6.00	159.20	0.05	12.16	0.38	-17.13	15.56	-2.97	-8.36	18.01	-26.91
0.80	0.69	-38.32	5.74	148.33	0.05	14.98	0.37	-24.67	15.18	-3.28	-8.66	17.44	-26.46
0.90	0.67	-42.33	5.65	144.96	0.05	16.03	0.37	-26.95	15.04	-3.43	-8.67	17.21	-26.27
1.00	0.66	-46.23	5.57	141.69	0.05	16.80	0.37	-29.27	14.92	-3.58	-8.67	16.98	-26.07
1.10	0.65	-49.74	5.48	138.38	0.05	17.52	0.37	-31.54	14.78	-3.69	-8.71	16.79	-25.85
1.20	0.64	-53.60	5.39	135.19	0.05	18.22	0.37	-33.46	14.64	-3.84	-8.74	16.56	-25.63
1.30	0.64	-56.95	5.32	132.07	0.05	18.73	0.36	-36.21	14.51	-3.91	-8.80	16.40	-25.41
1.40	0.63	-60.46	5.23	129.01	0.05	19.08	0.36	-38.08	14.37	-4.03	-8.85	16.20	-25.19
1.50	0.62	-63.83	5.15	125.93	0.06	19.38	0.36	-40.18	14.23	-4.16	-8.89	15.99	-24.98
1.60	0.61	-67.33	5.06	122.88	0.06	19.47	0.36	-42.14	14.09	-4.31	-8.98	15.79	-24.77
1.70	0.60	-70.72	4.98	119.93	0.06	19.59	0.35	-43.99	13.95	-4.45	-9.04	15.59	-24.55
1.80	0.59	-73.90	4.90	117.03	0.06	19.60	0.35	-45.60	13.81	-4.59	-9.11	15.39	-24.36
1.90	0.58	-77.21	4.83	114.17	0.06	19.57	0.35	-47.37	13.67	-4.72	-9.18	15.20	-24.16
2.00	0.57	-80.64	4.75	111.34	0.06	19.34	0.34	-49.05	13.54	-4.87	-9.25	15.01	-23.96
2.10	0.56	-83.81	4.68	108.63	0.06	19.24	0.34	-50.64	13.40	-4.98	-9.33	14.84	-23.77
2.20	0.55	-87.14	4.61	105.87	0.07	19.04	0.34	-52.41	13.28	-5.12	-9.41	14.66	-23.60
2.30	0.55	-90.31	4.54	103.17	0.07	18.77	0.33	-54.00	13.15	-5.24	-9.52	14.49	-23.41
2.40	0.54	-93.40	4.48	100.52	0.07	18.47	0.33	-55.72	13.02	-5.35	-9.60	14.33	-23.23
2.50	0.53	-96.64	4.41	97.88	0.07	18.13	0.33	-57.40	12.89	-5.48	-9.72	14.16	-23.06
3.00	0.49	-112.20	4.11	85.03	0.08	15.81	0.30	-66.08	12.28	-6.15	-10.45	13.37	-22.29
3.50	0.46	-128.18	3.85	72.66	0.08	13.11	0.27	-75.20	11.71	-6.74	-11.30	12.66	-21.61
4.00	0.44	-144.94	3.61	60.45	0.09	9.88	0.25	-86.25	11.16	-7.21	-12.21	12.01	-20.99
4.50	0.42	-162.03	3.39	48.72	0.10	6.44	0.22	-98.49	10.61	-7.55	-13.06	11.40	-20.42
5.00	0.41	-178.91	3.18	37.35	0.10	2.32	0.21	-111.34	10.05	-7.68	-13.76	10.82	-19.90
5.50	0.41	166.35	2.99	26.35	0.11	-1.32	0.20	-123.99	9.53	-7.71	-14.08	10.30	-19.45
6.00	0.42	150.07	2.83	16.16	0.11	-4.74	0.19	-137.66	9.02	-7.56	-14.56	9.83	-18.97
6.50	0.43	138.89	2.67	5.55	0.12	-9.53	0.18	-150.75	8.54	-7.33	-14.81	9.39	-18.47
7.00	0.42	127.48	2.53	-5.00	0.12	-14.18	0.17	-161.80	8.08	-7.56	-15.38	8.89	-18.07
7.50	0.41	116.21	2.42	-15.24	0.13	-17.97	0.16	-171.96	7.68	-7.81	-15.86	8.44	-17.54
8.00	0.41	102.04	2.33	-25.55	0.14	-23.39	0.15	172.17	7.34	-7.69	-16.35	8.13	-16.85

Freq	Min NF	Gama(m)	Gama(a)	Rn		Gass	Gam RL	Rn(Ohm)		P-1dB	Out IP3	In IP3	
0.80	1.30	0.37	38.95	0.25		15.72	-8.63	12.41		11.8	23.9	8.8	
0.90	1.31	0.35	39.94	0.25		15.53	-9.11	12.47		11.7	23.9	9.0	
1.00	1.32	0.35	40.79	0.22		15.39	-9.18	11.01		11.7	23.9	9.1	
1.50	1.35	0.27	51.35	0.21		14.51	-11.47	10.50		11.6	24.0	9.7	
1.80	1.38	0.22	58.47	0.20		14.00	-13.11	10.06		11.5	24.0	10.0	
1.90	1.37	0.22	60.66	0.20		13.85	-13.33	9.90		11.6	24.0	10.1	
2.00	1.39	0.21	64.87	0.19		13.71	-13.73	9.71		11.6	24.0	10.2	
2.10	1.40	0.20	69.67	0.19		13.57	-13.85	9.48		11.6	24.1	10.3	
2.20	1.41	0.20	71.32	0.19		13.44	-13.85	9.47		11.7	24.3	10.4	
2.30	1.40	0.20	74.35	0.19		13.30	-13.94	9.26		11.7	24.4	10.5	
2.40	1.43	0.20	77.66	0.18		13.17	-14.17	9.13		11.8	24.3	10.6	
2.50	1.43	0.20	81.44	0.18		13.04	-14.19	8.95		11.8	24.4	10.7	
3.00	1.45	0.18	95.48	0.17		12.40	-15.12	8.45		11.9	24.7	11.2	
3.50	1.47	0.16	116.67	0.15		11.82	-15.77	7.52		12.0	24.6	11.8	
4.00	1.47	0.16	139.11	0.14		11.26	-16.13	6.86		12.1	24.5	12.6	
4.50	1.51	0.16	163.18	0.13		10.71	-15.96	6.47		12.3	24.6	14.3	
5.00	1.54	0.18	-175.40	0.12		10.19	-14.85	6.20		12.4	24.8	15.0	
5.50	1.60	0.20	-159.53	0.13		9.71	-13.81	6.34		12.5	24.9	15.5	
6.00	1.67	0.27	-128.95	0.14		9.33	-11.47	7.13		12.6	25.0	15.7	

MGA-72543 Typical Scattering Parameters & Noise Parameters,

Tc = 25 C, Vd = 3.0 V, Id=40 mA, Zo = 50 Ω, Vc= 0.3 V (from s & noise parameters in ICM fix)

Freq	s11(m)	s11(a)	s21(m)	s21(a)	s12(m)	s12(a)	s22(m)	s22(a)	Ga	Input RL	Output R	GTUmax	Isolation
0.10	0.75	-10.86	6.84	172.54	0.04	17.30	0.36	-11.71	16.70	-2.45	-8.90	19.66	-28.08
0.50	0.70	-27.61	6.45	158.81	0.04	11.48	0.34	-16.59	16.18	-3.06	-9.33	18.67	-27.58
0.80	0.68	-39.11	6.15	147.81	0.04	14.41	0.33	-23.55	15.78	-3.39	-9.62	18.06	-27.20
0.90	0.67	-43.18	6.05	144.37	0.04	15.49	0.33	-25.67	15.64	-3.54	-9.62	17.82	-27.03
1.00	0.65	-47.15	5.96	141.06	0.05	16.34	0.33	-27.78	15.51	-3.71	-9.61	17.58	-26.86
1.10	0.64	-50.75	5.87	137.71	0.05	17.25	0.33	-29.92	15.37	-3.81	-9.64	17.37	-26.67
1.20	0.63	-54.69	5.77	134.49	0.05	18.07	0.33	-31.63	15.22	-3.97	-9.66	17.14	-26.46
1.30	0.63	-58.09	5.68	131.34	0.05	18.67	0.33	-34.27	15.08	-4.05	-9.71	16.97	-26.25
1.40	0.62	-61.71	5.58	128.24	0.05	19.20	0.33	-35.95	14.94	-4.18	-9.75	16.75	-26.06
1.50	0.61	-65.13	5.49	125.13	0.05	19.59	0.32	-37.84	14.79	-4.32	-9.78	16.54	-25.86
1.60	0.60	-68.66	5.40	122.06	0.05	19.91	0.32	-39.66	14.64	-4.46	-9.86	16.33	-25.64
1.70	0.59	-72.08	5.31	119.08	0.05	20.16	0.32	-41.29	14.50	-4.61	-9.92	16.11	-25.43
1.80	0.58	-75.30	5.22	116.17	0.05	20.38	0.32	-42.74	14.35	-4.75	-9.97	15.90	-25.24
1.90	0.57	-78.65	5.13	113.28	0.06	20.44	0.32	-44.34	14.20	-4.90	-10.03	15.70	-25.05
2.00	0.56	-82.09	5.05	110.44	0.06	20.50	0.31	-45.80	14.06	-5.05	-10.09	15.50	-24.85
2.10	0.55	-85.33	4.96	107.69	0.06	20.59	0.31	-47.20	13.91	-5.16	-10.15	15.31	-24.66
2.20	0.54	-88.73	4.89	104.94	0.06	20.49	0.31	-48.78	13.78	-5.32	-10.23	15.12	-24.49
2.30	0.53	-91.93	4.81	102.23	0.06	20.36	0.31	-50.15	13.64	-5.45	-10.31	14.94	-24.29
2.40	0.53	-95.07	4.74	99.59	0.06	20.13	0.30	-51.71	13.51	-5.57	-10.39	14.77	-24.11
2.50	0.52	-98.35	4.66	96.97	0.06	19.97	0.30	-53.21	13.36	-5.70	-10.49	14.58	-23.93
3.00	0.48	-113.98	4.32	84.12	0.07	18.46	0.28	-60.80	12.72	-6.38	-11.17	13.76	-23.13
3.50	0.45	-130.01	4.03	71.86	0.08	16.37	0.25	-68.81	12.11	-7.01	-11.97	13.01	-22.41
4.00	0.42	-146.87	3.77	59.84	0.08	13.67	0.23	-78.78	11.53	-7.48	-12.85	12.34	-21.73
4.50	0.41	-163.88	3.53	48.24	0.09	10.57	0.21	-90.16	10.96	-7.81	-13.70	11.71	-21.08
5.00	0.40	179.18	3.31	37.04	0.09	6.80	0.19	-102.10	10.39	-7.93	-14.43	11.12	-20.49
5.50	0.40	164.67	3.11	26.16	0.10	3.33	0.18	-114.30	9.87	-7.93	-14.73	10.60	-19.97
6.00	0.41	148.39	2.93	16.01	0.11	-0.09	0.17	-127.41	9.34	-7.79	-15.26	10.11	-19.44
6.50	0.42	137.29	2.77	5.54	0.11	-4.82	0.17	-139.82	8.86	-7.54	-15.52	9.68	-18.89
7.00	0.41	126.24	2.63	-4.91	0.12	-9.36	0.16	-149.62	8.40	-7.76	-16.05	9.18	-18.42
7.50	0.40	115.06	2.51	-14.98	0.13	-13.08	0.15	-158.34	8.01	-8.04	-16.48	8.73	-17.84
8.00	0.40	101.12	2.42	-25.16	0.14	-18.45	0.14	-173.31	7.68	-7.89	-17.10	8.44	-17.10

Freq	Min NF	Gama(m)	Gama(a)	Rn		Gass	Gam RL	Rn(Ohm)		P-1dB	Out IP3	In IP3	
0.80	1.29	0.40	36.47	0.27		16.44	-8.03	13.30		15.2	26.0	10.6	
0.90	1.26	0.38	37.41	0.27		16.25	-8.34	13.34		15.1	26.0	10.8	
1.00	1.22	0.35	40.78	0.27		16.02	-9.06	13.40		15.1	25.9	11.0	
1.50	1.40	0.29	53.46	0.27		15.13	-10.79	13.44		14.8	26.2	11.8	
1.80	1.49	0.26	61.22	0.23		14.62	-11.65	11.72		14.8	26.1	11.8	
1.90	1.50	0.26	64.44	0.23		14.46	-11.87	11.41		14.8	26.1	11.9	
2.00	1.52	0.24	67.95	0.22		14.30	-12.27	11.20		14.9	26.0	12.0	
2.10	1.52	0.25	71.56	0.22		14.16	-12.16	10.92		14.9	26.2	12.4	
2.20	1.53	0.24	74.59	0.22		14.01	-12.35	10.80		15.0	26.3	12.7	
2.30	1.53	0.23	77.96	0.21		13.86	-12.59	10.52		15.0	26.4	13.0	
2.40	1.55	0.23	81.11	0.21		13.73	-12.60	10.33		15.1	26.5	13.2	
2.50	1.55	0.24	84.65	0.20		13.59	-12.57	10.15		15.1	26.7	13.4	
3.00	1.59	0.22	100.13	0.18		12.91	-13.32	9.18		15.2	26.9	14.1	
3.50	1.60	0.20	119.95	0.16		12.29	-13.81	8.07		15.3	27.0	14.8	
4.00	1.64	0.20	141.51	0.14		11.71	-13.86	7.11		15.6	27.3	15.7	
4.50	1.68	0.21	163.29	0.13		11.15	-13.63	6.57		15.5	27.5	16.5	
5.00	1.71	0.23	-175.02	0.13		10.61	-12.87	6.35		15.2	27.7	16.7	
5.50	1.78	0.25	-159.47	0.13		10.15	-11.91	6.54		16.0	28.1	17.7	
6.00	1.74	0.31	-132.75	0.15		9.76	-10.27	7.69		15.5	27.9	18.4	

MGA-72543 Typical Scattering Parameters & Noise Parameters,

Tc = 25 C, Vd = 3.0 V, Id=60 mA, Zo = 50 Ω, Vc= 0.1 V (from s & noise parameters in ICM fix)

Freq	s11(m)	s11(a)	s21(m)	s21(a)	s12(m)	s12(a)	s22(m)	s22(a)	Ga	Input RL	Output R	GTUmax	Isolation
0.10	0.77	-10.35	6.38	172.66	0.04	16.77	0.37	-10.58	16.10	-2.27	-8.52	19.20	-28.19
0.50	0.72	-27.40	6.01	158.97	0.04	10.46	0.36	-15.59	15.58	-2.87	-8.90	18.18	-27.78
0.80	0.69	-38.88	5.75	148.07	0.04	13.17	0.35	-22.24	15.19	-3.18	-9.17	17.58	-27.46
0.90	0.68	-42.93	5.66	144.67	0.04	14.30	0.35	-24.26	15.05	-3.32	-9.16	17.34	-27.31
1.00	0.67	-46.90	5.58	141.36	0.04	15.19	0.35	-26.26	14.93	-3.48	-9.15	17.10	-27.16
1.10	0.66	-50.52	5.49	138.04	0.04	16.00	0.35	-28.30	14.79	-3.58	-9.17	16.91	-26.99
1.20	0.65	-54.48	5.40	134.82	0.05	16.85	0.35	-29.95	14.65	-3.72	-9.19	16.68	-26.81
1.30	0.65	-57.89	5.32	131.69	0.05	17.50	0.35	-32.46	14.52	-3.79	-9.23	16.51	-26.63
1.40	0.64	-61.51	5.23	128.58	0.05	17.99	0.34	-34.06	14.37	-3.92	-9.27	16.30	-26.46
1.50	0.63	-64.96	5.15	125.48	0.05	18.51	0.34	-35.89	14.24	-4.04	-9.29	16.09	-26.25
1.60	0.62	-68.53	5.07	122.43	0.05	18.84	0.34	-37.63	14.10	-4.18	-9.36	15.89	-26.06
1.70	0.61	-71.96	4.98	119.44	0.05	19.12	0.34	-39.19	13.95	-4.32	-9.40	15.68	-25.88
1.80	0.60	-75.24	4.90	116.52	0.05	19.35	0.34	-40.60	13.81	-4.45	-9.44	15.47	-25.70
1.90	0.59	-78.63	4.82	113.63	0.05	19.50	0.34	-42.14	13.67	-4.60	-9.49	15.27	-25.53
2.00	0.58	-82.08	4.75	110.79	0.05	19.57	0.33	-43.55	13.53	-4.74	-9.54	15.07	-25.33
2.10	0.57	-85.35	4.67	108.04	0.06	19.65	0.33	-44.91	13.39	-4.85	-9.59	14.88	-25.16
2.20	0.56	-88.77	4.60	105.29	0.06	19.65	0.33	-46.43	13.26	-5.00	-9.65	14.70	-25.00
2.30	0.55	-92.02	4.53	102.56	0.06	19.65	0.33	-47.76	13.13	-5.12	-9.72	14.52	-24.83
2.40	0.55	-95.21	4.47	99.92	0.06	19.59	0.32	-49.27	13.00	-5.23	-9.79	14.36	-24.66
2.50	0.54	-98.48	4.39	97.28	0.06	19.49	0.32	-50.68	12.86	-5.35	-9.87	14.17	-24.49
3.00	0.50	-114.27	4.09	84.36	0.07	18.32	0.30	-58.04	12.23	-6.00	-10.46	13.36	-23.73
3.50	0.47	-130.38	3.83	72.04	0.07	16.78	0.28	-65.69	11.65	-6.61	-11.14	12.63	-23.05
4.00	0.44	-147.25	3.59	59.89	0.08	14.70	0.25	-75.09	11.09	-7.04	-11.89	11.98	-22.39
4.50	0.43	-164.24	3.36	48.18	0.08	12.13	0.23	-85.69	10.53	-7.35	-12.60	11.36	-21.75
5.00	0.42	178.95	3.15	36.84	0.09	8.87	0.22	-96.78	9.97	-7.47	-13.22	10.79	-21.15
5.50	0.42	164.45	2.97	25.86	0.09	5.96	0.21	-108.24	9.46	-7.47	-13.47	10.27	-20.59
6.00	0.43	148.18	2.80	15.63	0.10	3.17	0.20	-120.56	8.93	-7.32	-13.96	9.78	-20.03
6.50	0.44	137.03	2.65	5.05	0.11	-1.17	0.20	-132.14	8.46	-7.08	-14.17	9.36	-19.43
7.00	0.43	125.89	2.51	-5.53	0.11	-5.38	0.19	-141.12	8.01	-7.31	-14.56	8.86	-18.91
7.50	0.42	114.64	2.40	-15.72	0.12	-8.83	0.18	-149.45	7.62	-7.57	-14.85	8.42	-18.24
8.00	0.42	100.78	2.32	-25.96	0.13	-14.03	0.17	-162.41	7.30	-7.44	-15.42	8.13	-17.41

Freq	Min NF	Gama(m)	Gama(a)	Rn		Gass	Gam RL	Rn(Ohm)		P-1dB	Out IP3	In IP3	
0.80	1.61	0.43	35.88	0.41		15.94	-7.42	20.58		17.0	28.0	13.3	
0.90	1.46	0.43	37.41	0.44		15.83	-7.27	21.84		17.0	28.2	13.5	
1.00	1.51	0.46	39.78	0.39		15.80	-6.81	19.69		16.9	28.4	13.6	
1.50	1.70	0.39	53.46	0.87		14.86	-8.21	43.44		16.7	28.5	14.1	
1.80	1.81	0.35	63.59	0.33		14.30	-9.20	16.67		16.9	27.7	14.2	
1.90	1.83	0.34	67.09	0.32		14.13	-9.47	16.16		16.8	27.9	14.3	
2.00	1.85	0.33	70.71	0.31		13.97	-9.65	15.72		17.1	27.8	14.8	
2.10	1.85	0.33	74.36	0.31		13.82	-9.69	15.27		17.0	28.1	15.0	
2.20	1.86	0.32	77.37	0.30		13.68	-9.82	14.96		17.1	28.2	15.3	
2.30	1.88	0.32	81.11	0.29		13.53	-9.99	14.39		17.1	28.4	15.5	
2.40	1.89	0.32	83.96	0.28		13.41	-9.98	14.13		17.2	28.6	15.6	
2.50	1.90	0.31	87.17	0.27		13.26	-10.10	13.72		17.2	28.8	15.9	
3.00	1.95	0.30	103.01	0.24		12.60	-10.54	12.01		17.5	28.4	16.3	
3.50	1.99	0.29	122.08	0.20		12.00	-10.75	9.93		17.3	28.8	16.9	
4.00	2.02	0.29	142.68	0.16		11.44	-10.79	8.23		17.5	28.7	17.5	
4.50	2.09	0.30	162.85	0.14		10.91	-10.60	7.18		17.8	29.2	18.6	
5.00	2.13	0.32	-177.58	0.13		10.40	-10.03	6.74		17.5	29.0	18.8	
5.50	2.23	0.34	-161.28	0.14		9.97	-9.38	7.18		16.7	28.0	18.5	
6.00	2.23	0.38	-138.49	0.18		9.58	-8.43	9.17		16.0	29.0	19.9	

MGA-72543 Typical Scattering Parameters

(LNA/SWT POWERED OFF)

Tc = 25 C, Vd = 0.0 V, Zo = 50 Ω, Id= 0 mA

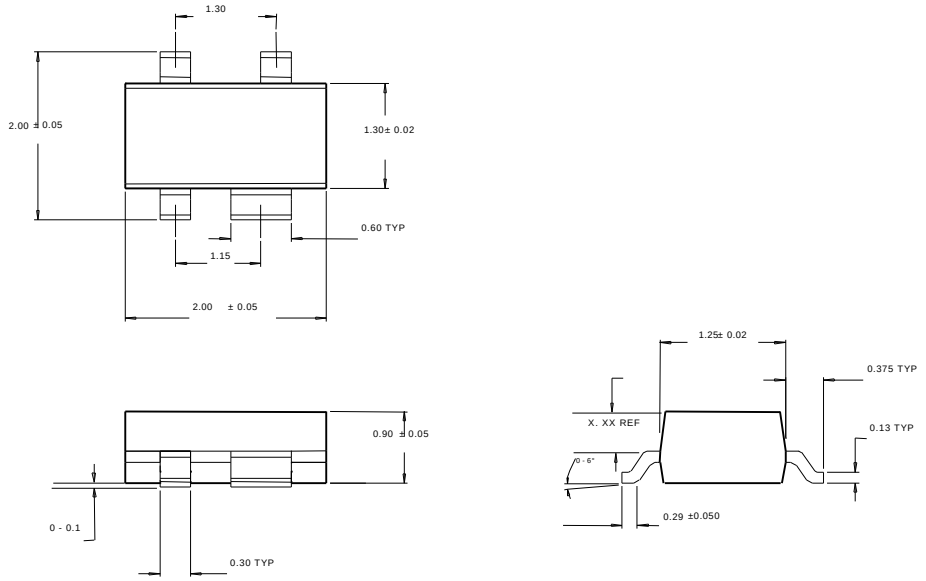
Freq	s11(m)	s11(a)	s21(m)	s21(a)	s12(m)	s12(a)	s22(m)	s22(a)	Gain	INRL	OUTRL
0.8	0.8	-88	0.097	50	0.097	50	0.81	167	-20.26	-1.94	-1.83
1.2	0.75	-117	0.122	39	0.122	39	0.81	160	-18.27	-2.50	-1.83
1.6	0.71	-139	0.141	31	0.141	31	0.8	152	-17.02	-2.97	-1.94
2	0.69	-157	0.157	25	0.157	25	0.8	145	-16.08	-3.22	-1.94
2.4	0.66	-174	0.171	18	0.171	18	0.8	137	-15.34	-3.61	-1.94
2.8	0.65	171	0.184	12	0.184	12	0.8	129	-14.70	-3.74	-1.94
3.2	0.64	157	0.195	6	0.195	6	0.81	122	-14.20	-3.88	-1.83
3.6	0.64	144	0.204	0	0.204	0	0.8	115	-13.81	-3.88	-1.94
4	0.63	132	0.211	-5	0.211	-5	0.8	108	-13.51	-4.01	-1.94
4.4	0.63	121	0.216	-11	0.216	-11	0.81	102	-13.31	-4.01	-1.83
4.8	0.63	112	0.218	-15	0.218	-15	0.81	95	-13.23	-4.01	-1.83
5.2	0.64	103	0.224	-20	0.224	-20	0.82	89	-13.00	-3.88	-1.72
5.6	0.64	94	0.227	-26	0.227	-26	0.82	83	-12.88	-3.88	-1.72
6	0.64	86	0.229	-31	0.229	-31	0.82	76	-12.80	-3.88	-1.72

Part Number Ordering Information

Part Number	No. of Devices	Container
MGA-72543-TR1	3000	7” Reel
MGA-72543-TR2	10000	13” Reel
MGA-72543-BLK	100	antistatic bag

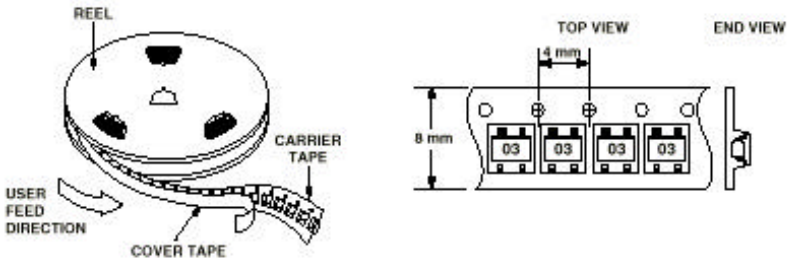
Package Dimensions

Outline 43
SOT-343 (SC70 4 lead)



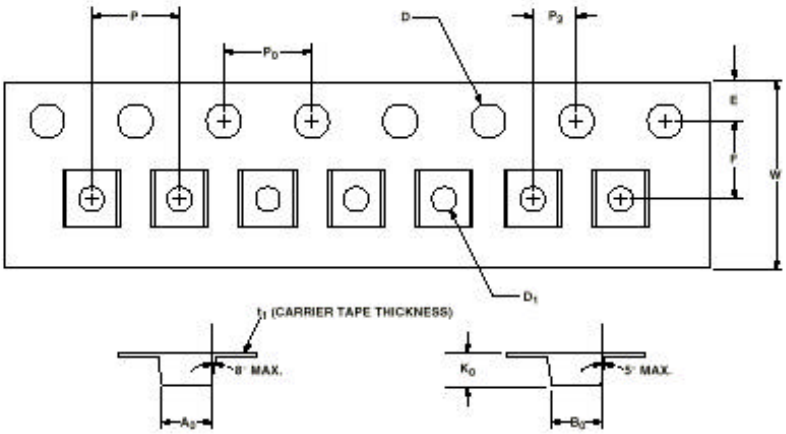
DIMENSIONS ARE IN MILLIMETERS (INCHES)

Device Orientation



Tape Dimensions

For Outline 4T



DESCRIPTION		SYMBOL	SIZE (mm)	SIZE (INCHES)
CAVITY	LENGTH	A_0	2.24 ± 0.10	0.088 ± 0.004
	WIDTH	B_0	2.34 ± 0.10	0.092 ± 0.004
	DEPTH	K_0	1.22 ± 0.10	0.048 ± 0.004
	PITCH	P	4.00 ± 0.10	0.157 ± 0.004
	BOTTOM HOLE DIAMETER	D_1	1.00 + 0.25	0.039 + 0.010
PERFORATION	DIAMETER	D	1.55 ± 0.05	0.061 ± 0.002
	PITCH	P_0	4.00 ± 0.10	0.157 ± 0.004
	POSITION	E	1.75 ± 0.10	0.069 ± 0.004
CARRIER TAPE	WIDTH	W	8.00 ± 0.30	0.315 ± 0.012
	THICKNESS	t_1	0.255 ± 0.013	0.010 ± 0.0005
DISTANCE	CAVITY TO PERFORATION (WIDTH DIRECTION)	F	3.50 ± 0.05	0.138 ± 0.002
	CAVITY TO PERFORATION (LENGTH DIRECTION)	P_2	2.00 ± 0.05	0.079 ± 0.002

for more information:
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Ask for a components representative.

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