

MPA Series

150-450MHz 4W RF Power Amplifier

Features

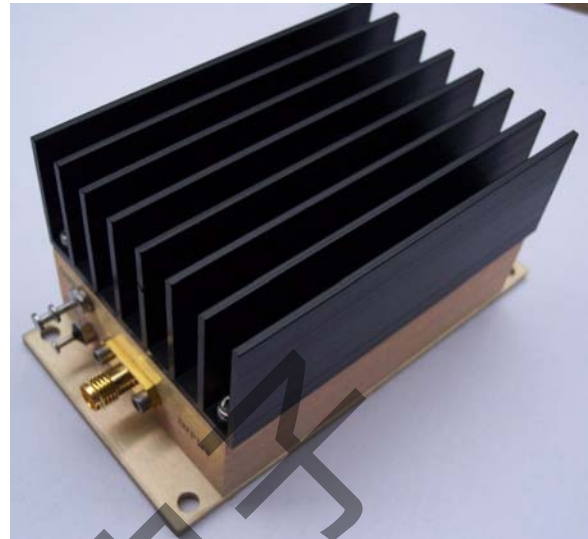
- Frequency Range: 150-450MHz
- Gain: 21dB
- P_{out}: +36dBm
- IP3: +45dBm
- Noise Figure: 8dB
- DC Power: 24V
- SMA Connector

Performance measured @ 300MHz

Description

MPA-300 is a 4 Watt (+36dBm) output RF Power Amplifier operating from single 24V DC power supply with frequency from 150MHz to 450MHz.

Picture



Electrical Specifications @ +25 °C, Z_s = Z_L = 50 Ohms, V_{cc} = 24V

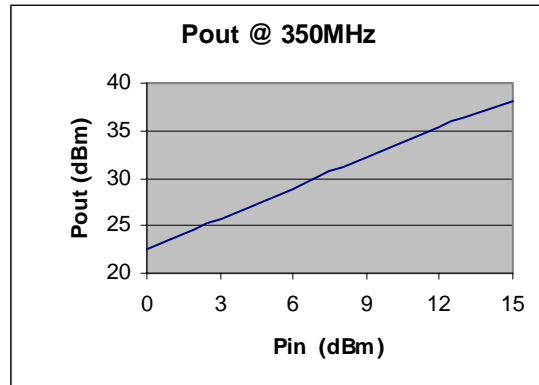
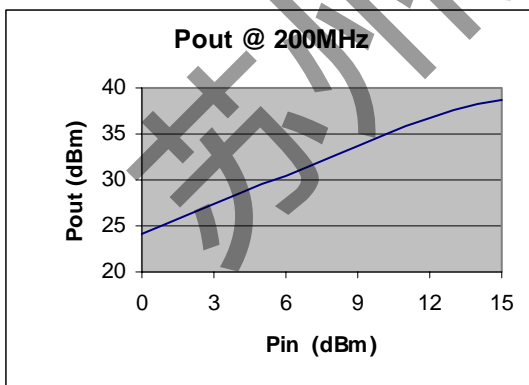
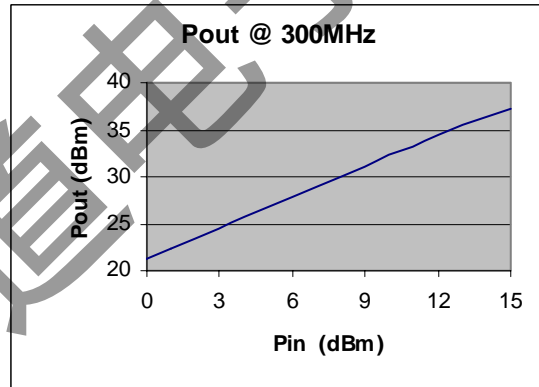
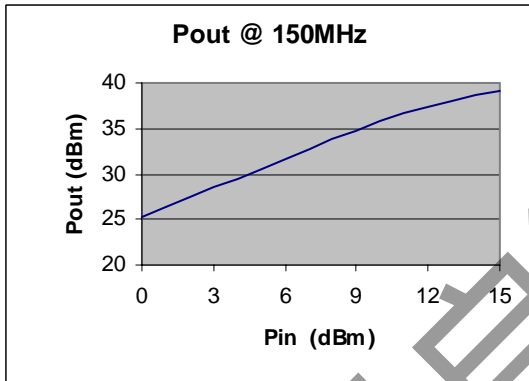
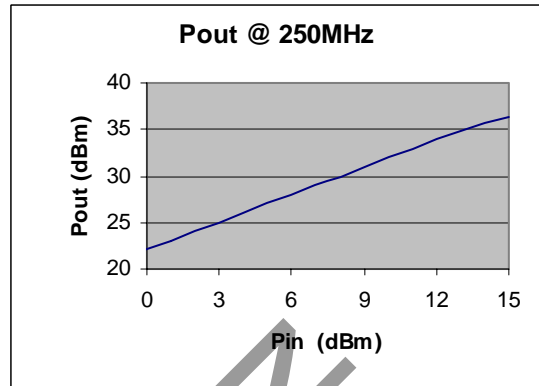
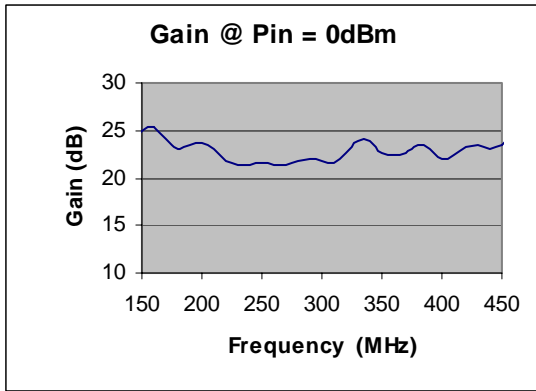
Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	MHz	150		450
Small Signal Gain	f = 150MHz	dB	25	
	f = 300MHz	dB	21	
	f = 450MHz	dB	23	
Output Power P _{out}	dBm		+36	
IP3	dBm		+45	
Reverse Isolation	dB		-23	
Noise Figure	dB		8	
Efficiency	%		33	
DC Power Supply	V		24	
Supply Current	mA		500	



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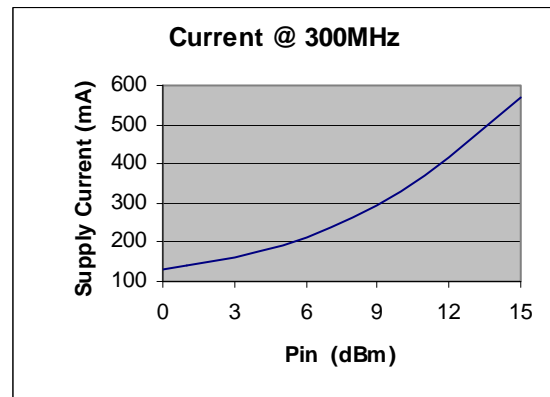
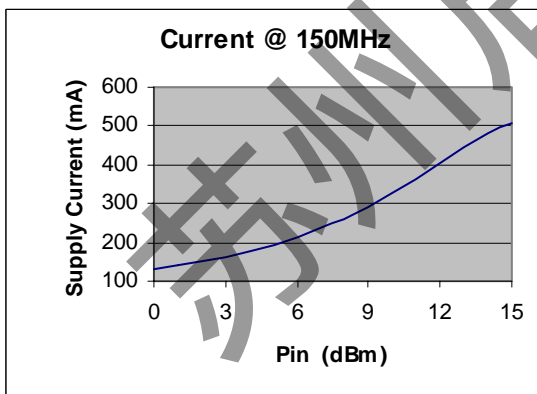
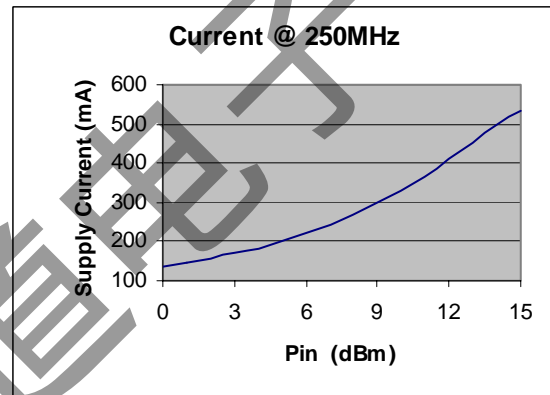
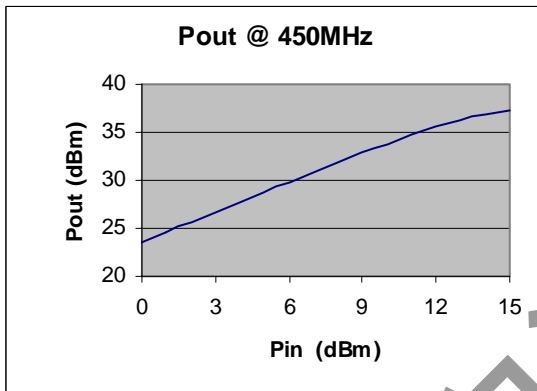
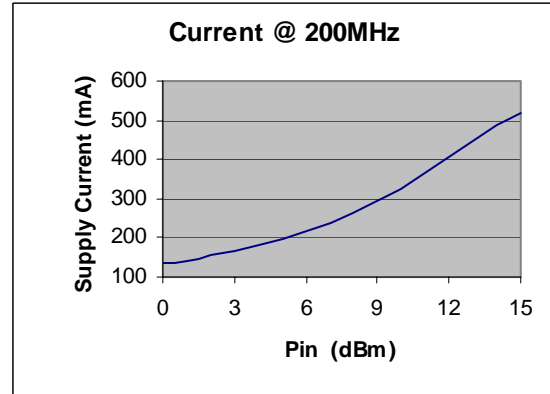
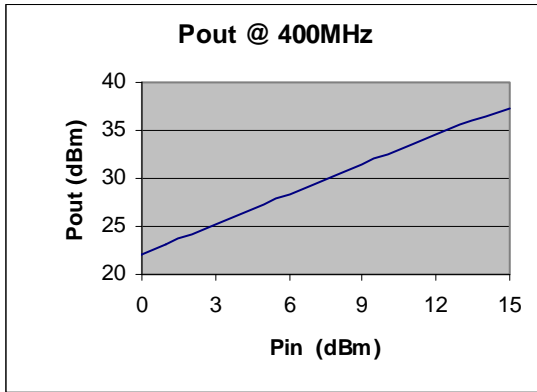
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Typical Performance @ +25 °C



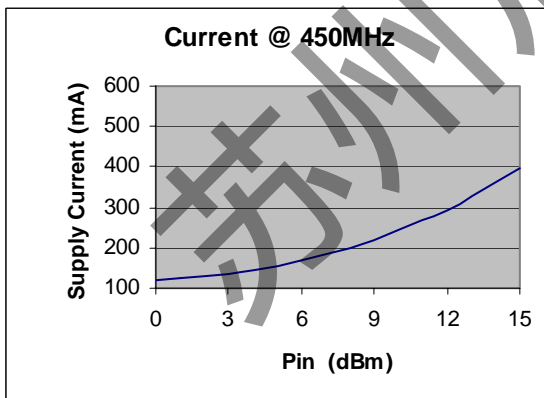
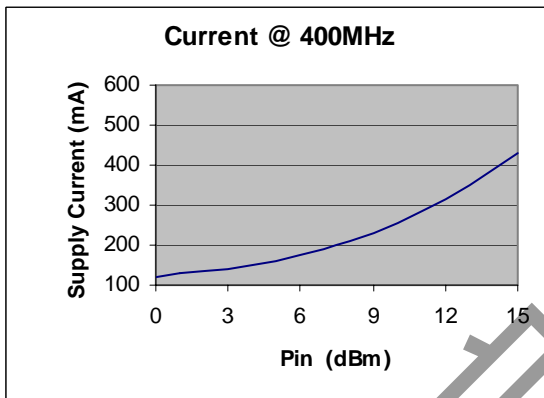
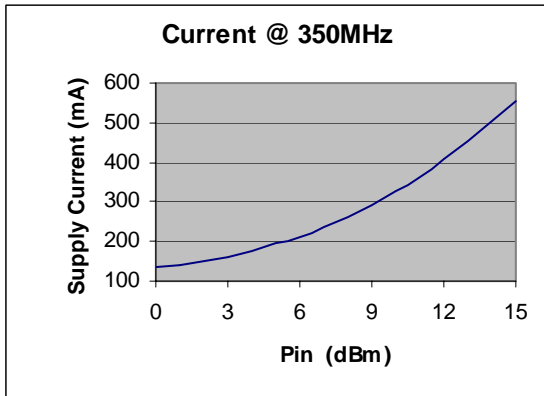
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Pout = +33dBm, Vcc = +24V

AM Distortion with 2W Output, Modulation Index = 85%

Pin	Frequency	Pout	Distortion	Icc@24V
6.2 dBm	150 MHz	2 Watt	1.49%	233 mA
7.2 dBm	200 MHz	2 Watt	0.71%	261 mA
10.4 dBm	250 MHz	2 Watt	5.36%	350 mA
9.5 dBm	300 MHz	2 Watt	1.03%	335 mA
8.6 dBm	350 MHz	2 Watt	0.66%	297 mA
9.3 dBm	400 MHz	2 Watt	1.46%	253 mA
8.4 dBm	450 MHz	2 Watt	6.38%	220 mA

Pout = +36dBm, Vcc = +24V

FM Distortion with 4W Output, Mod Deviation = 50KHz

Pin	Frequency	Pout	Distortion	Icc@24V
10.5 dBm	150 MHz	4 Watt	0.08%	345 mA
11.5 dBm	200 MHz	4 Watt	0.08%	390 mA
14.9 dBm	250 MHz	4 Watt	0.08%	541 mA
13.9 dBm	300 MHz	4 Watt	0.08%	514 mA
13 dBm	350 MHz	4 Watt	0.12%	452 mA
13.7 dBm	400 MHz	4 Watt	0.11%	378 mA
12.9 dBm	450 MHz	4 Watt	0.11%	324 mA

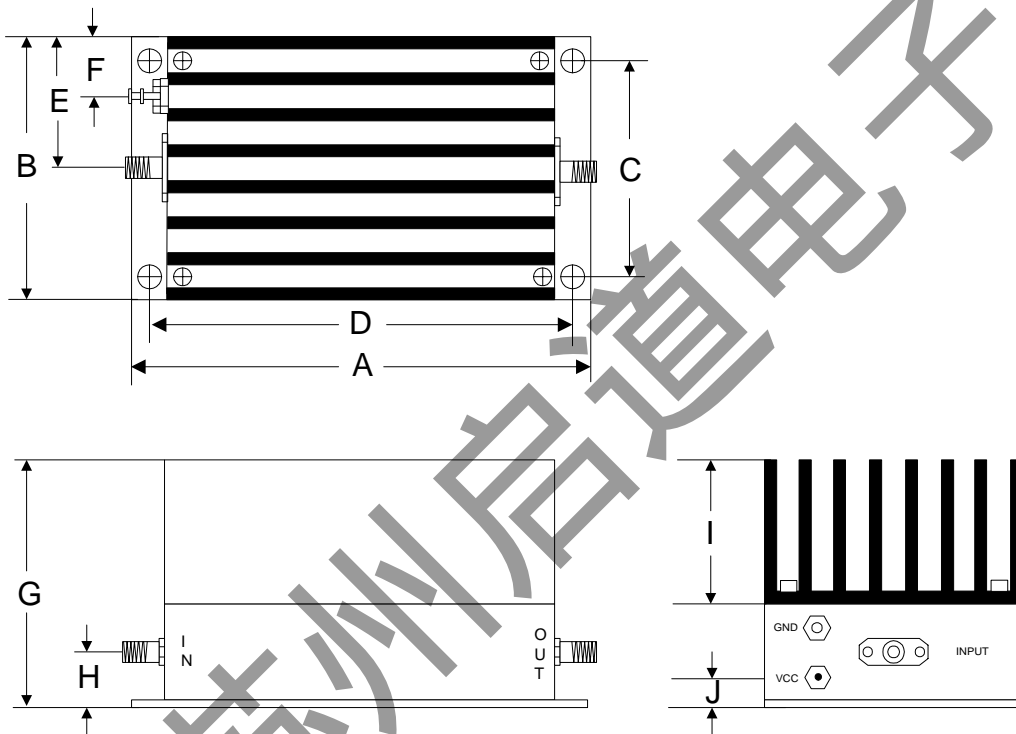
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Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+20dBm
Supply Voltage	+25V
Operating Temperature	-30 °C to +65 °C
Storage Temperature	-55 °C to +100 °C

Outline



	A	B	C	D	E	F	G	H	I	J
Inch	3.750	2.000	1.750	3.400	1.000	0.400	1.813	0.375	1.000	0.238
mm	92.25	50.80	44.45	86.36	25.40	10.16	46.05	9.53	25.40	6.03