

MPA Series

20-1000MHz 4W RF Power Amplifier

Features

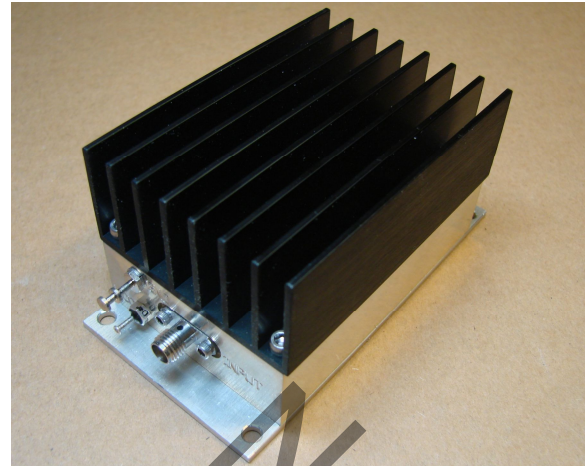
- Frequency Range: 20-1000MHz
- Gain: 40dB
- P_{out}: +36dBm
- IP3: +47dBm
- Noise Figure: 6dB
- DC Power: +24V
- SMA Connector

Performance measured @ 500MHz

Description

MPA-40-40 is a 4Watt (+36dBm) output RF Power Amplifier operating from single +24V DC power supply with frequency from 20MHz to 1000MHz.

Picture



Electrical Specifications @ +25 °C, Z_{in} = Z_{out} = 50 Ω, DC Supply = +24V

Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	MHz	20		1000
Small Signal Gain S21	dB	38	40	
Gain Flatness	dB		±0.5	±0.8
Output Power P _{out} @ P _{in} = 0dBm	dBm	+35	+36	
Output Power P _{3dB} f = 500MHz	dBm	+38	+40	
IP3 f = 500MHz	dBm	+43	+47	
IMD3 (Two Tone +20dBm Output)	dBc	45	48	
Reverse Isolation S12 f = 500MHz	dB	-45	-50	
Noise Figure f = 500MHz	dB		6.0	7.0
Efficiency	%	28	32	
P _{out} = +36dBm f = 500MHz				
Input VSWR S11 f = 500MHz			1.5:1	2.0:1
Output VSWR S22 f = 500MHz			1.5:1	2.0:1
DC Power Supply	V	18	24	+28
Supply Current (Quiescent)	mA		630	670
Weight	Oz.		9	

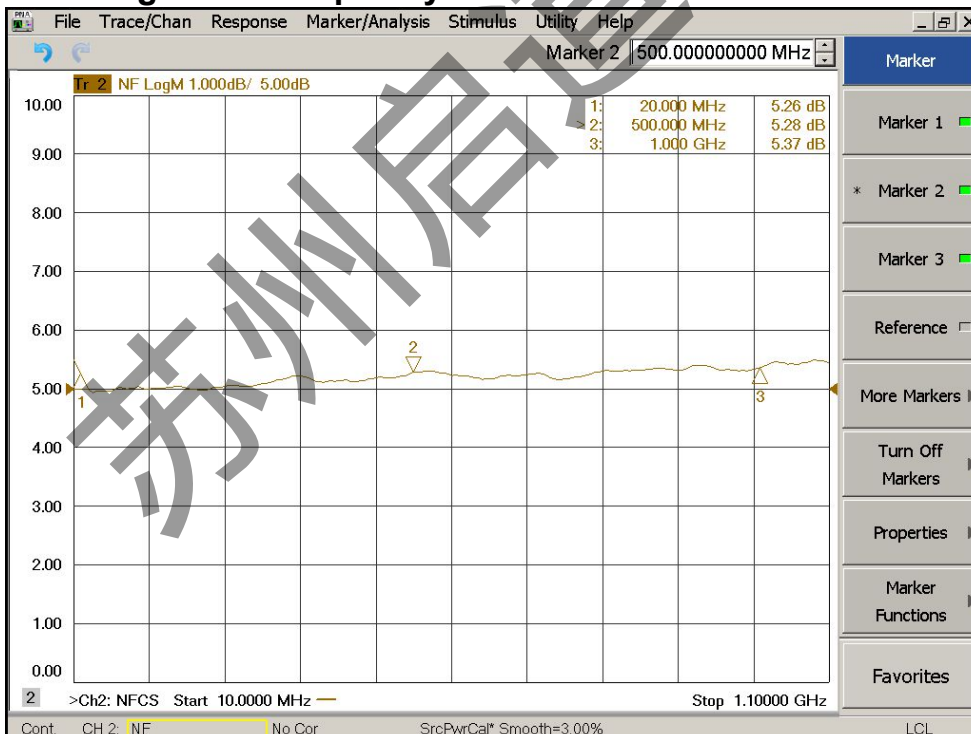
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Gain S21, Isolation S12, Return Loss S11, S22 vs Frequency



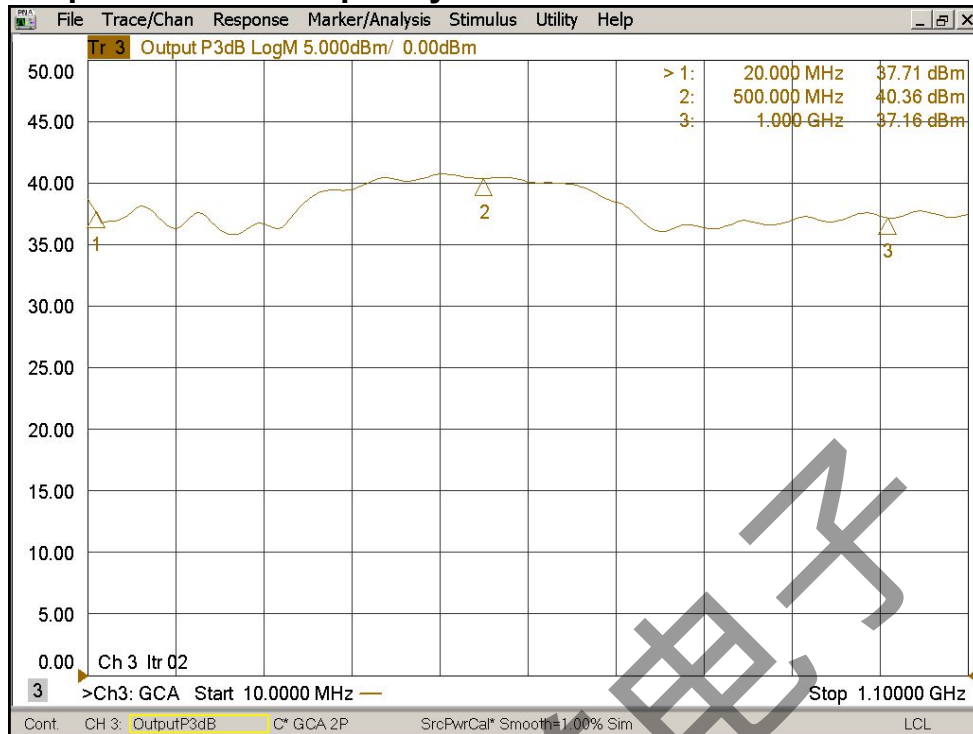
Noise Figure vs Frequency



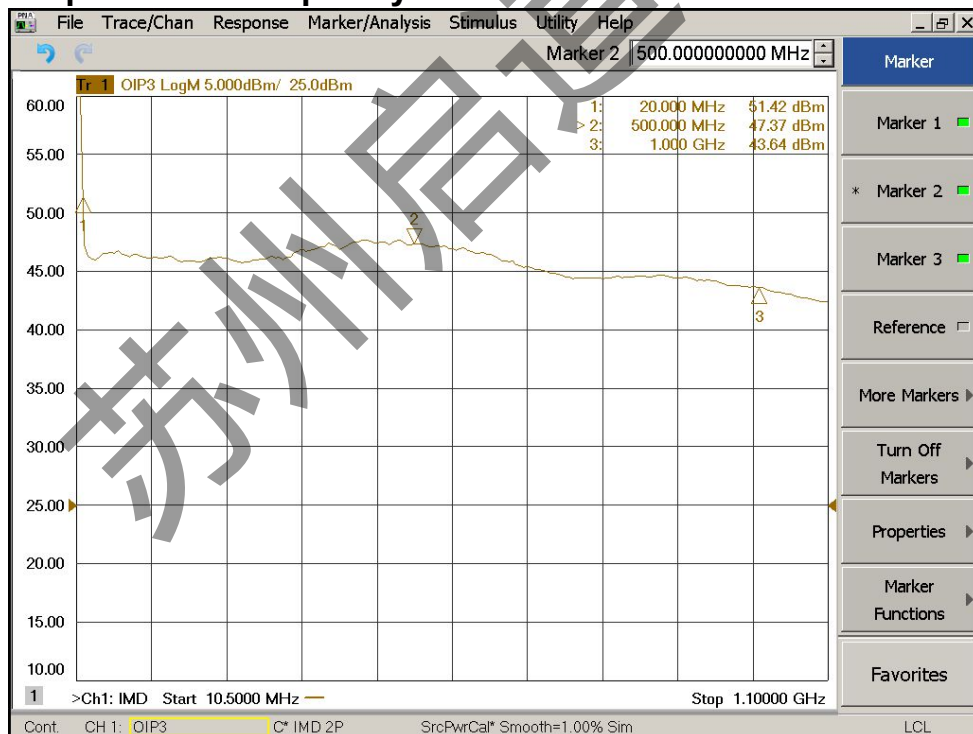
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Output P1dB vs Frequency



Output IP3 vs Frequency



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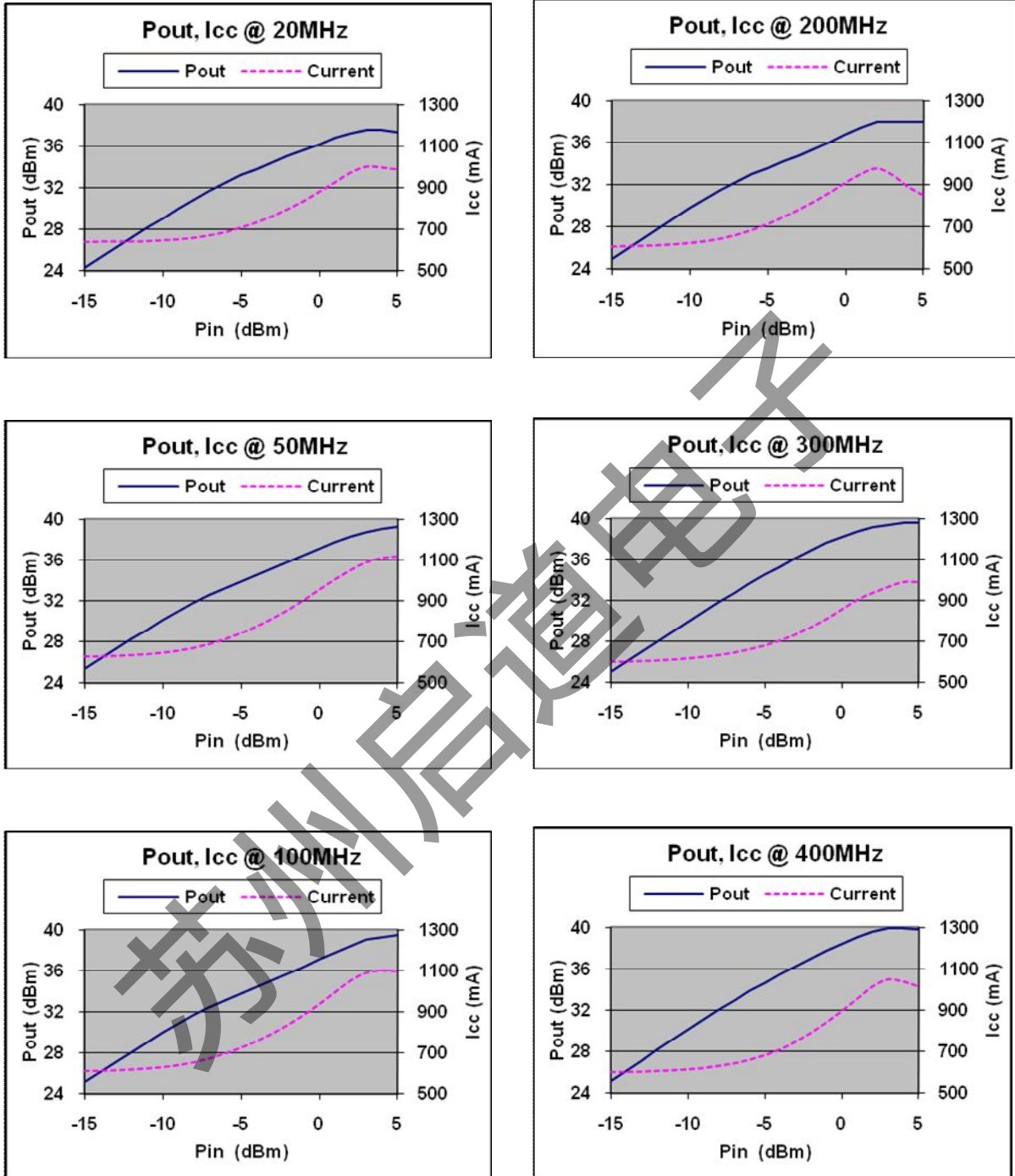
Broadband Performance



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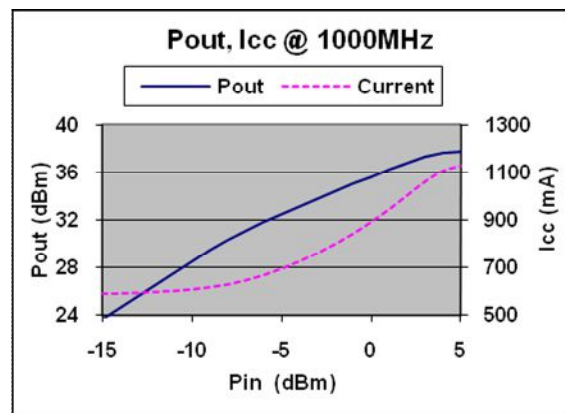
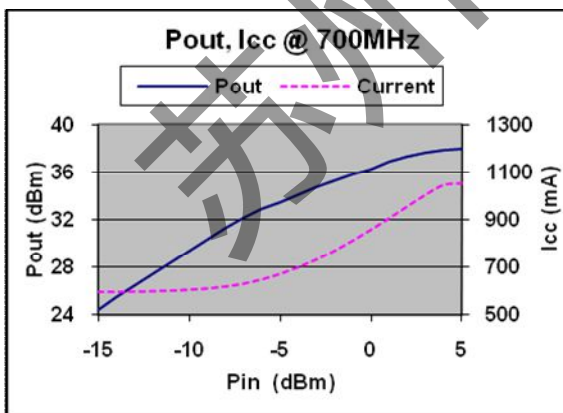
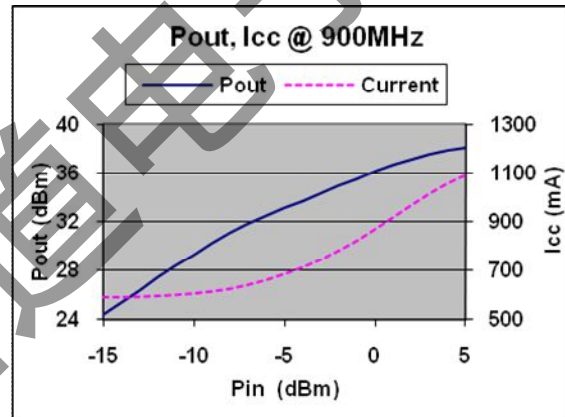
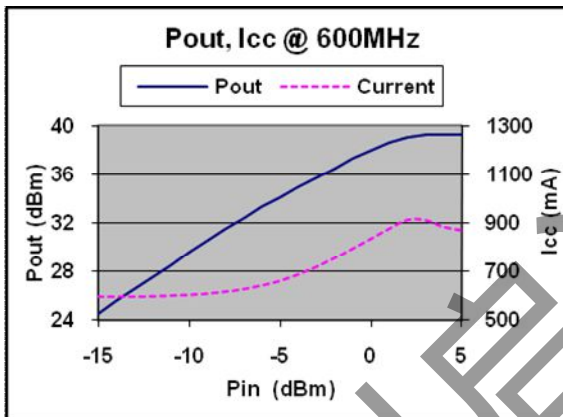
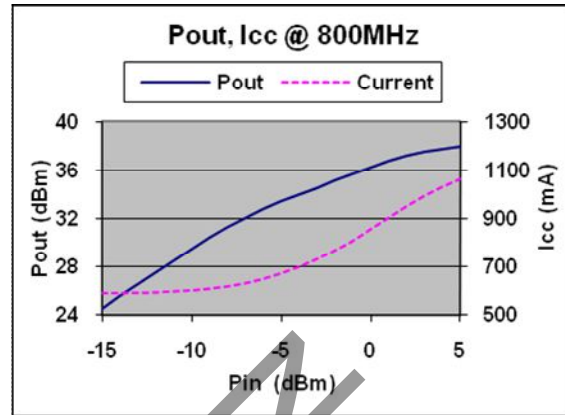
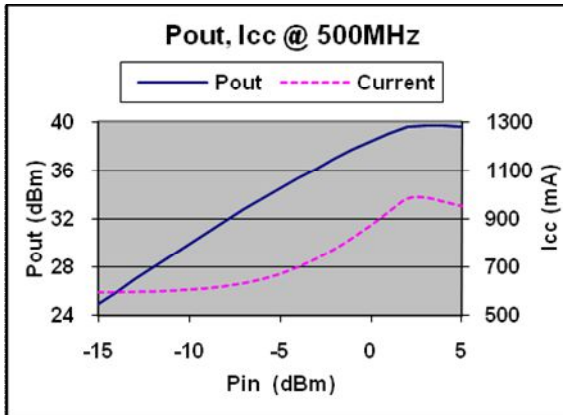
Typical Performance @ +25 °C



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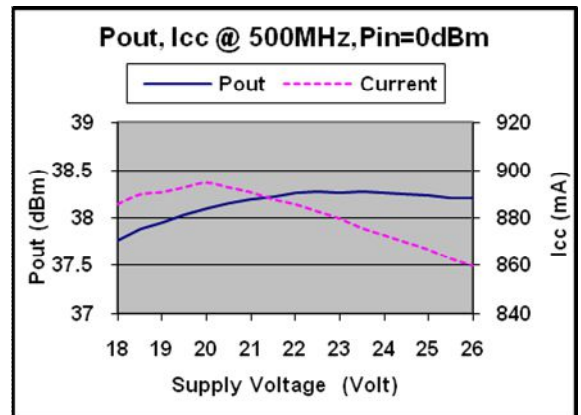
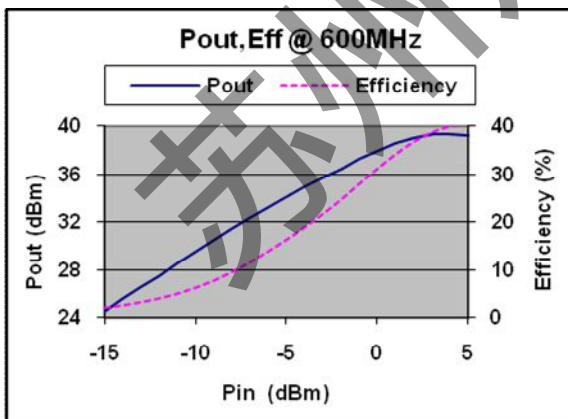
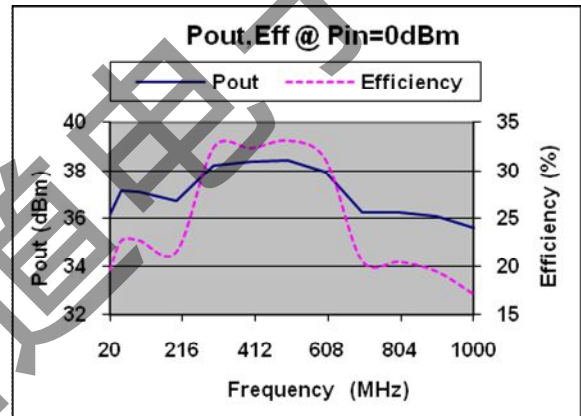
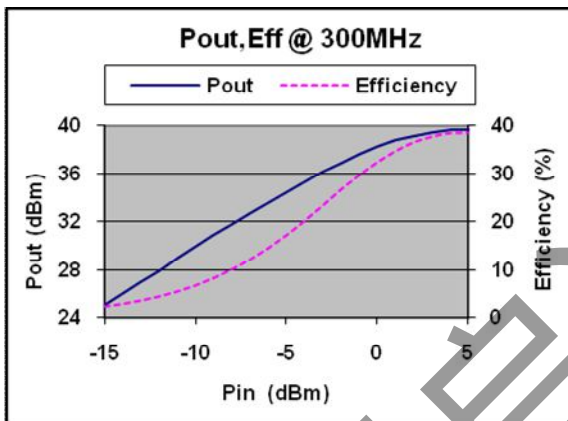
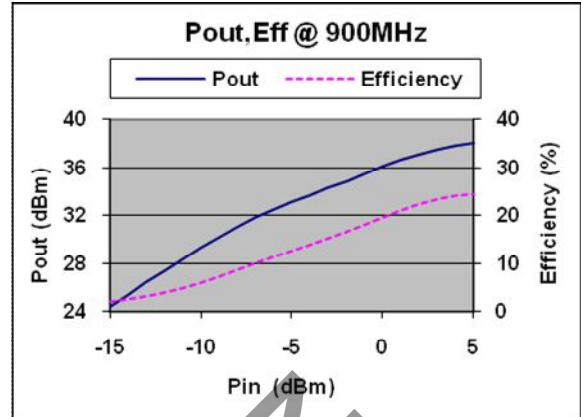
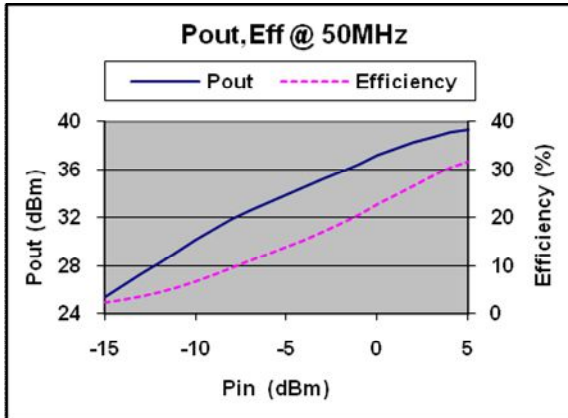
Typical Performance @ +25 °C



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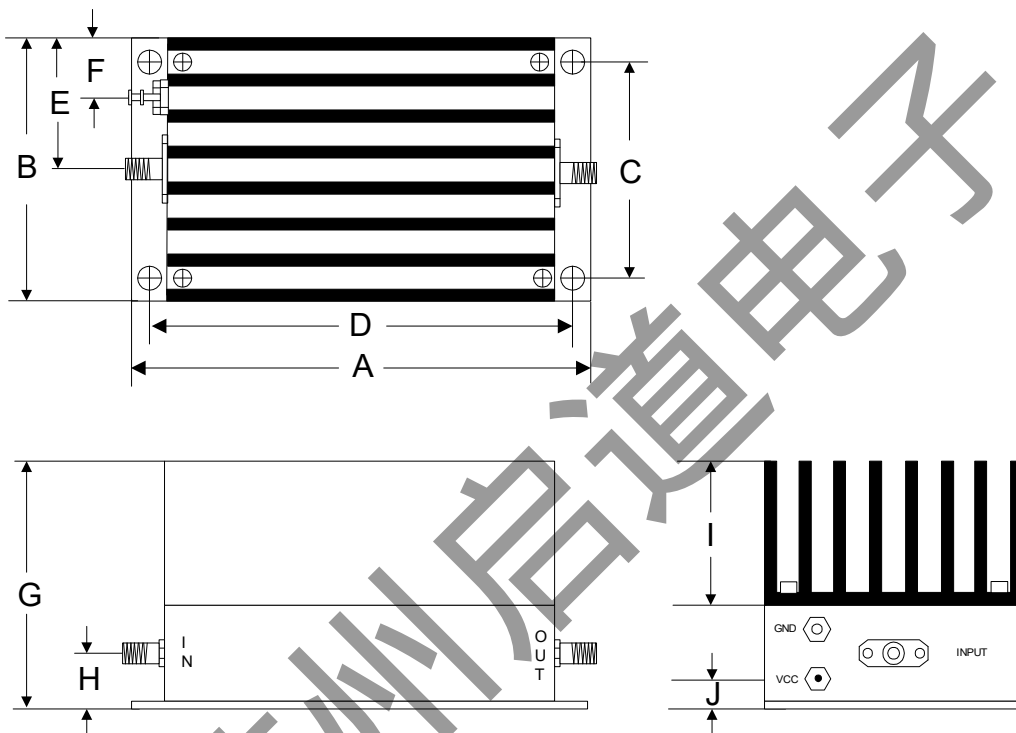
Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+10dBm
DC Supply Voltage	+28V
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +125 °C

ESD Sensitive Material



Outline



	A	B	C	D	E	F	G	H	I	J
Inch	3.750	2.000	1.750	3.400	1.000	0.400	1.913	0.375	1.000	0.238
mm	92.25	50.80	44.45	86.36	25.40	10.16	48.59	9.53	25.40	6.03

Note:

Pout and Gain are not sensitive to DC power supply voltage, reduce Vcc from +24V to +18V will reduce 25% amplifier heat, but only drop about 1dB in Pout and Gain performance.