

JPA Series

20-4000MHz 2W RF Power Amplifier

Features

- Frequency Range: 20-4000MHz
- Small Signal Gain: 40dB
- P_{SAT} : +33dBm (2W)
- DC Power: +28V @ 900mA
- DC Power Reverse Protected
- RF Connector: SMA Female
- GaN RF Power Amplifier
- Class AB Power Amplifier

Picture



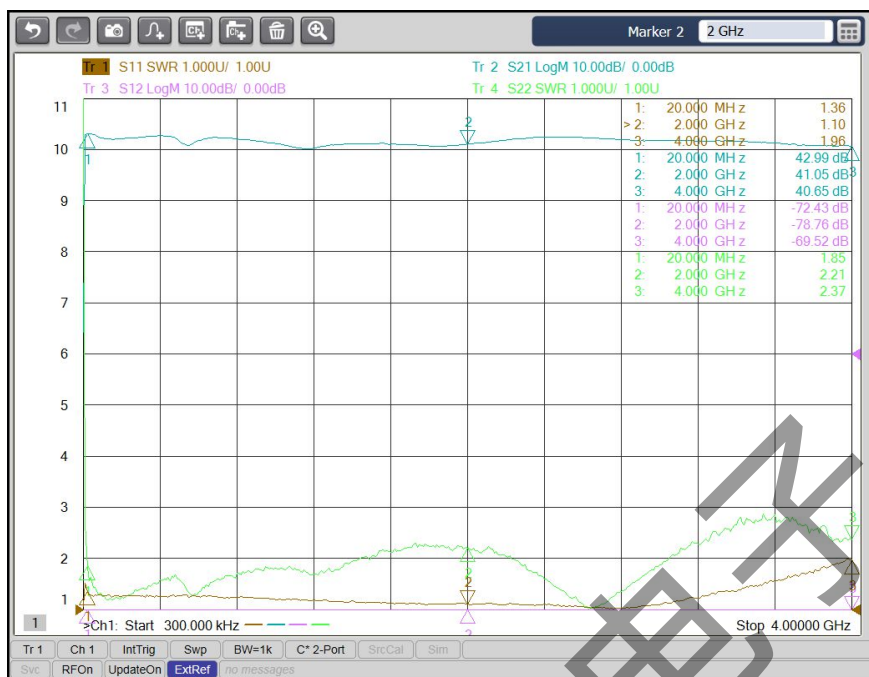
Electrical Specifications @+25°C, $Z_{in}=Z_{out}=50\ \Omega$, DC Power Supply = +28VDC

Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	MHz	20		4000
Small Signal Gain (S_{21}) ($P_{IN} = -40\text{dBm}$)	$f = 20\text{MHz}$	40	42	
	$f = 2000\text{MHz}$	39	41	
	$f = 4000\text{MHz}$	38	40	
Gain Flatness	dB		± 1.5	± 2.5
Output Power P_{sat}	$f = 20\text{MHz}$	+35.0	+36.0	
	$f = 2000\text{MHz}$	+34.0	+35.0	
	$f = 4000\text{MHz}$	+31.0	+32.5	
Output IP3	$f = 2000\text{MHz}$		+44	
Efficiency $P_{IN} = 0\text{dBm}, f = 2000\text{MHz}$	%		12	
Noise Figure @ $f = 2000\text{MHz}$	dB		6.0	7.0
Reverse Isolation (S_{12})	dB	-60	-70	
VSWR-Input (S_{11})	$f = 2000\text{MHz}$		1.5:1	2.0:1
VSWR-Output (S_{22})	$f = 2000\text{MHz}$		2.2:1	3.0:1
DC Supply Voltage	V	24	28	32
DC Supply Current	No RF Input	mA	600	800
	$P_{OUT} = +33\text{dBm}$	mA	900	1200

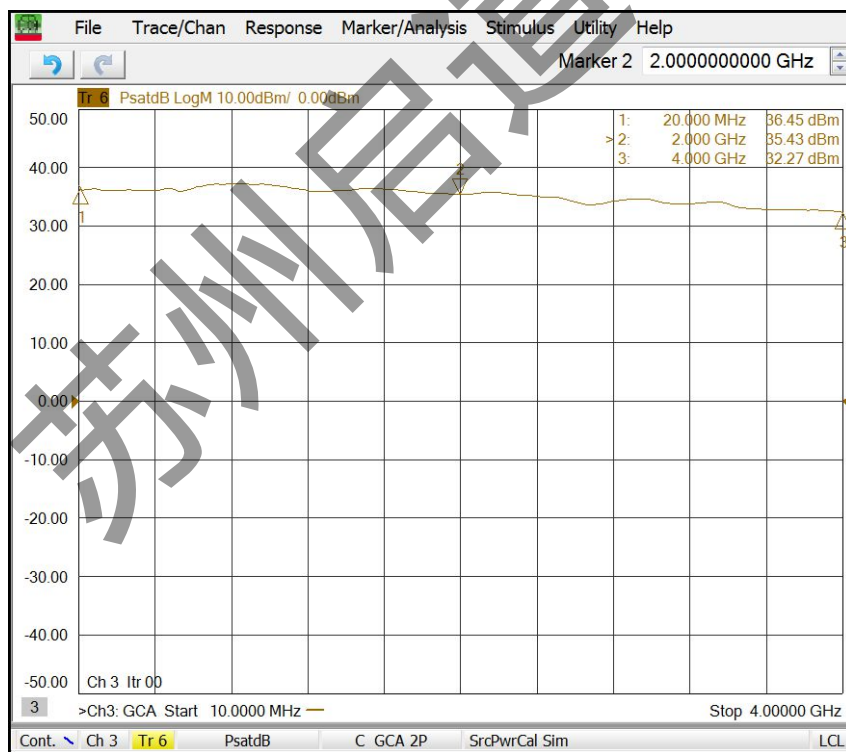
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Gain S21, Isolation S12, Return Loss S11, S22 vs Frequency



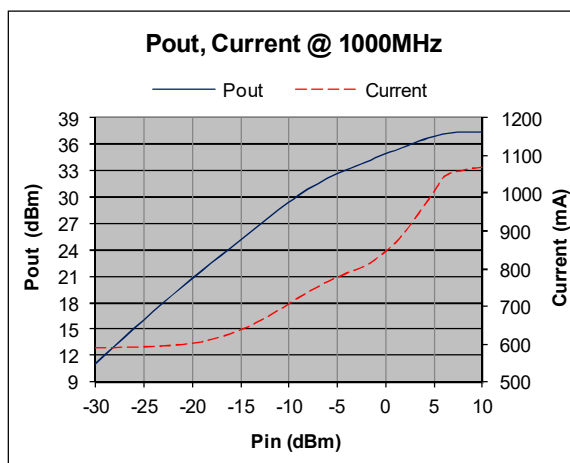
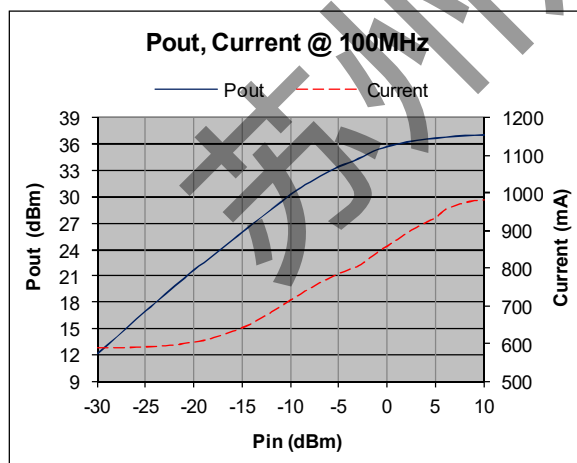
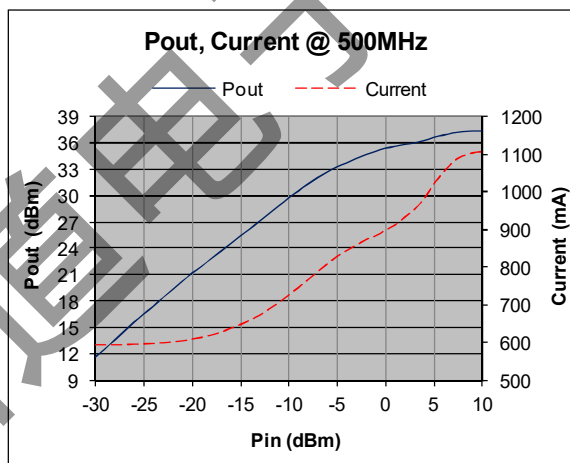
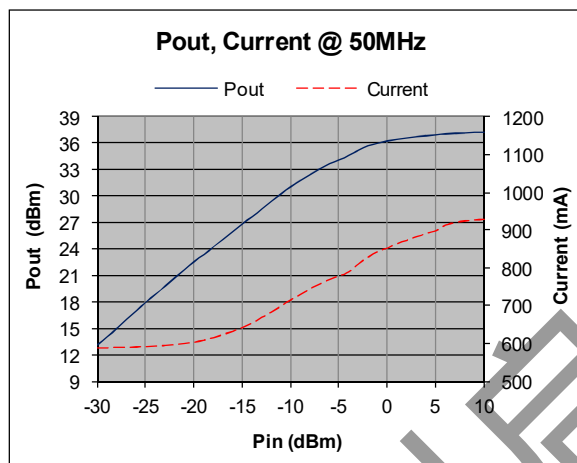
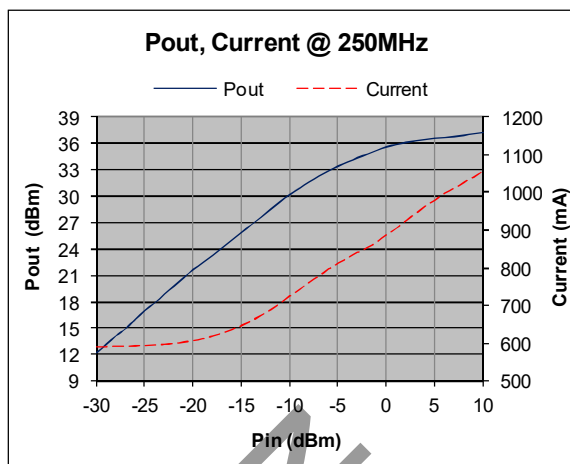
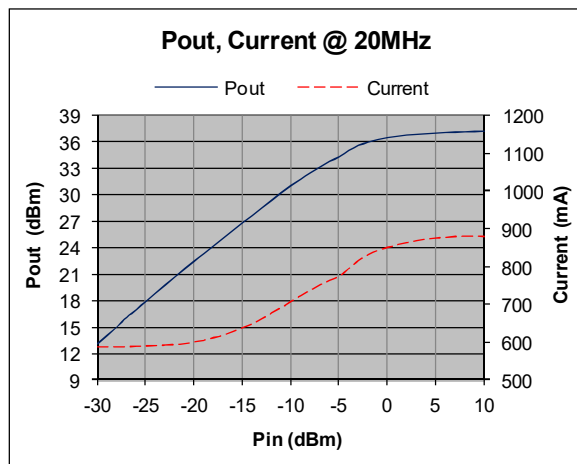
Psat vs Frequency



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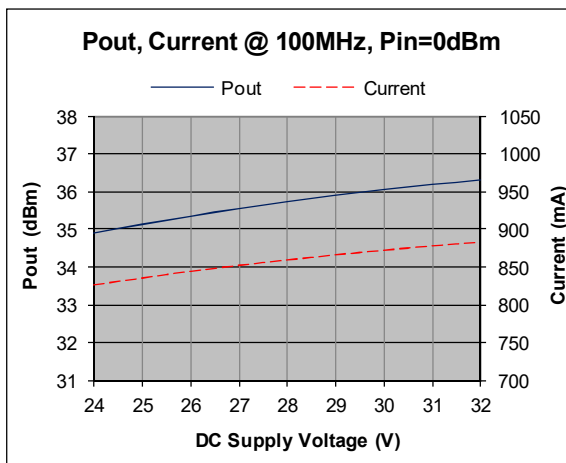
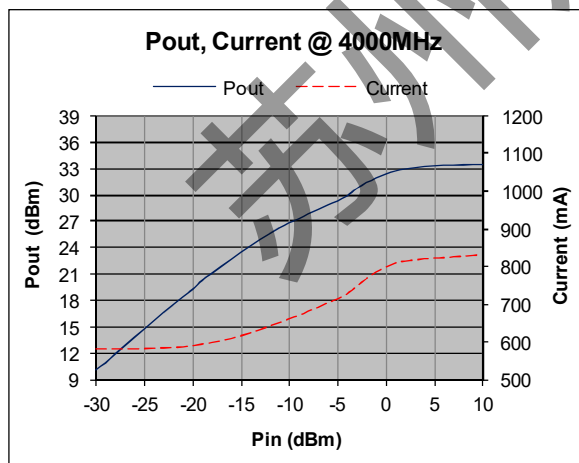
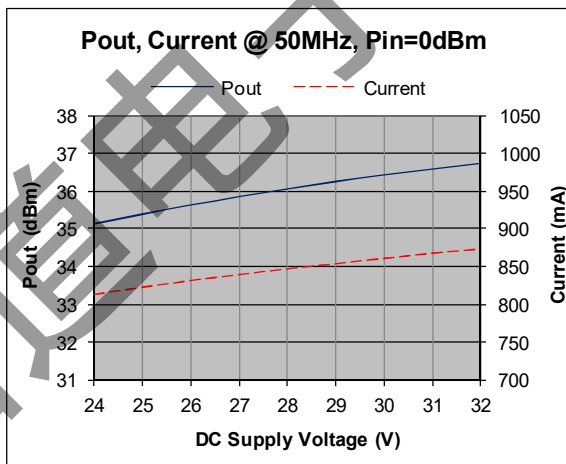
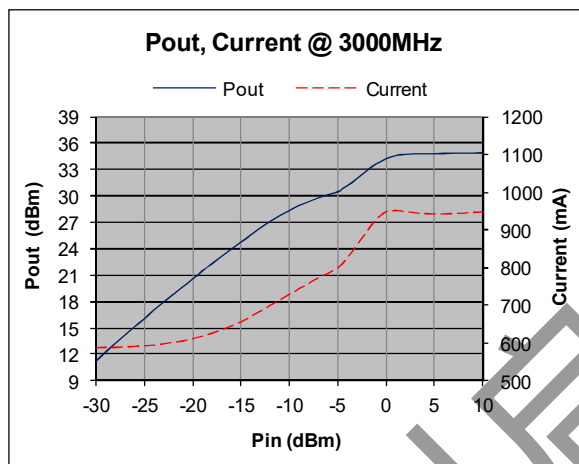
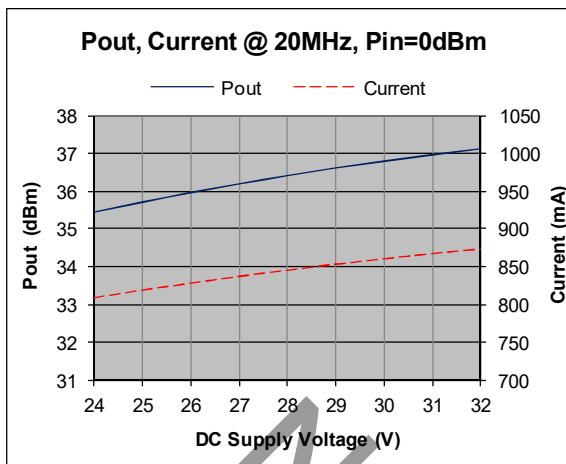
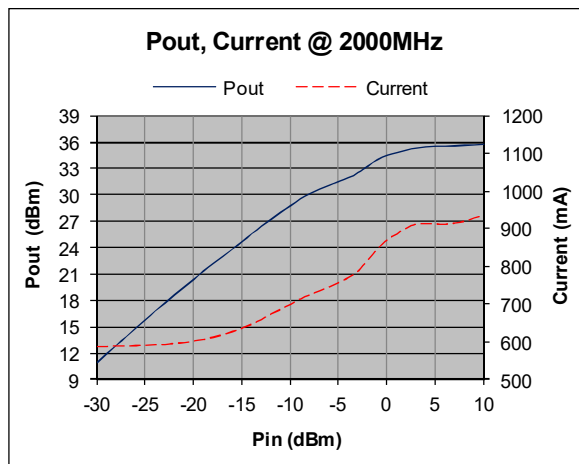
Typical Performance @ +25°C



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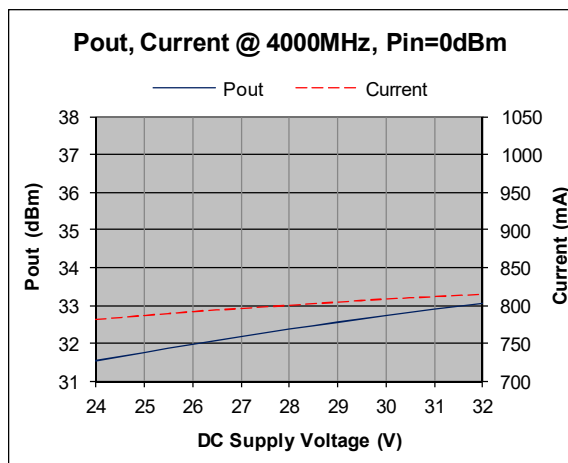
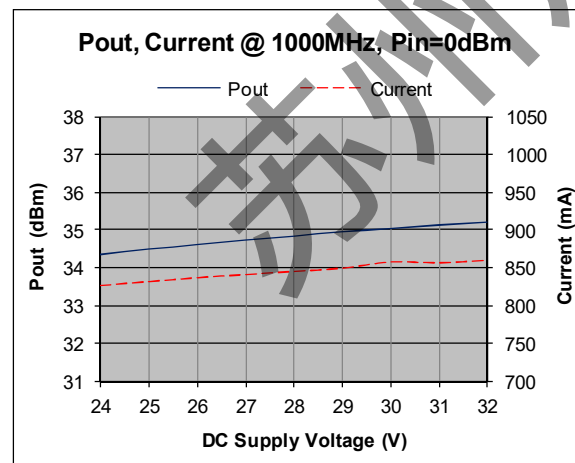
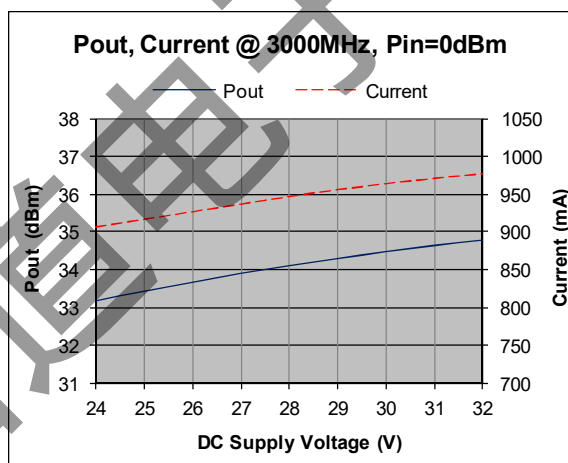
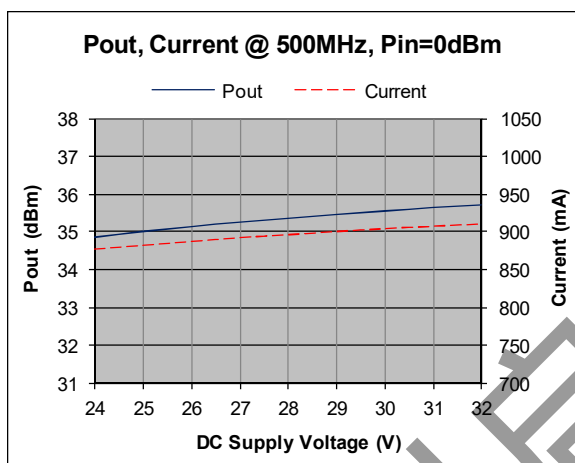
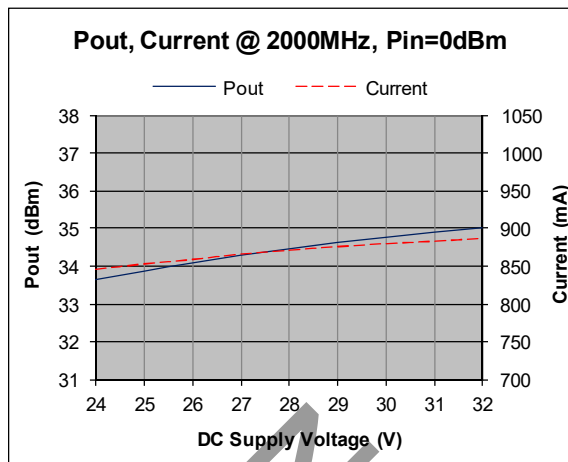
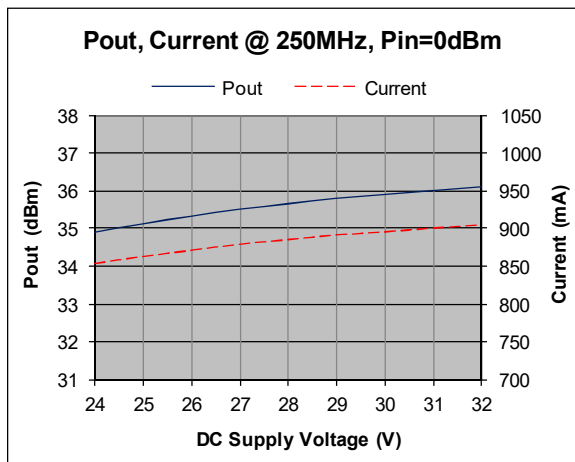
Typical Performance @ +25°C



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Typical Performance @ +25°C



JPA Series**20-4000MHz 2W RF Power Amplifier****Absolute Maximum Ratings**

Parameter	Absolute Maximum
Supply Voltage (Survival)	+33V
RF Input Power	+15dBm
Operating Temperature	-20 °C to +65 °C
Storage Temperature	-55 °C to +125 °C

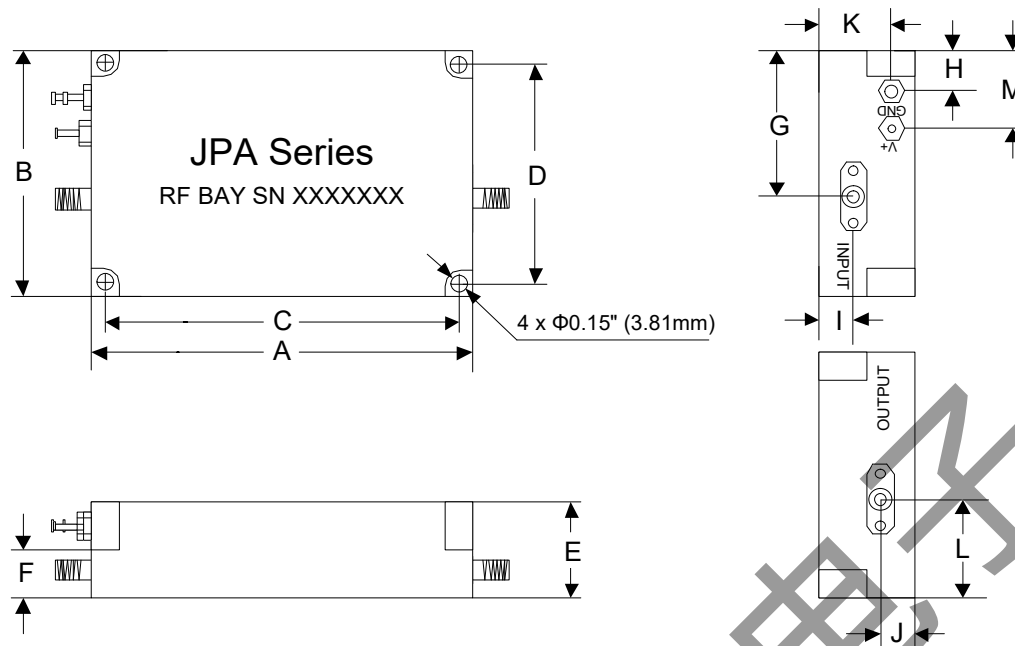
ESD Sensitive Material**Warning and Caution:**

- 1) Adequate heatsink must be used. Cooling Fan highly recommended. Amplifier operational baseplate temperature must be within datasheet operating temperature range.
- 2) Load must be connected to amplifier output at all time if DC power is ON.
- 3) If power amplifier connected to an antenna for signal transmission, it is strongly recommended to use a high power isolator or fixed attenuator between amplifier output and antenna input.

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Outline



Mounting screws recommended to use hex socket head cap #6x3/4"

	A	B	C	D	E	F	G	H	I
Inch	4.00	2.50	3.70	2.20	1.05	0.54	1.40	0.30	0.30
mm	101.60	63.50	93.98	55.88	26.67	13.72	35.56	7.62	7.62
	J	K	L	M					
Inch	0.30	0.75	1.10	0.70					
mm	7.62	19.05	27.94	17.78					