Low Noise Amplifier

Model: LNA5M700M-2415

5-700MHz 24dB,Gain 1.5dB,NF

Ultrabroad frequency range, high small signal gain, low noise figure and good gain flatness

Features:

- Frequency range: 5-700MHz
- Small Signal Gain: 24dB min.
- Output P1dB: 23dBm typ.
- Noise Figure: 1.5dB typ.
- Operating voltage/current: +12 VDC/150mA.
- Simple 220V system available SAC option.
- 50 Ohm Matched Input / Output.

Applications:

- Laboratory Applications
- R&D Labs
- Radar Systems
- ISM
- Test Instrumentation

Product Overview：

The LNA5M700M-2415 is a coaxial low noise operating in the 5 to 700 MHz frequency range. The amplifier offers a typical noise figure of 1.5 dB, 23 dBm typical of output P1dB and a minimum small signal gain of 24 dB with the excellent gain flatness of ±0.25 dB nominal. The DC power requirement for the amplifier is +12 VDC/150 mA. The input and output port configuration offers coax adapter structure with SMA female.

Electrical Specifications at 25℃:

Parameter		Min	Typ	Max	Units
Frequency range		5		700	MHz
Small Signal Gain	@5MHz	24	26.7		dB
	@25MHz	24	26.8		dB
	@100MHz	24	26.9		dB
	@300MHz	24	27		dB
	@500MHz	24	27		dB
	@700MHz	24	26.9		dB
Small Signal Gain flatness			±0.25	±0.5	dB
Noise Figure			1.5	1.8	dB
Output P1dB@350MHz		21	23		dBm
Output IP3@350MHz		30	38		dBm
Input VSWR				1.2	:1
Output VSWR				1.4	:1
DC Voltage		+11	+12	+30	V DC
DC Supply Current			150	180	mA
Impedance			50		Ohms

*Performance may degrade below 300 MHz. Please refer to below typical test plots

Mechanical Specifications:

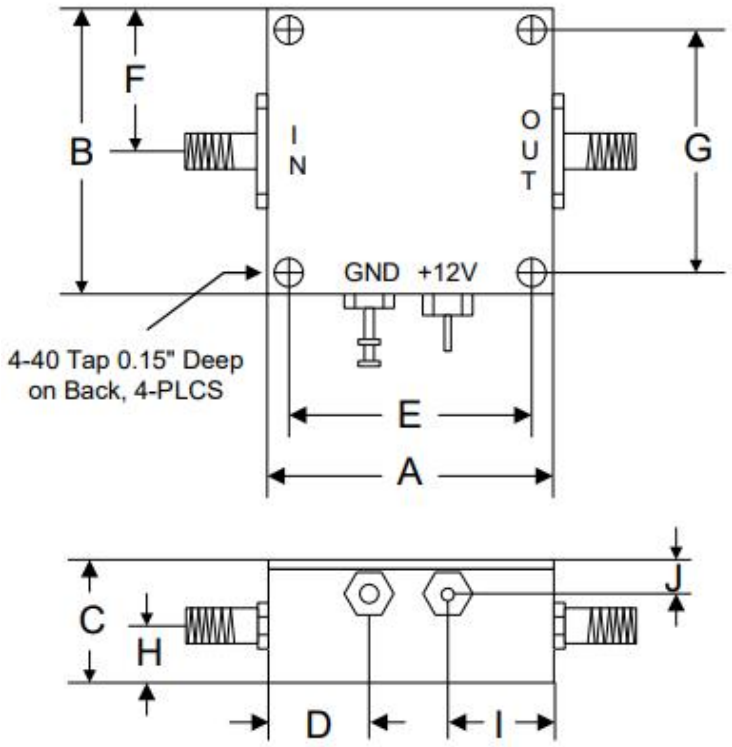
Parameter	Value	Notes
Operating Temerature	-40℃ to +70℃	
Non-operating Temperature	-55℃ to +85℃	
Relative humidity	95	%
RF Input/Output Connector	SMA Female/SMA Female	
DC Bias	Solder Pin	
Altitude	10,000	feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis	
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions	
Dimensions W x H x D	31.75 x 31.75 x 14.29	mm

Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	+35 V
RF Input Power	+15 dBm
ESD sensitivity (HBm)	Class 0, passed 150V

Outline Drawing:

Unit:mm; Tolerance:±0.1mm



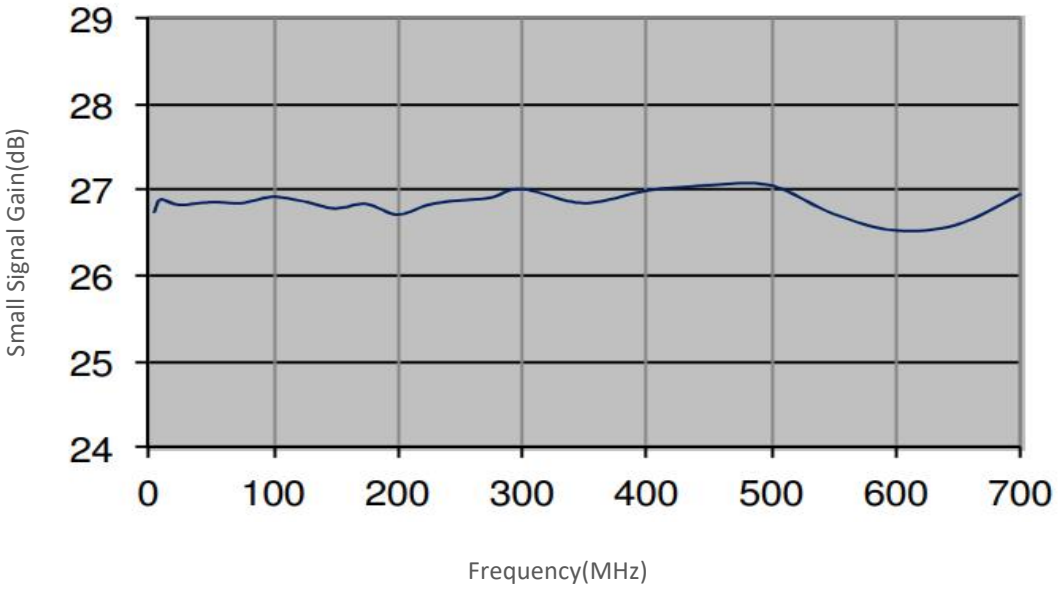
A	31.75mm
B	31.75mm
C	14.29mm
D	11.43mm
E	25.4mm
F	15.88mm
G	25.4mm
H	6.35mm
I	12.7mm
J	4.76mm

Ordering Information:

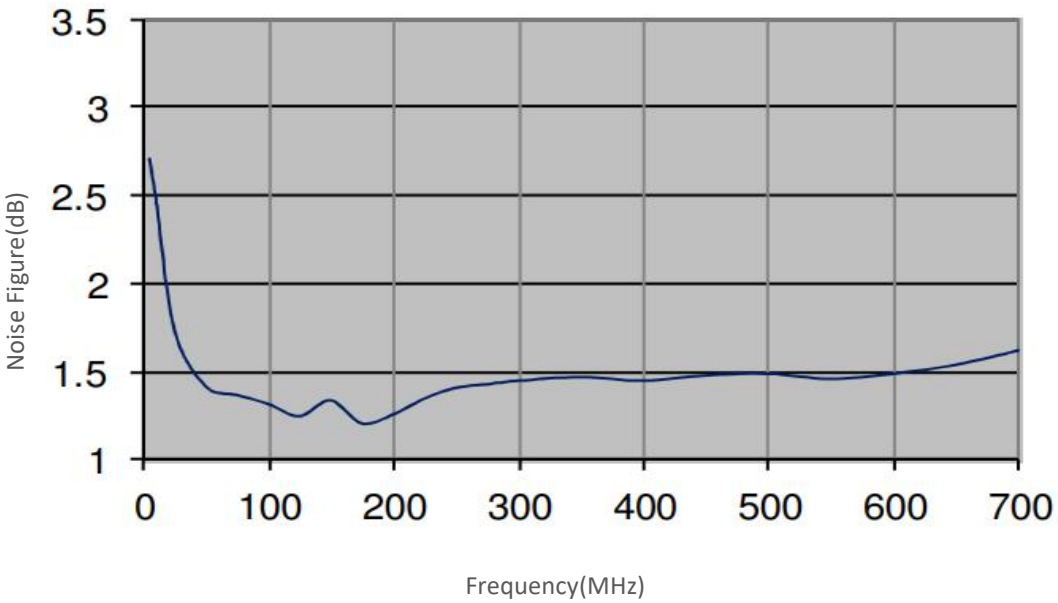
Base Number	Description	Optional
LNA5M700M-2415	Low Noise Amplifier, 5-700MHz, Gain:24dB,Noise Figure:1.5dB,P1dB:23dBm,+12V DC	Without Heatsink
LNA5M700M-2415-HS	Low Noise Amplifier, 5-700MHz, Gain:24dB,Noise Figure:1.5dB,P1dB:23dBm,+12V DC	With Heatsink

Typical Performance Data:

Small Signal Gain vs Frequency



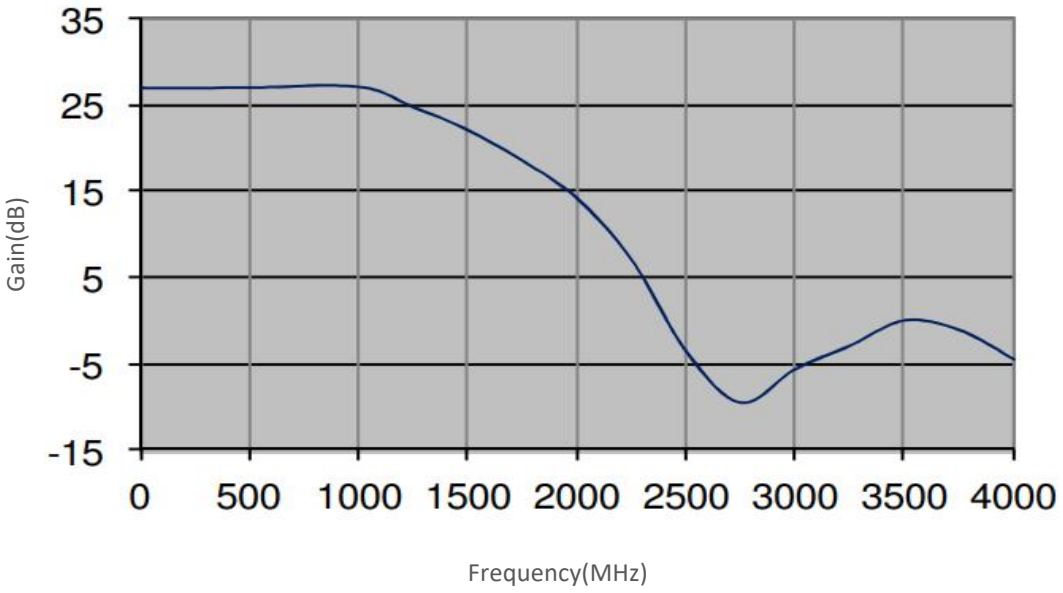
Noise Figure vs Frequency



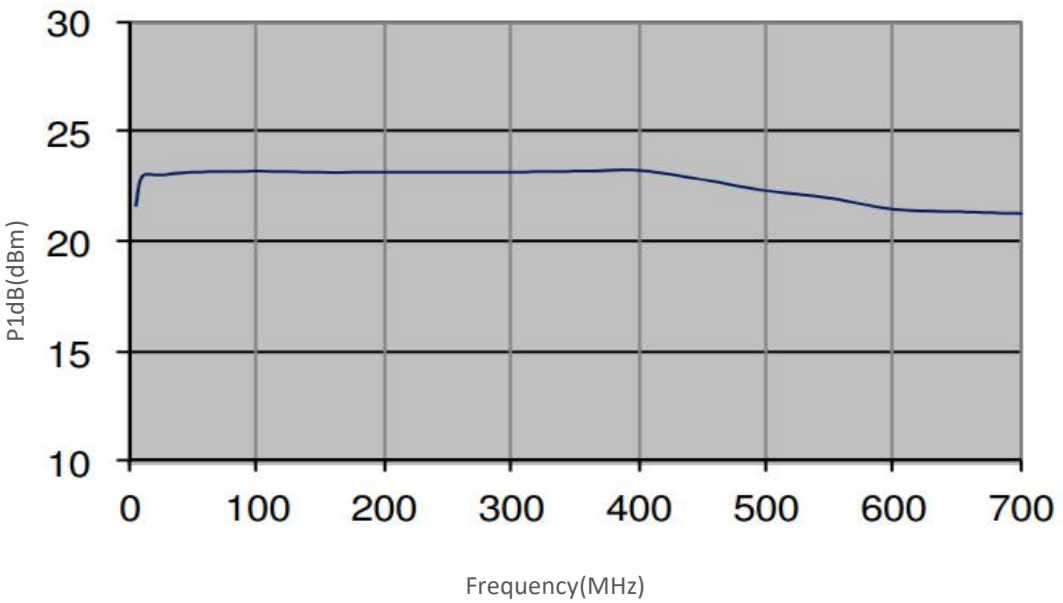
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Broadband Gain vs Frequency



P1dB vs Frequency



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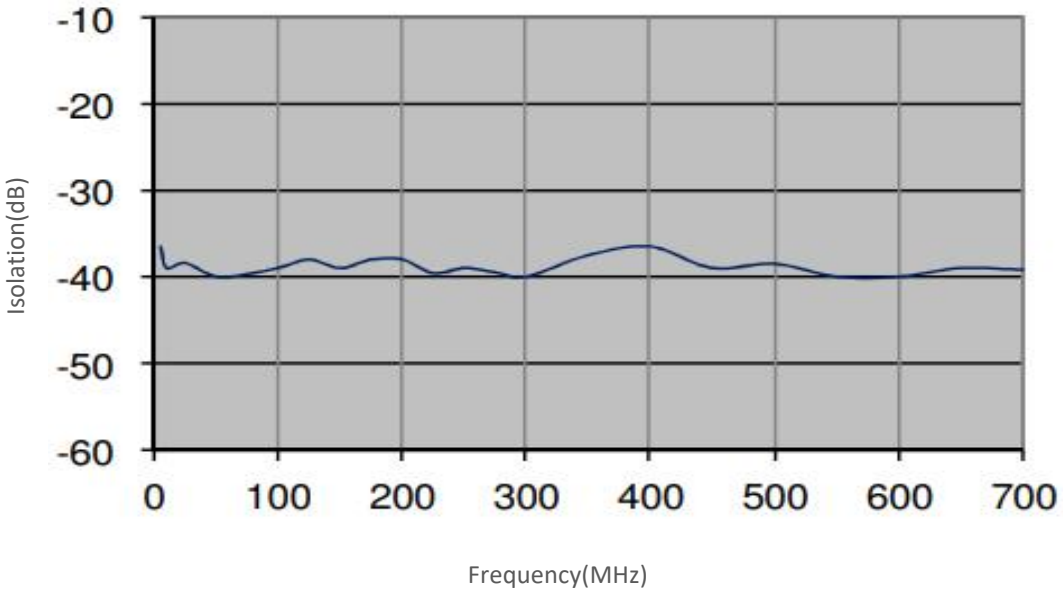
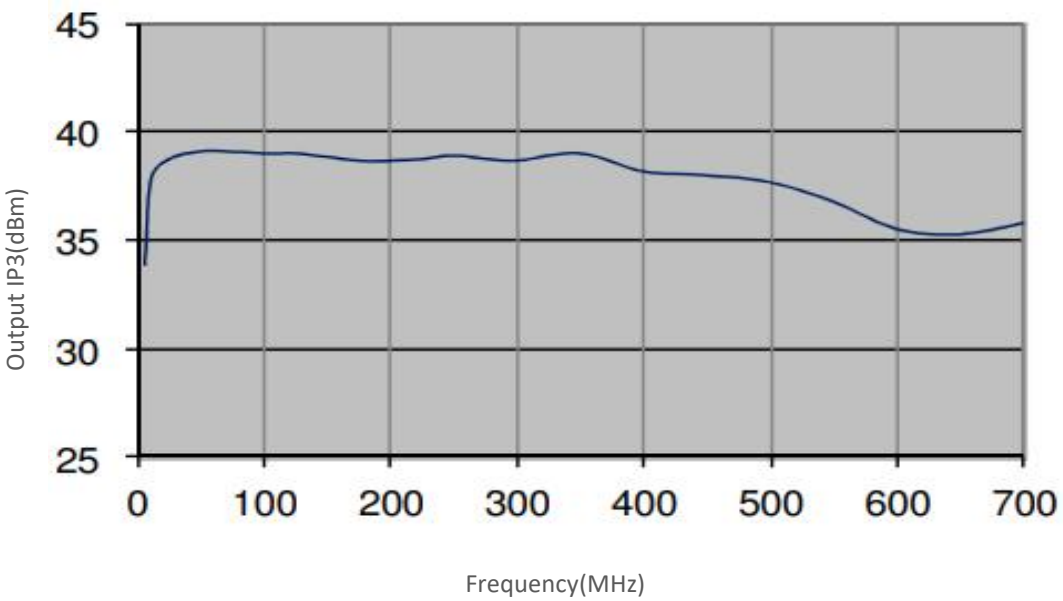
Typical Performance Data:

Isolation vs Frequency



Output IP3 vs Frequency



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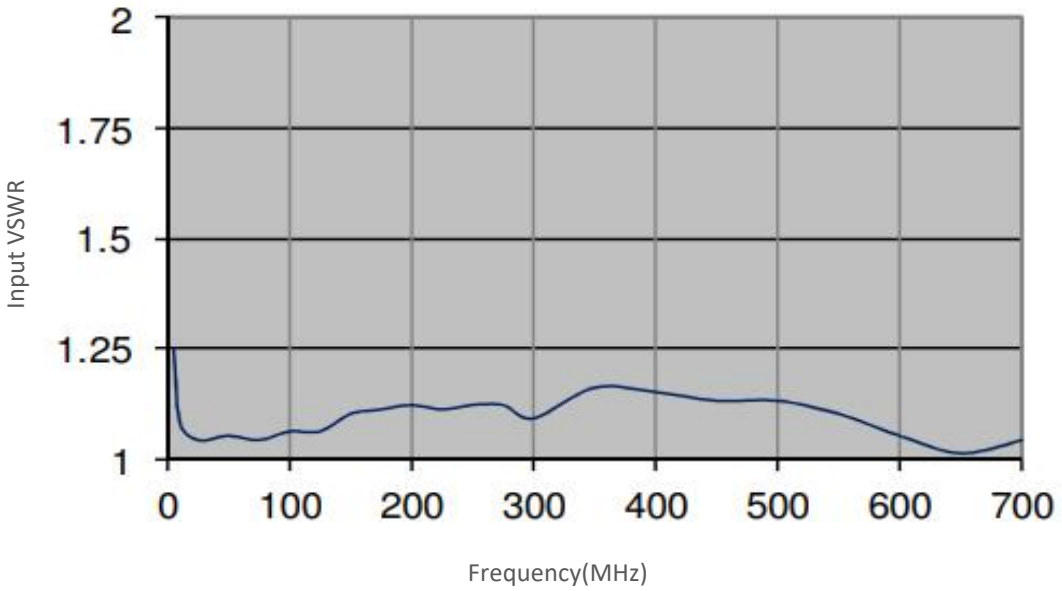
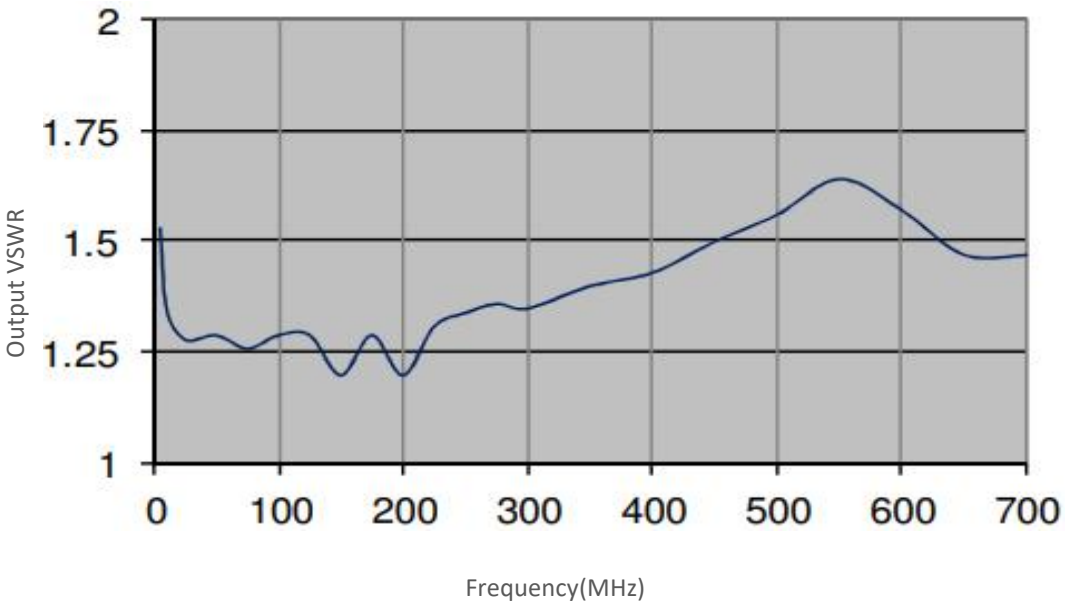
Typical Performance Data:

Input VSWR vs Frequency



Output VSWR vs Frequency



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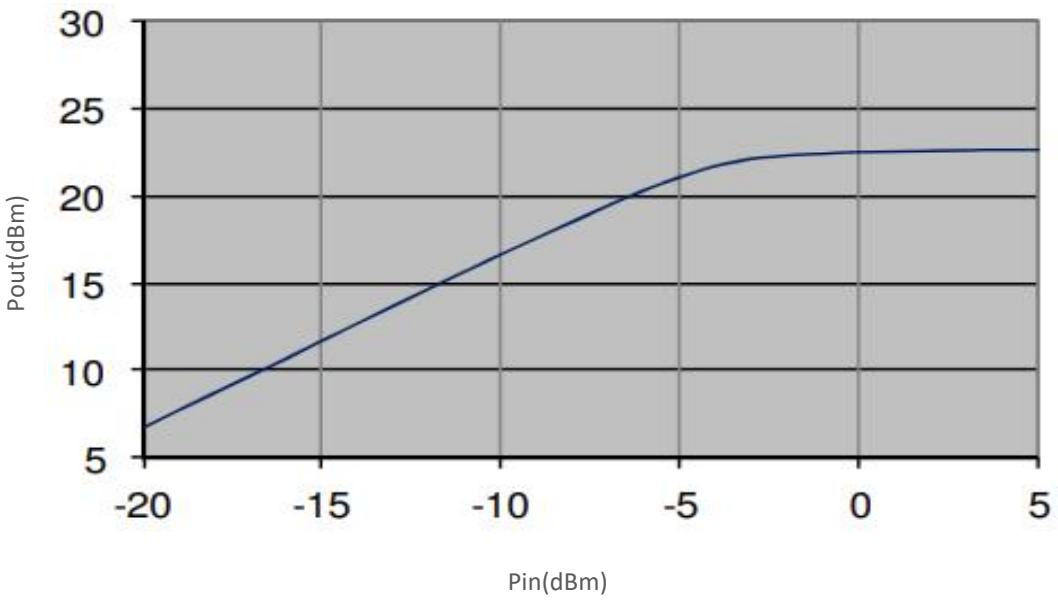
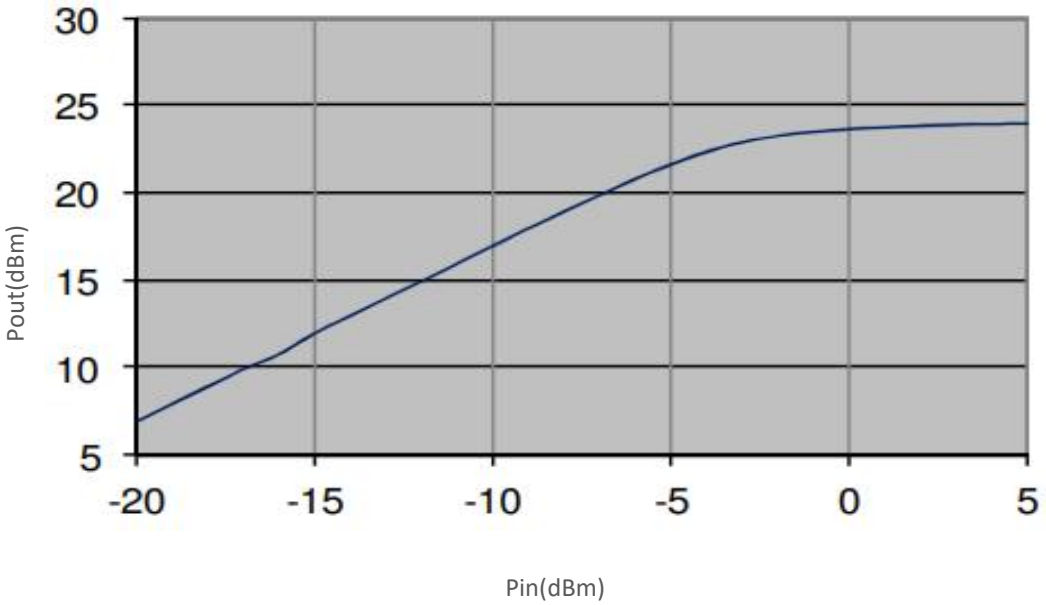
Typical Performance Data:

Pout vs Pin@5MHz



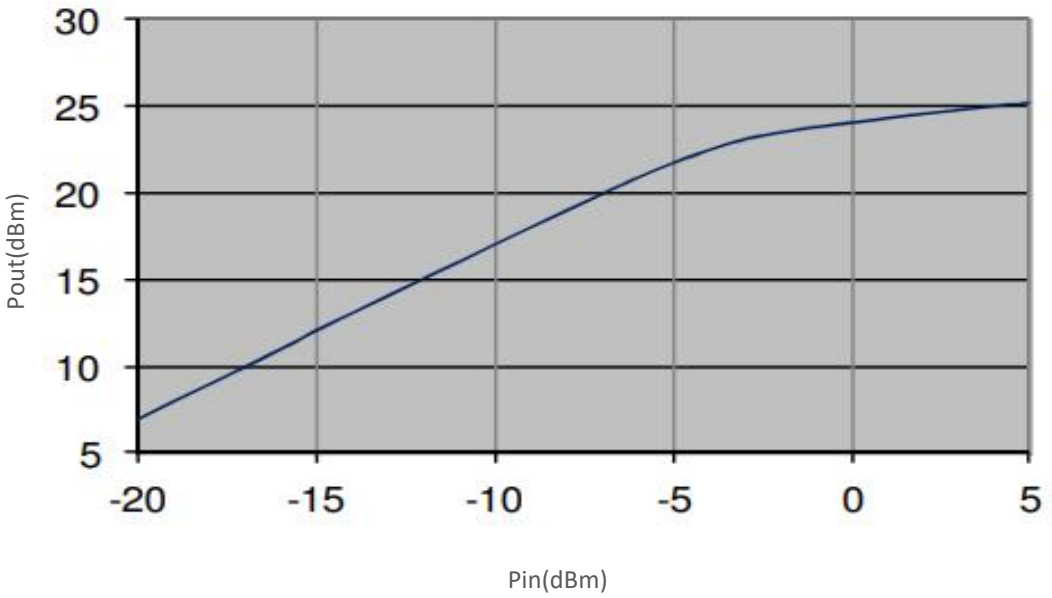
Pout vs Pin@10MHz



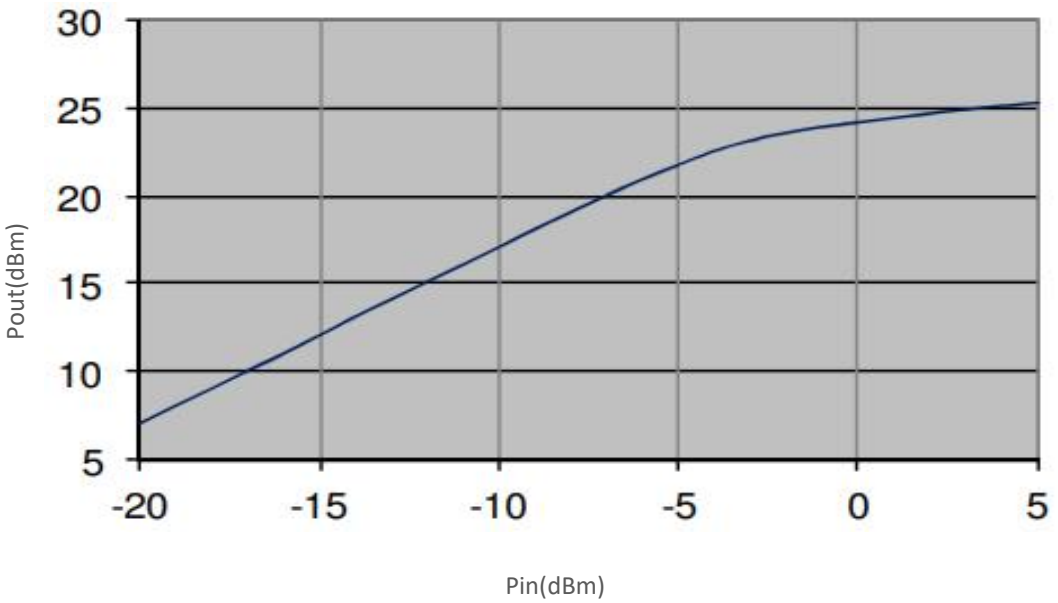
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Pout vs Pin@50MHz



Pout vs Pin@100MHz



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