BROADBAND RF POWER AMPLIFIER
ABP0300-01-2730, Revision A03

Features:

- 1 Watt typical P-1dB output Power from 30MHz to 3 GHz
- high gain with good gain flatness
- Low VSWR, unconditional stable
- SMA female connector I/O
- Single DC power supply, Integrated internal voltage regulator
- Operating temperature -40~+75°C, storage temperature -55~+125°C

General Description

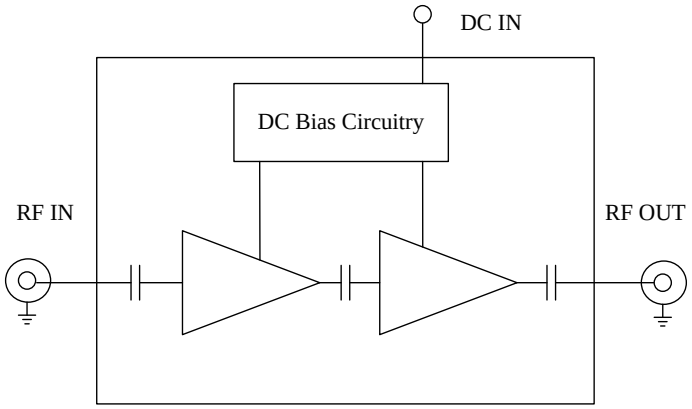
ABP0300-01-2730 is a two stage pHEMT broadband power amplifier module operating in the frequency of 30MHz to 3GHz. The amplifier provides 27dB of small signal gain, +30dBm of typical output power at 1dB gain compression, excellent gain flatness and good VSWR at both input and output. The amplifier requires only a positive DC power supply, its built-in DC voltage regulator and internal sequencing circuitry makes the application more robust.

Typical Applications

ABP0300-01-2730 is ideal for:

- General laboratory test application
- Academic research
- Defense industry
- Communication systems

Functional Diagram



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Electrical Specifications

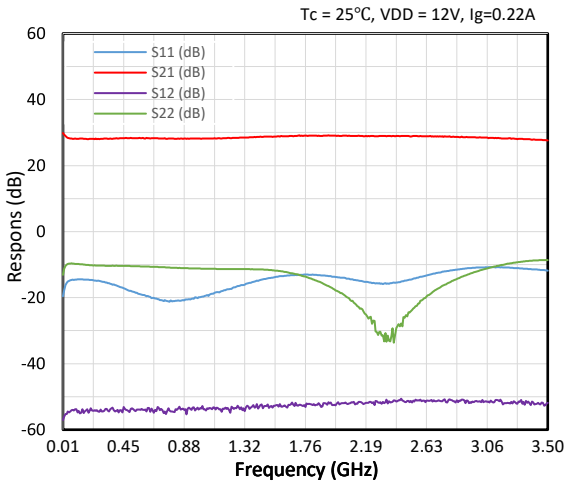
Parameters	Units	Specifications		
		Minimum	Typical	Maximum
Frequency Range	MHz	30.0		3000.0
P-1dB Compression Point	dBm	+29.0	+30.0	
Output IP3 @ Pout=17dBm, Δf = 5MHz	dBm	+33.0	+35.0	
Nominal SS Gain @ 25°C	dB	25.0	27.0	30.0
Gain flatness	dB		+/-1.0	+/-1.25
Gain Variation	dB		+/-0.75	
Noise Figure @ 25°C	dB		5.0	6.5
Input VSWR	-		1.7:1	2.0:1
Output VSWR	-		1.7:1	2.0:1
Reverse Isolation	dB	45.0	50.0	
Non-harmonic Spurious	dBc			-60.0
Operating Temperature	°C	-40.0		+75.0
Storage Temperature	°C	-55.0		+125.0
DC Voltage	V	+11.0	+12.0	+13.0
DC Supply Current @ RF OFF	mA		220	300
DC Supply Current @ 1W	mA		440	550
In/Out connectors		SMA female		
Outline Dimensions for ABP0300-01-2730 without heatsink	inches	2.08”x1.08”x0.50”		
Outline Dimensions for ABP0300-01-2730-X with heatsink	inches	2.4”x4.6”x1.9”		

Absolute Maximum Ratings

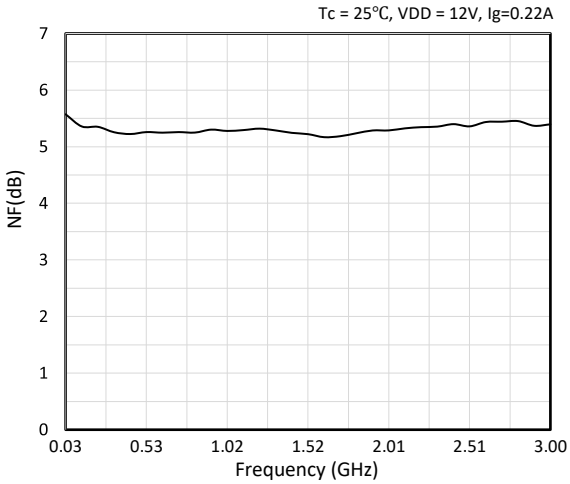
DC Voltage	+13V
RF Input Power	+15dBm
Maximum Load VSWR	3:1
Storage Temperature	-55~+125°C
Operating Temperature	-40~+75°C

Typical Performance:

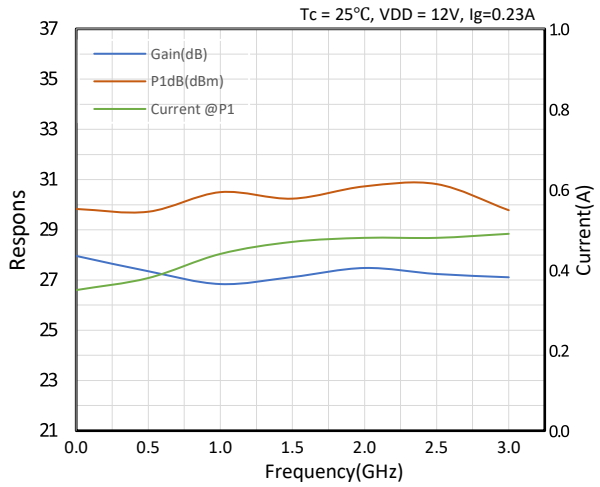
Gain & ReturnLoss



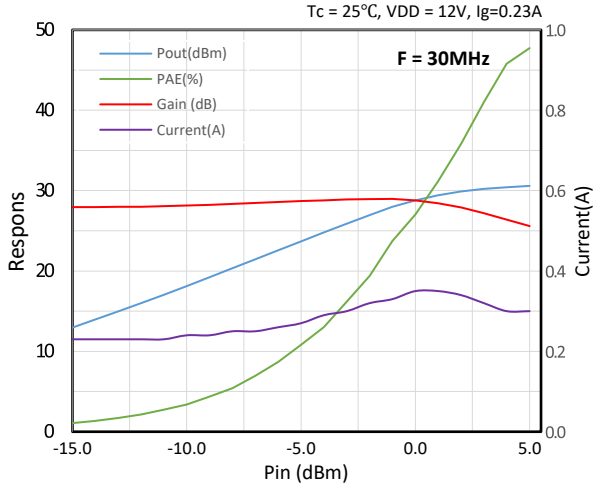
Noise Figure



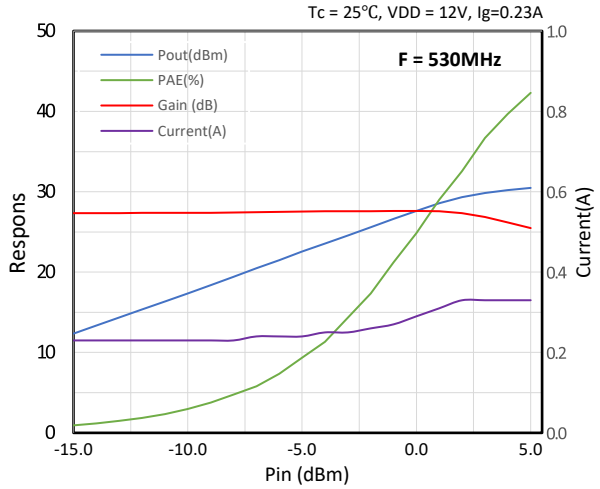
Gain & P1dB & Current vs. Frequency



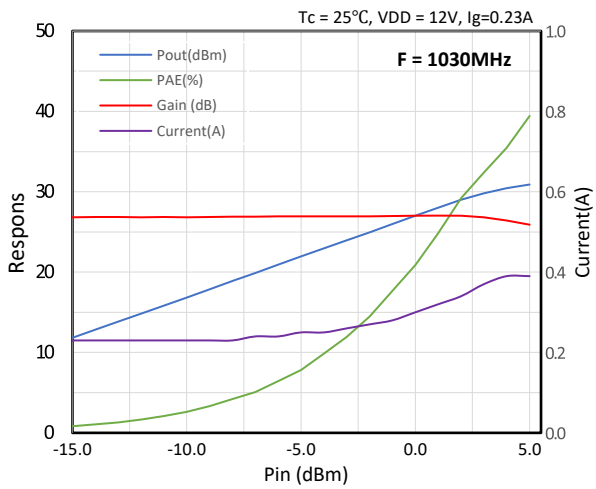
Out Power & Current vs. Input Power



Out Power & Current vs. Input Power



Out Power & Current vs. Input Power



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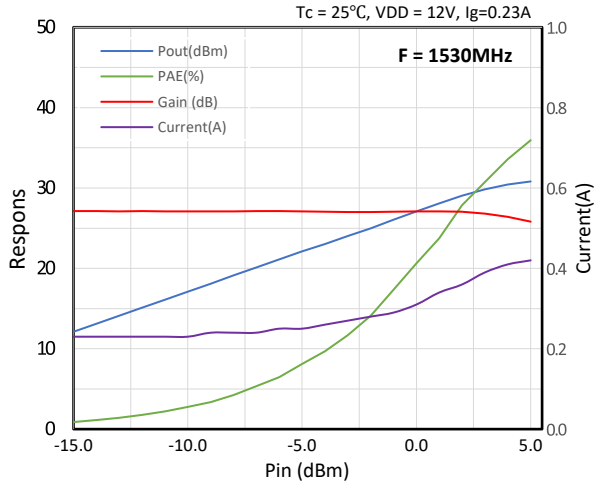
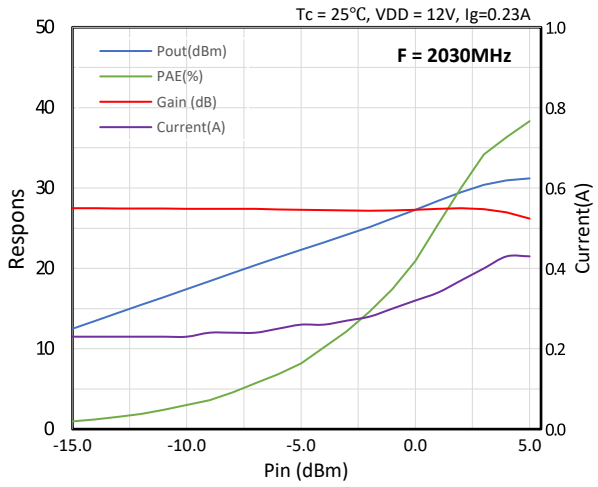
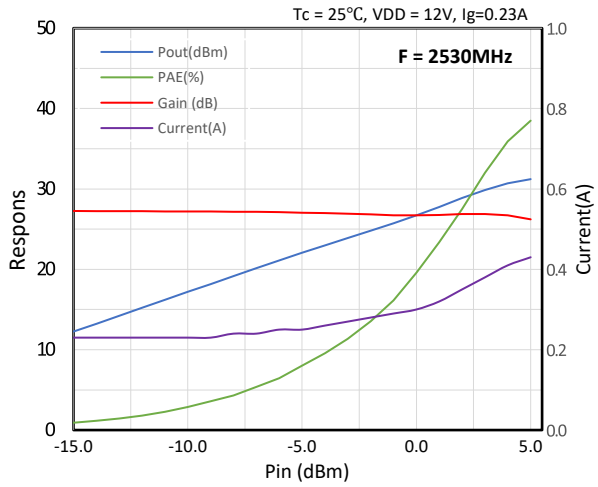
Out Power & Current vs. Input Power



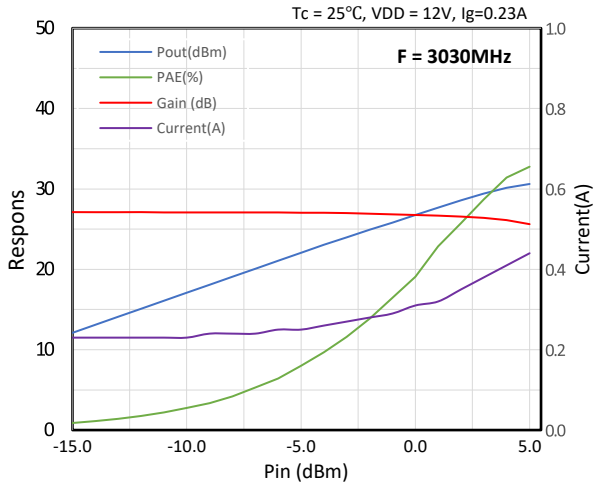
Out Power & Current vs. Input Power



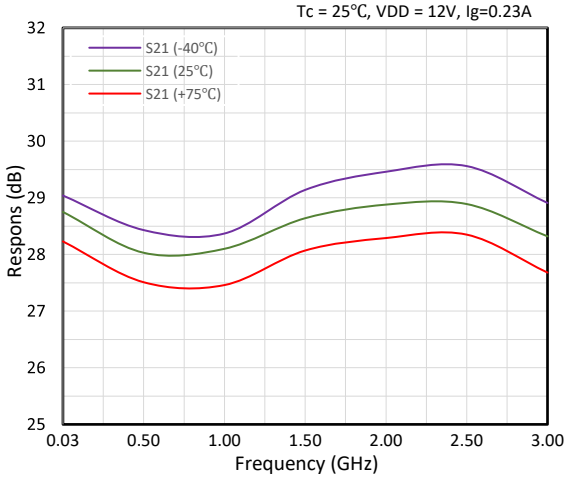
Out Power & Current vs. Input Power



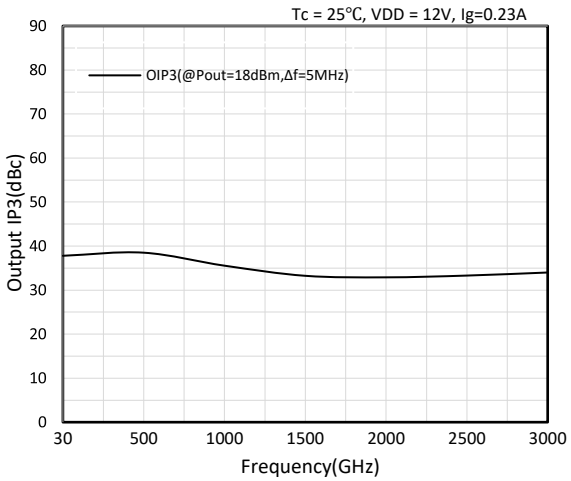
Out Power & Current vs. Input Power



GAIN vs. TEMPERATURE



Output IP3 vs. Frequency



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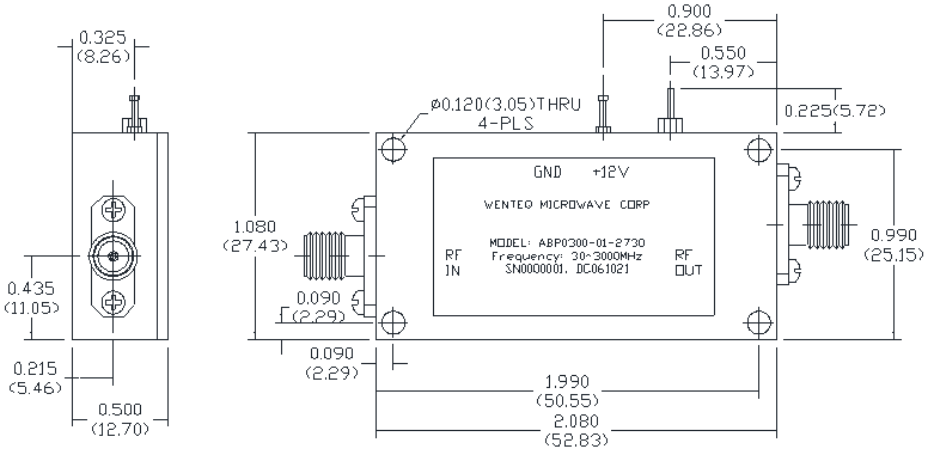
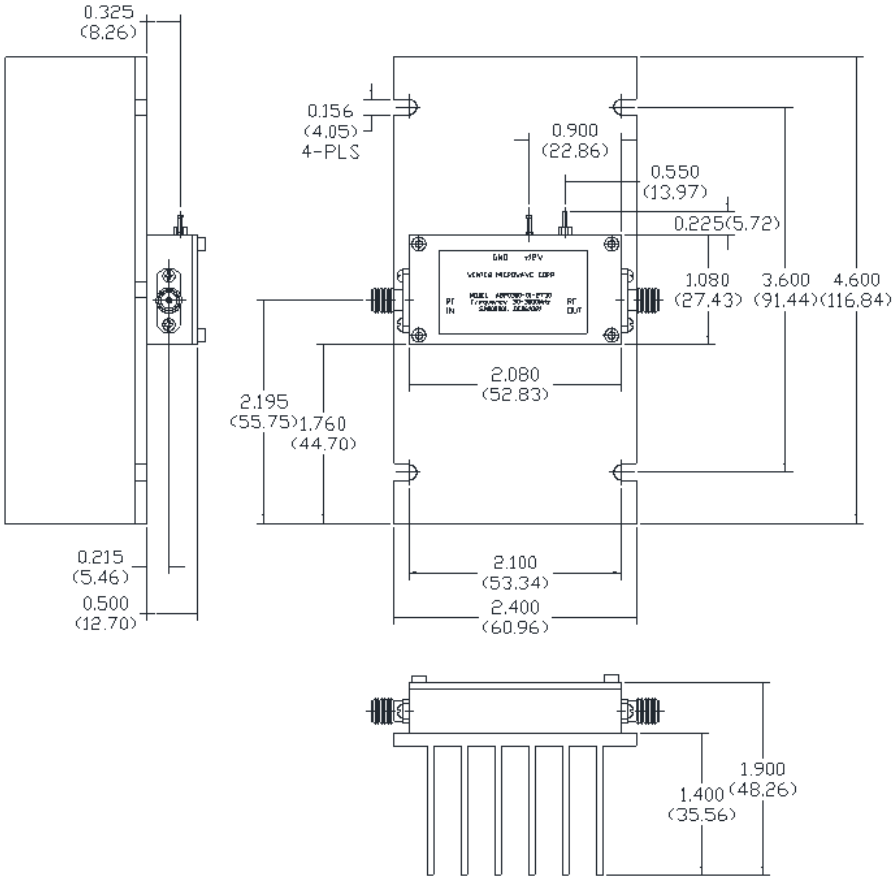
Mechanical Structure:



(a) ABP0300-01-2730 Amplifier without heatsink



(b) ABP0300-01-2730-X Amplifier with heatsink

Note: All units are in inches (mm). All tolerances are +/-0.005 inch unless otherwise specified

Housing Material and Surface Finish:

Body and cover material: aluminum
Surface finish: nickel plated
Connector material: Copper
Connector surface finish: gold plated
Heatsink material: Aluminum, surface finish: Black anodized

Revision History

Revision	Date	Description	Comments
A00	12/28/2011	Initial Release	
A01	08/23/2022	P-1dB, DC Current *etc*. change	Transistor change
A02	08/05/2025	NF, RL, and DC current change	Devices change
A03	09/09/2025	P-1dB, RL, Out IP3 and DC current change	Transistor change

WARNING: This device is electrostatic sensitive, please observe precautions for safe handling of this amplifier.

WARNING: This product can expose you to chemicals including Nickel (Metallic) and Gallium Arsenide which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to **www.P65warnings.ca.gov**.