BROADBAND POWER AMPLIFIER
ABP0100-10-1729 Revision A01

Features:

- Octave bandwidth, specification from 100~1000MHz
- Low noise figure, high gain with good gain flatness
- Low VSWR, unconditional stable
- SMA female connector I/O
- Single DC power supply
- Operating temperature -40~+75°C, storage temperature -55~+125°C

General Description

ABL0100-10-1729 is a single stage pHEMT based broadband power amplifier module operating in the frequency of 100 to 1000MHz and provide +29dBm minimum output P-1dB power with 17dB of small signal gain. The amplifier requires only a single positive DC power supply, its built-in DC voltage regulator allows for different DC voltage supply application. This amplifier is ideal for telecommunication infrastructures, microwave radio, test instrumentation and military applications.

Electrical Specifications

Parameters	Units	Specifications		
		Minimum	Typical	Maximum
Frequency Range	MHz	100.0		1000.0
P-1dB Compression Point	dBm	+29.0	+30.0	
Output IP3	dBm	+40.0	+45.0	
Nominal SS Gain @25°C	dB	15.0	17.0	18.5
Gain flatness	dB		+/-0.75	+/-1.0
Gain Variation	dB		+/-1.0	
Noise Figure	dB		3.5	4.5
Input VSWR	-		1.6:1	2.0:1
Output VSWR	-		1.8:1	2.0:1
Reverse Isolation	dB	20.0	23.0	
Spurious	dBc			-60.0
Operating Temperature	°C	-40.0		+75.0
Survival Temperature	°C	-55.0		+125.0
DC Voltage	V	+11.5	+12.0	+13.0
DC Supply Current	mA	290	350	450
In/Out connectors	-	50 ohm SMA female		
Size	inches	1.2x1.0x0.4		

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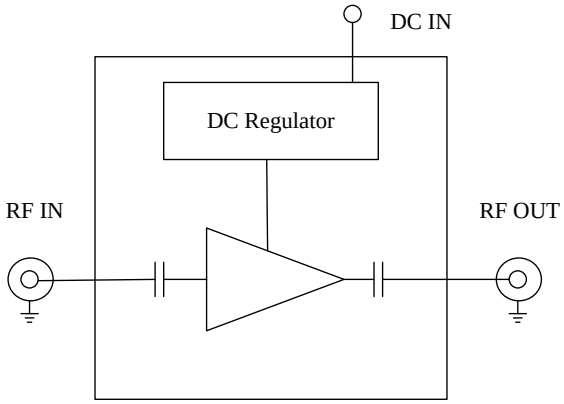
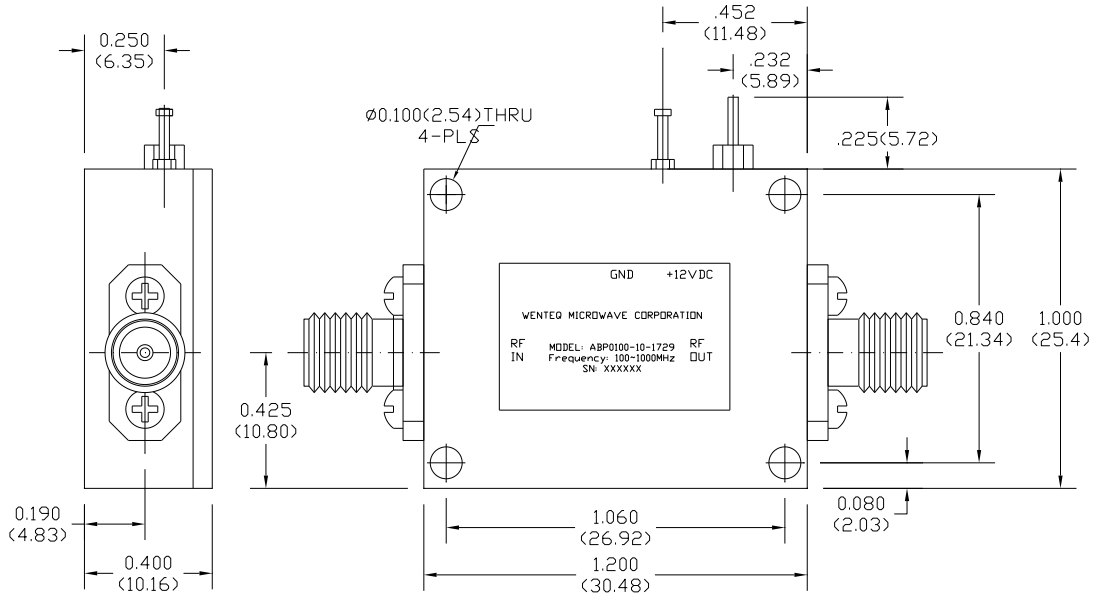
Functional Diagram



Mechanical Structure:



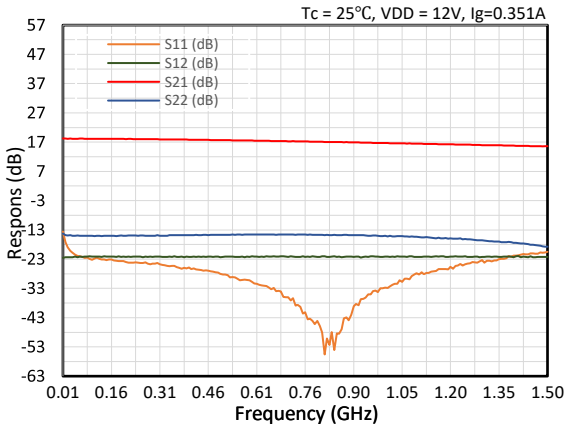
Note: All units in inches (mm).

Housing Material and Surface Finish:

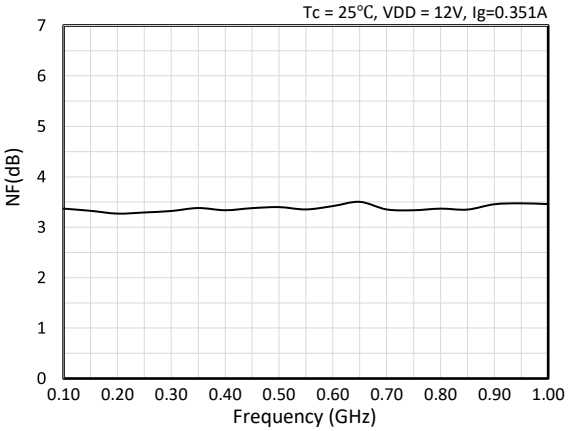
Body and cover material: aluminum
Surface finish: nickel plated
Connector material: Copper
Connector surface finish: gold plated

Typical Test Results:

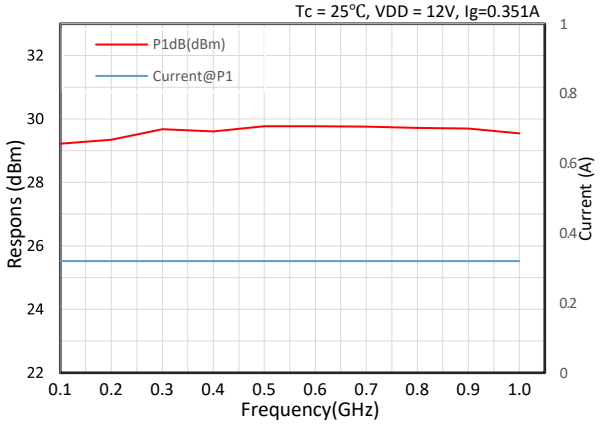
Gain & ReturnLoss



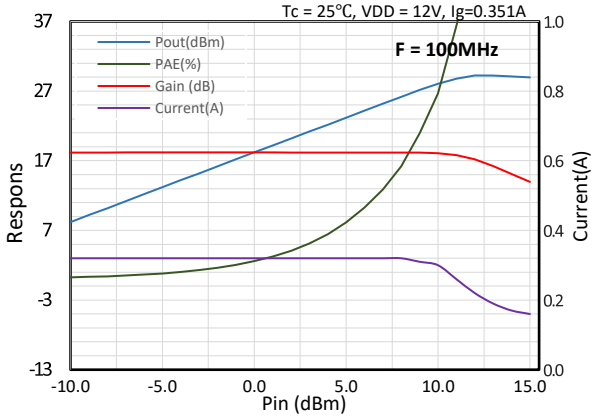
Noise Figure



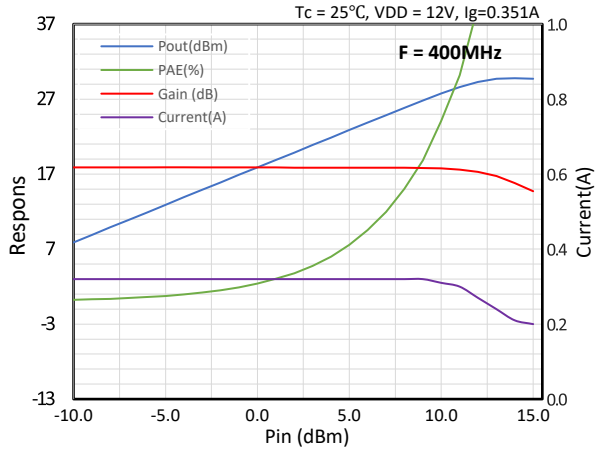
Gain & Output Power vs. Frequency



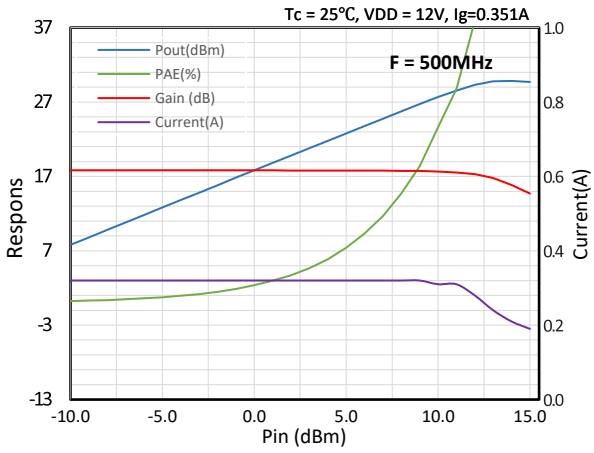
Out Power & Current vs. Input Power



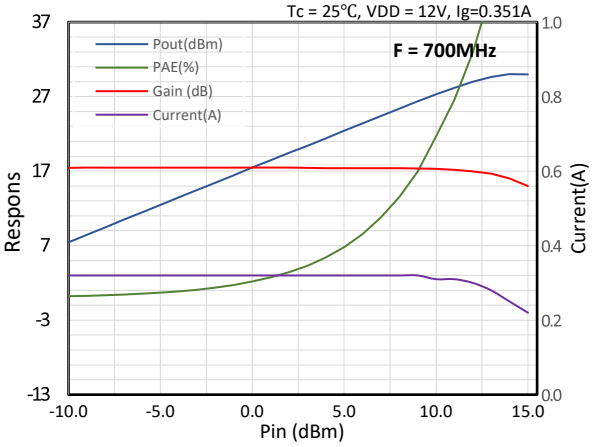
Out Power & Current vs. Input Power



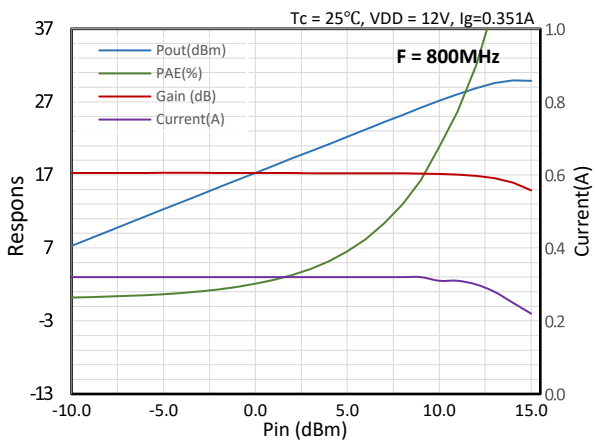
Out Power & Current vs. Input Power



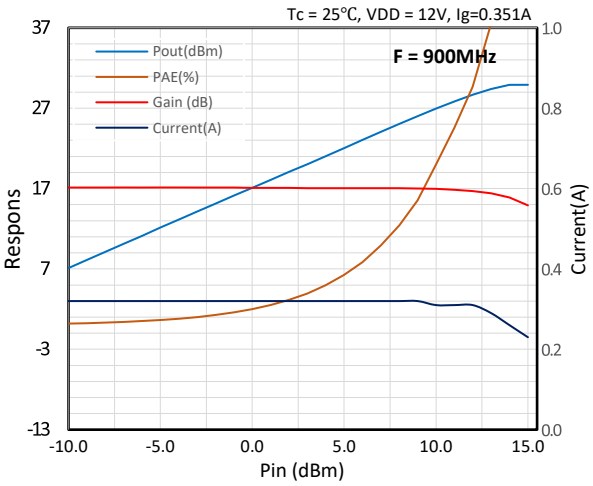
Out Power & Current vs. Input Power



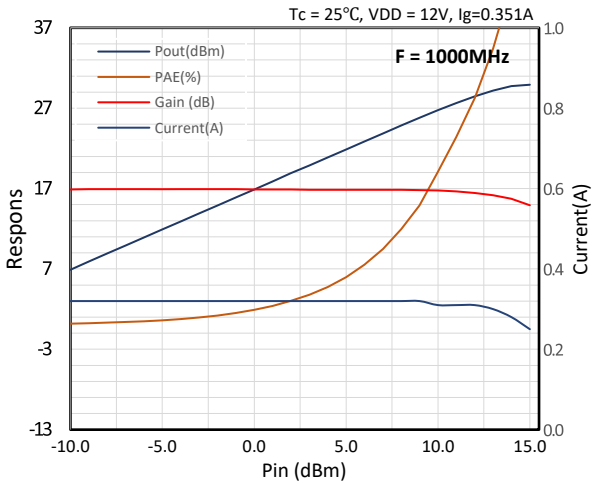
Out Power & Current vs. Input Power



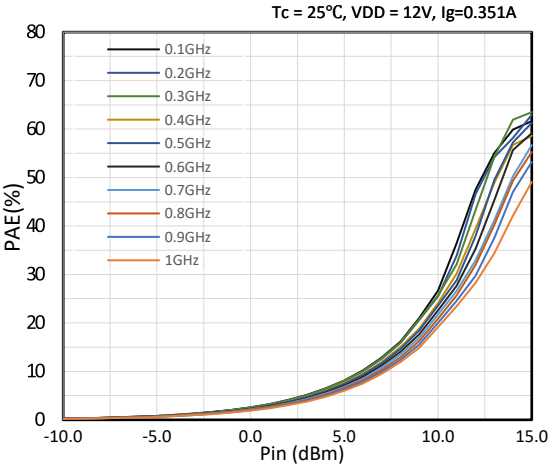
Out Power & Current vs. Input Power



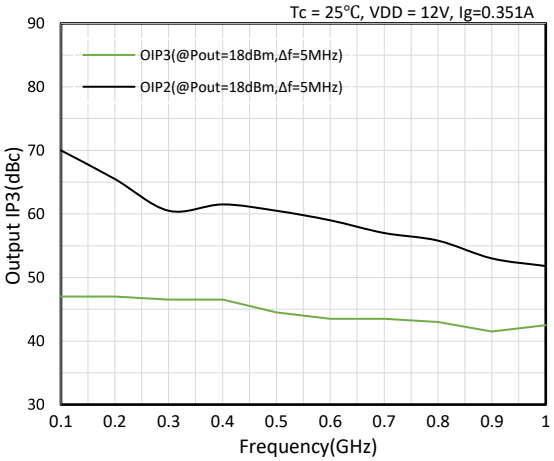
Out Power & Current vs. Input Power



PAE vs. Input Power



Output IP3 vs. Frequency



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Absolute Maximum Ratings

DC Voltage	+13V
RF Input Power	+16dBm
Storage Temperature	-55~+125°C
Operating Temperature	-40~+75°C

Revision History:

Revision	Date	Description	Comments
A00	06/10/2016	Initial Release	
A01	10/31/2025	Gain flatness, Noise Figure and Reverse Isolation	

WARNING: This device is electrostatic sensitive, please observe precautions for safe handling 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**.