



YTPA-0020-23

Features:

Frequency: DC~20GHz

Small Signal : 16dB

Flatness: $\leq \pm 0.5\text{dB@DC-20GHz}$

Noise Figure: $\leq 4\text{dB}$

P-1dB: 22dBm

Psat: 23dBm

Supplying: +8V/100mA

PI.PO.: 50Ohm

Size: 2.94 x 1.35 x 0.1mm

Description:

The YTPA-0020-23 is self-biased pHMET Ultra Wide distributed Amplifier which operates between 1~20GHz with small signal 16dB and Psat 23dB. The chip is back-metallized and can be die mounted with AuSn eutectic preforms or with electrically conductive epoxy. The mounting surface should be clean and flat.

Limited Parameter	
Max Drain Voltage	+14V
Max Grid Bias	-3V



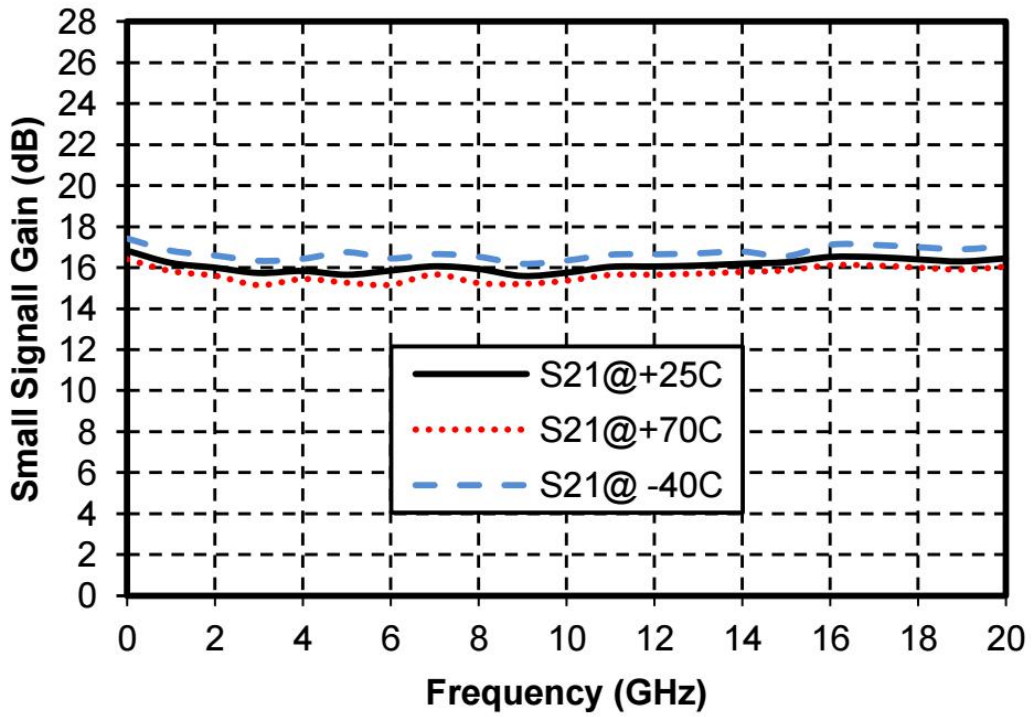
Max Input Power	+20dBm
Working Temperature	-40 ~ +70° C
Storage Temperature	-65 ~ +150° C

Electronic Spec.: 【Ta=+25° C, Vd=+8V(+11V), *Ids=100mA)】

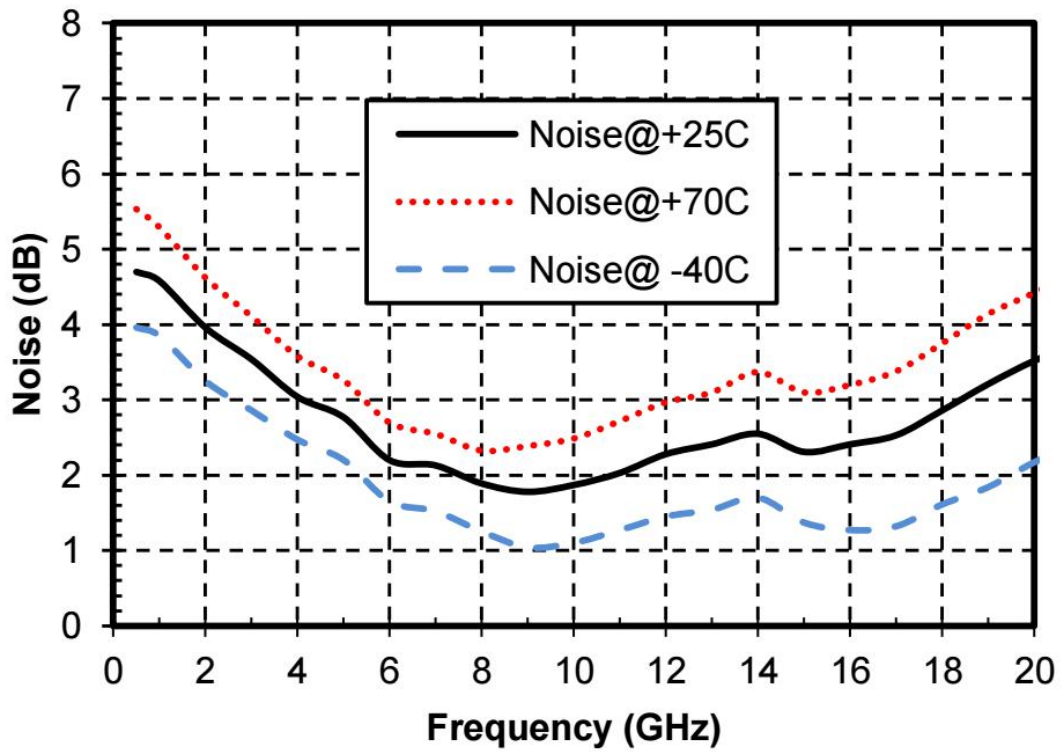
Features	Min	Typical	Max	Min	Typical	Max	Min	Typical	Max	Unit
Frequency	DC-6GHz			6-12GHz			12-20G			GHz
Small Singal Grain	15.9	16	16.2	16	16	16.2	15.9	16	16.3	dB
Flatness		±0.2			±0.1			±0.2		dB
Noise Figure	2.1	3.5	4.5	1.7	2	2.1	2.1	2.5	3.5	dB
P-1dB	21.3	21.5	21.8	21.5	22	22.4	20.5	22	22.5	dBm
Psat	22.7	23	23.3	23.1	23.5	23.7	22.7	23	23.8	dBm
Input Return Loss		15			18			15		dB
Output Return Loss		20			16			23		dB

By tuning the vg terminal voltage -2V-0V, Reach 100mA, expected Vg-0.7V

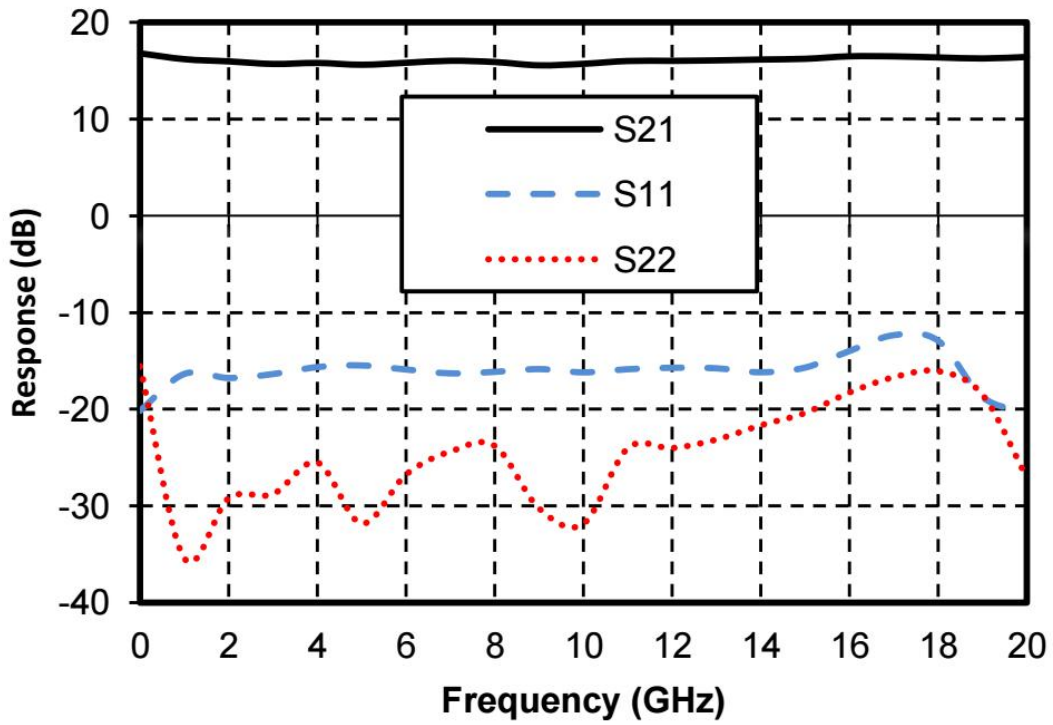
Gain VS Temperature



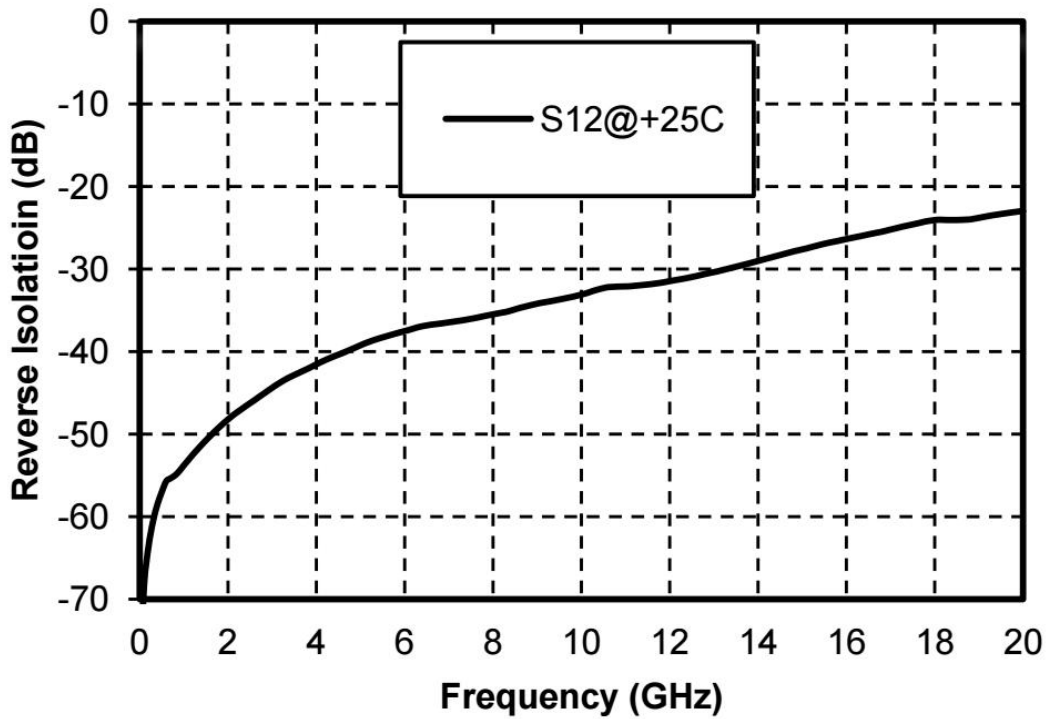
Noise Figure VS Frequency



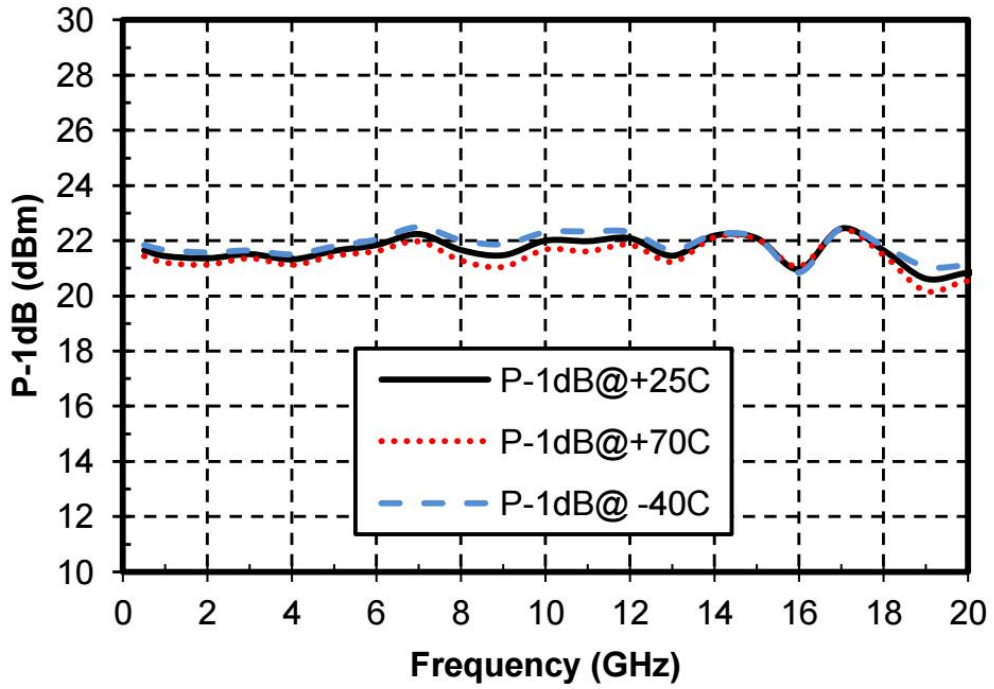
Gain&Input/Output Return Loss VS Frequency



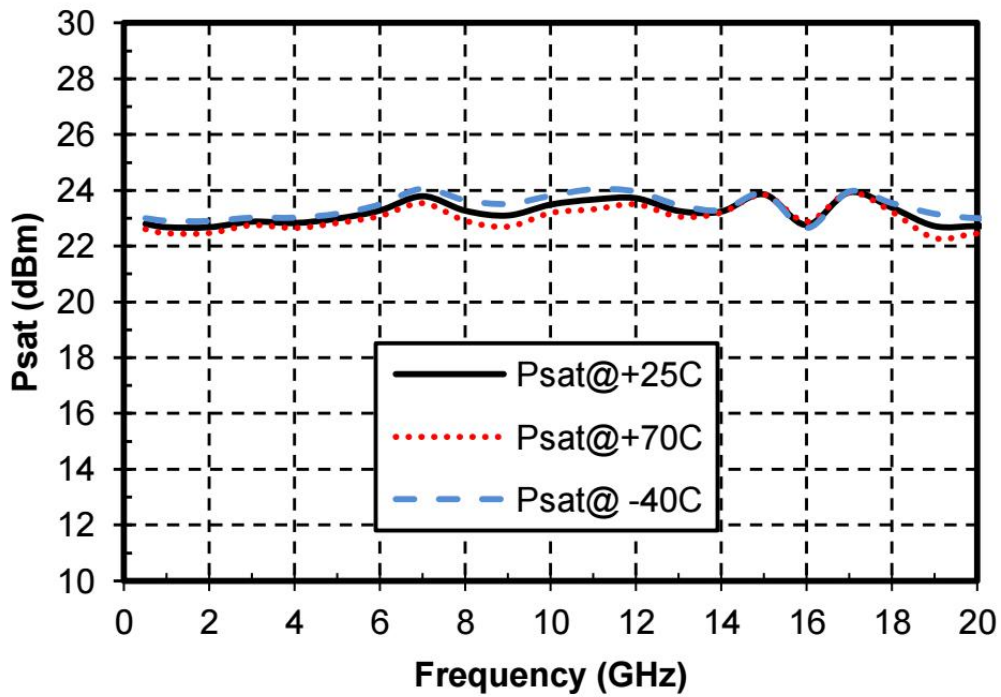
Reverse Isolation VS Frequency



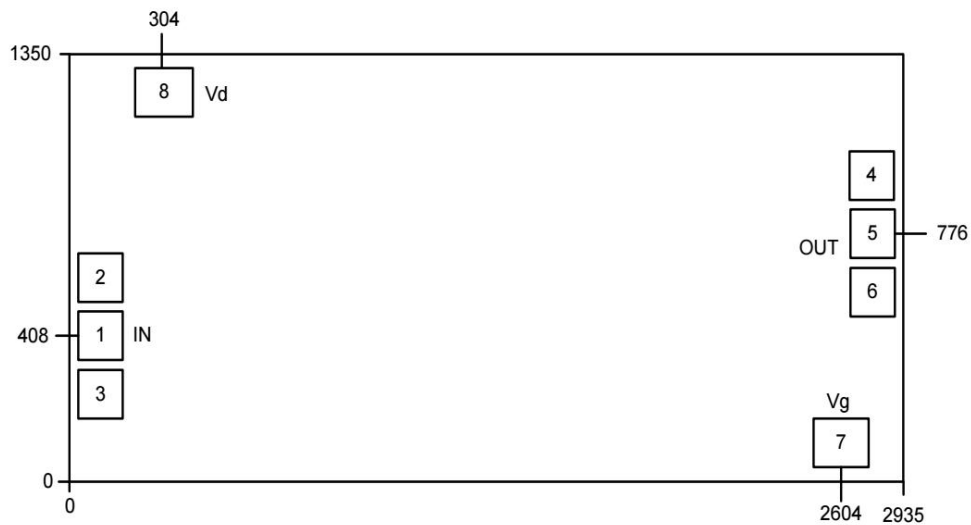
P-1dB VS Temperature



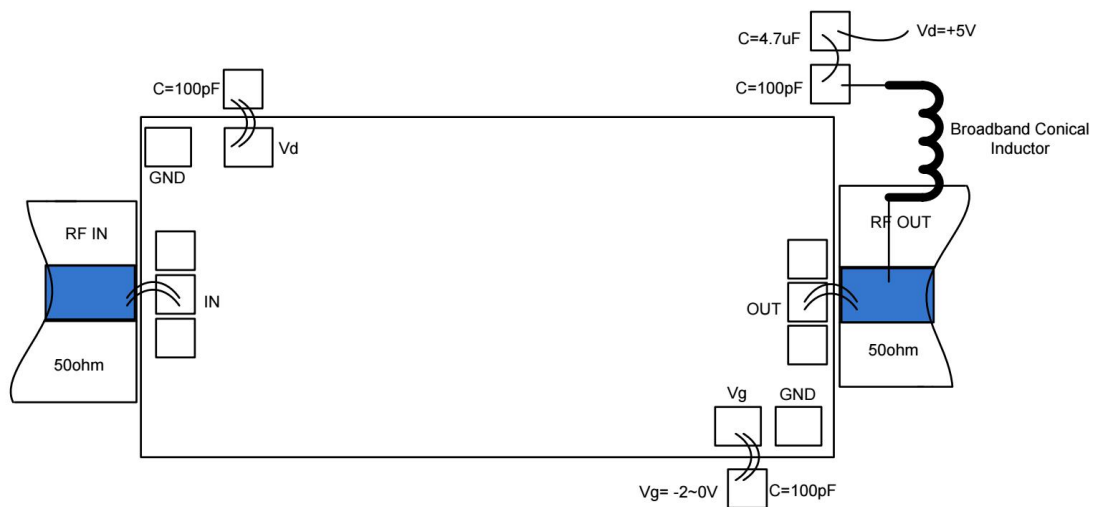
Psat VS Temperature



Outline Drawing:(μ m)



Assembly Diagram:



Handling Precautions

1. All bare die are placed in either Waffle or Gel based ESD protective containers, all die should be stored in a dry nitrogen environment.

2. Cleanliness: Handle the chips in a clean environment. DO NOT attempt to clean the chip using liquid cleaning systems

3. Follow ESD precautions to protect against ESD strikes

Handle the chip along the edges with a vacuum collet or with a sharp pair of bent tweezers. The surface of the chip has fragile air bridges and should not be touched with vacuum collet, tweezers, or fingers

4. Eutectic Die Attach: A 80/20 gold tin preform is recommended with a work



surface temperature of 255 ° C and a tool temperature of 265 ° C. When hot 90/10 nitrogen/hydrogen gas is applied, tool tip temperature should

